





Test Report issued under the responsibility of



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<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
Report Number.....	187244
Date of issue.....	October 12, 2011
Total number of pages.....	72 pages and refer to list of attachments on page 3.
<b>CB Testing Laboratory</b> .....	<b>Nemko Taiwan</b> Phone: (+ 886) 2 8797 8790
Address.....	5Fl., No. 409, Sec. 2, Tiding Blvd, Neihu, Taipei 114, TAIWAN
<b>Applicant's name</b> .....	Kaga Electronics (USA) Inc.
Address.....	2480 N First Street, Suite 100, San Jose, CA 95131, USA
<b>Manufacturer's name</b> .....	Same as applicant
Address.....	Same as applicant
<b>Test specification:</b>	
Standard .....	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
<b>Test Report Form No.</b> .....	IEC60950_1B
Test Report Form(s) Originator .....	SGS Fimko Ltd
Master TRF .....	Dated 2010-04
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<b>Test item description</b> .....	Power Adapter
Trade Mark.....	Volgen
Manufacturer.....	Same as applicant
Model/Type reference.....	KTPS.-.DT 3P (The first dot "." in the model name can be 36, 40, 45, or 50 for marketing purpose; the second dot "." in the model name can be 0940, 1233, 0950, 1242, 1533, 1827, 1926, 2025, 2421, or 4810 to represent output voltage and current.)
Ratings.....	I/P: 1.1A MAX. 100-240V~ 47-63Hz DC-output: See page 3, operation condition for details.

<b>Testing procedure and testing location:</b>	
<input checked="" type="checkbox"/> <b>CB Testing Laboratory:</b> Testing location/ address ..... :  <input type="checkbox"/> <b>Associated CB Laboratory:</b> Testing location/ address ..... :  Tested by (name + signature)..... :  Approved by (+ signature) ..... :	Nemko Taiwan 5 Fl., No. 409, Sec.2, Tiding Blvd., Neihu, Taipei 114, Taiwan   Ryan Chen  Andy Lee 
<input type="checkbox"/> Testing procedure: <b>TMP</b> Tested by (name + signature)..... : Approved by (+ signature) ..... : Testing location/ address ..... :	
<input type="checkbox"/> Testing procedure: <b>WMT</b> Tested by (name + signature)..... : Witnessed by (+ signature)..... : Approved by (+ signature) ..... : Testing location/ address ..... :	
<input type="checkbox"/> Testing procedure: <b>SMT</b> Tested by (name + signature)..... : Approved by (+ signature) ..... : Supervised by (+ signature)..... : Testing location/ address ..... :	
<input type="checkbox"/> Testing procedure: <b>RMT</b> Tested by (name + signature)..... : Approved by (+ signature) ..... : Supervised by (+ signature)..... : Testing location/ address ..... :	

**List of Attachments (including a total number of pages in each attachment):**

1. PCB layout (2 page)
2. Photos (8 pages)
3. Transformer specification (10 pages)
4. European group difference and national differences (20 pages)
5. Korean differences (1 page)
6. Canadian differences (7 pages)
7. US differences (8 pages)
8. Germany differences (1 page)

Additional National differences according to IEC 60950-1 (1ed.):

9. Australian / New Zealand differences (8 pages)
10. Singapore differences (3 pages)
11. Japanese differences (12 pages)

**Summary of testing:**
**Tests performed (name of test and test clause):**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1.6</li> <li>1.7</li> <li>2.1</li> <li>2.2</li> <li>2.4</li> <li>2.5</li> <li>2.9</li> <li>2.10</li> <li>4.2</li> <li>4.5</li> <li>4.7</li> <li>5.1</li> <li>5.2</li> <li>5.3</li> </ol> | Power interface<br>Marking and instructions<br>Protection from electric shock and energy hazards<br>SELV circuits<br>Limited current circuits<br>Limited power sources<br>Electrical insulation<br>Clearances, creepage distances and distances through insulation<br>Mechanical strength<br>Thermal requirements<br>Resistance to fire<br>Touch current and protective conductor current<br>Electric strength<br>Abnormal operating and fault conditions |
|---|---|

Annex C Transformers

Operation condition:

Model	O/P rating
KTPS36-0940DT 3P	4.0A 9Vdc
KTPS40-1233DT 3P	3.3A 12Vdc
KTPS45-0950DT 3P	5.0A 9Vdc
KTPS50-1242DT 3P	4.2A 12Vdc
KTPS50-1533DT 3P	3.3A 15Vdc
KTPS50-1827DT 3P	2.7A 18Vdc
KTPS50-1926DT 3P	2.6A 19Vdc
KTPS50-2025DT 3P	2.5A 20Vdc
KTPS50-2421DT 3P	2.1A 24Vdc
KTPS50-4810DT 3P	1.0A 48Vdc

**Testing location:**

See page 2

<p>Radio and television interference suppression compliance with the EMC directive is necessary for achieving type certification. The appliance shall comply with the relevant EMC standards, depending on the equipment in question.</p> <p>In NO, compliance with standards for radio interference suppression is a part of Nemko's certification.</p> <p>In FI, DK and SE compliance is not necessary for achieving safety certification.</p>	<p>The manufacturer has self-declared according to the EMC directive.</p>
<p>1.5, 3.2.5 Power supply cord set.</p>	<p>The equipment shall be provided with an approved mains cord set complying with the national regulations of the countries in which the appliance is to be sold.</p>
<p>1.7.2, Note 6 N, S and FI required marking for a unit which must be connected to protective earth only. The text is required because safety relies on connection to protective earth.</p>	<p>N, S and FI required marking for a unit which must be connected to protective earth only. The text is required because safety relies on connection to protective earth.</p> <p>Finnish warning text is not provided on the rating label, therefore, must be considered when enter the market. The Norwegian text is provided, it also accept in Sweden.</p>
<p>1.7.2.1, note 3 Language of safety markings/instructions.</p>	<p>Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.</p>
<p>2.7.5 Protection by several devices.</p>	<p>The standards require also a protective device in the neutral phase when connected to IT power system. For Norway, this is not required; refer to Lists of Decisions from OSM.</p>
<p>2.7.6 Warning to service personnel.</p>	<p>After operation of the protective device, the equipment is still under voltage if it is connected to an IT power system. A warning is required for service personnel.</p> <p>Norway does not require this warning.</p>
<p><b>Summary of compliance with National Differences:</b></p> <p>The sample(s) tested compliance with the requirements of IEC 60950-1:2005 (2nd Edition); Am1: 2009 and all CENELEC members except Finland (FI) as listed in EN 60950-1: 2006 +A11:2009+A1:2010+A12:2011.</p> <p>At the time of issuing this test report, not all countries are listed for IEC 60950-1:2005 (2nd Edition); Am1:2009. Therefore this test report includes national differences for IEC 60950-1:2005, 2nd Edition and IEC 60950-1: 2001 1st Edition.</p> <p>All national differences listed in the IECEE Online CB Bulletin are covered by the Common Modifications, Special National Conditions, National Deviations, and the National Requirements noted above except for the countries which are documented in Attachment. National Differences attached to this test report: refer to List of attachments for details.</p>	

Copy of marking plate: "UL Approval in process when report issued."

<p><b>Volgen</b> Kaga Electronics(USA) Inc.</p> <p><b>AC ADAPTER</b>                      MODEL :KTPS36-0940DT 3P                      INPUT (輸入) : 100-240V ~ 47-63Hz 1.1A MAX.                      OUTPUT (輸出) : 9V === 4.0A LPS</p> <p>For use with information technology equipment.                      Apparatte m3 Kun tilkoples jordet stikkontakt</p> <p>FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT</p> <p>EFFICIENCY LEVEL <b>V</b>                      FOR INDOOR USE ONLY</p> <p><b>CE</b> <b>FC</b></p> <p><b>GS</b> <b>UL</b> US LISTED I.T.E. POWER SUPPLY 60JJ E344984</p> <p><b>RoHS</b> D/C:1134 MADE IN CHINA</p>	<p><b>Volgen</b> Kaga Electronics(USA) Inc.</p> <p><b>AC ADAPTER</b>                      MODEL :KTPS40-1233DT 3P                      INPUT (輸入) : 100-240V ~ 47-63Hz 1.1A MAX.                      OUTPUT (輸出) : 12V === 3.3A LPS</p> <p>For use with information technology equipment.                      Apparatte m3 Kun tilkoples jordet stikkontakt</p> <p>FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT</p> <p>EFFICIENCY LEVEL <b>V</b>                      FOR INDOOR USE ONLY</p> <p><b>CE</b> <b>FC</b></p> <p><b>GS</b> <b>UL</b> US LISTED I.T.E. POWER SUPPLY 60JJ E344984</p> <p><b>RoHS</b> D/C:1134 MADE IN CHINA</p>	<p><b>Volgen</b> Kaga Electronics(USA) Inc.</p> <p><b>AC ADAPTER</b>                      MODEL :KTPS45-0950DT 3P                      INPUT (輸入) : 100-240V ~ 47-63Hz 1.1A MAX.                      OUTPUT (輸出) : 9V === 5.0A LPS</p> <p>For use with information technology equipment.                      Apparatte m3 Kun tilkoples jordet stikkontakt</p> <p>FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT</p> <p>EFFICIENCY LEVEL <b>V</b>                      FOR INDOOR USE ONLY</p> <p><b>CE</b> <b>FC</b></p> <p><b>GS</b> <b>UL</b> US LISTED I.T.E. POWER SUPPLY 60JJ E344984</p> <p><b>RoHS</b> D/C:1134 MADE IN CHINA</p>
<p><b>Volgen</b> Kaga Electronics(USA) Inc.</p> <p><b>AC ADAPTER</b>                      MODEL :KTPS50-1242DT 3P                      INPUT (輸入) : 100-240V ~ 47-63Hz 1.1A MAX.                      OUTPUT (輸出) : 12V === 4.2A LPS</p> <p>For use with information technology equipment.                      Apparatte m3 Kun tilkoples jordet stikkontakt</p> <p>FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT</p> <p>EFFICIENCY LEVEL <b>V</b>                      FOR INDOOR USE ONLY</p> <p><b>CE</b> <b>FC</b></p> <p><b>GS</b> <b>UL</b> US LISTED I.T.E. POWER SUPPLY 60JJ E344984</p> <p><b>RoHS</b> D/C:1136 MADE IN CHINA</p>	<p><b>Volgen</b> Kaga Electronics(USA) Inc.</p> <p><b>AC ADAPTER</b>                      MODEL :KTPS50-1533DT 3P                      INPUT (輸入) : 100-240V ~ 47-63Hz 1.1A MAX.                      OUTPUT (輸出) : 15V === 3.3A LPS</p> <p>For use with information technology equipment.                      Apparatte m3 Kun tilkoples jordet stikkontakt</p> <p>FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT</p> <p>EFFICIENCY LEVEL <b>V</b>                      FOR INDOOR USE ONLY</p> <p><b>CE</b> <b>FC</b></p> <p><b>GS</b> <b>UL</b> US LISTED I.T.E. POWER SUPPLY 60JJ E344984</p> <p><b>RoHS</b> D/C:1134 MADE IN CHINA</p>	<p><b>Volgen</b> Kaga Electronics(USA) Inc.</p> <p><b>AC ADAPTER</b>                      MODEL :KTPS50-1827DT 3P                      INPUT (輸入) : 100-240V ~ 47-63Hz 1.1A MAX.                      OUTPUT (輸出) : 18V === 2.7A LPS</p> <p>For use with information technology equipment.                      Apparatte m3 Kun tilkoples jordet stikkontakt</p> <p>FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE AUSRÜSTUNG GEDACHT</p> <p>EFFICIENCY LEVEL <b>V</b>                      FOR INDOOR USE ONLY</p> <p><b>CE</b> <b>FC</b></p> <p><b>GS</b> <b>UL</b> US LISTED I.T.E. POWER SUPPLY 60JJ E344984</p> <p><b>RoHS</b> D/C:1134 MADE IN CHINA</p>

Copy of marking plate (continued): "UL Approval in process when report issued."

**Volgen** Kaga Electronics(USA) Inc.

**AC ADAPTER**  
 MODEL :KTPS50-1926DT 3P  
 INPUT(輸入) : 100-240V ~ 47-63Hz 1.1A MAX.  
 OUTPUT(輸出) : 19V --- 2.6A LPS

For use with information technology equipment. Apparate må Kun tilkoples jordet stikkontakt		FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE. AUSRÜSTUNG GEDACHT
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EFFICIENCY LEVEL  FOR INDOOR USE ONLY 


 



  LISTED  
 I.T.E. POWER SUPPLY  
 60JJ  
 E344984



 D/C:1134  
 MADE IN CHINA  
 IP NO. A  
 XXX



**Volgen** Kaga Electronics(USA) Inc.


**AC ADAPTER**  
 MODEL :KTPS50-2025DT 3P  
 INPUT(輸入) : 100-240V ~ 47-63Hz 1.1A MAX.  
 OUTPUT(輸出) : 20V --- 2.5A LPS

For use with information technology equipment. Apparate må Kun tilkoples jordet stikkontakt		FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE. AUSRÜSTUNG GEDACHT
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EFFICIENCY LEVEL  FOR INDOOR USE ONLY 

  LISTED  
 I.T.E. POWER SUPPLY  
 60JJ  
 E344984

 D/C:1134  
 MADE IN CHINA  
 IP NO. A  
 XXX

**Volgen** Kaga Electronics(USA) Inc.

**AC ADAPTER**  
 MODEL :KTPS50-2421DT 3P  
 INPUT(輸入) : 100-240V ~ 47-63Hz 1.1A MAX.  
 OUTPUT(輸出) : 24V --- 2.1A LPS

For use with information technology equipment. Apparate må Kun tilkoples jordet stikkontakt		FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE. AUSRÜSTUNG GEDACHT
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EFFICIENCY LEVEL  FOR INDOOR USE ONLY 

  LISTED  
 I.T.E. POWER SUPPLY  
 60JJ  
 E344984

 D/C:1134  
 MADE IN CHINA  
 IP NO. A  
 XXX

**Volgen** Kaga Electronics(USA) Inc.

**AC ADAPTER**  
 MODEL :KTPS50-4810DT 3P  
 INPUT(輸入) : 100-240V ~ 47-63Hz 1.1A MAX.  
 OUTPUT(輸出) : 48V --- 1.0A LPS

For use with information technology equipment. Apparate må Kun tilkoples jordet stikkontakt		FÜR DEN GEBRAUCH MIT INFORMATIONSTECHNOLOGIE. AUSRÜSTUNG GEDACHT
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EFFICIENCY LEVEL  FOR INDOOR USE ONLY 

  LISTED  
 I.T.E. POWER SUPPLY  
 60JJ  
 E344984

 D/C:1134  
 MADE IN CHINA  
 IP NO. A  
 XXX

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<b>Test item particulars</b> .....	
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition .....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location .....	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
Mains supply tolerance (%) or absolute mains supply values .....	±10%
Tested for IT power systems .....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	230V
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A) .....	16A or 20A (for Canada and US)
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class .....	IP20
Altitude during operation (m) .....	Up to 2000m
Altitude of test laboratory (m) .....	Up to 2000m
Mass of equipment (kg) .....	Weight: 0.27kg Dimensions: 115 x 52.0 x 36.0 mm
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N/A
- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>Testing</b> .....	
Date of receipt of test item .....	September, 2011
Date(s) of performance of tests.....	September, 2011

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**General remarks:**

The test results presented in this report relate only to the object tested.  
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a  comma /  point is used as the decimal separator.

**Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60950-1:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....:  Yes  Not applicable

When differences exist; they shall be identified in the General Product Information section.

**Name and address of factory (ies)..... :**

BOAYANG ELECTRONICS CO., LTD.  
Di Feng Gong Ye Qu 2 Hao, Xiasha Liuwu Village, Shipai Town, Dong Guan City, Guang Dong Province, China



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**General product information:**

The equipment under test is a Class I switching type power adapter. The EUT is intended to be connected to TN or IT power system operating in an environment judged to be pollution degree 2.

The EUT has the following features:

- The EUT included two PCB layout (call A, B, it's identical to each other, except PCB layout on solder side, see attachment PCB layout and photos for details, if nothing else mention, the testing conducted on PCB A to represent PCB B) at solder side for all models, see attachment PCB layout for details.
- All models are identical to each others except for model name, output rating and sec. components and transformer (T101) in table list as below:

Model name	DC output rating	Transformer (T101)
KTPS36-0940DT 3P	4.0A 9Vdc	R53S10-1410
KTPS45-0950DT 3P	5.0A 9Vdc	R53S10-1410
KTPS40-1233DT 3P	3.3A 12Vdc	R53S10-1420
KTPS50-1242DT 3P	4.2A 12Vdc	R53S10-1420
KTPS50-1533DT 3P	3.3A 15Vdc	R53S10-1430
KTPS50-1827DT 3P	2.7A 18Vdc	R53S10-1440
KTPS50-1926DT 3P	2.6A 19Vdc	R53S10-1440
KTPS50-2025DT 3P	2.5A 20Vdc	R53S10-1440
KTPS50-2421DT 3P	2.1A 24Vdc	R53S10-1450
KTPS50-4810DT 3P	1.0A 48Vdc	R53S10-1460

All transformers are identical to each other except secondary winding (N3 and N4) diameter and turns.

Unless otherwise indicated, tests were performed on model KTPS45-0950DT 3P (max. output current), KTPS50-1242DT 3P (max. output watt) and KTPS50-4810DT 3P (max. output voltage) to represent all models.

Circuit characteristics: The equipment contains primary and secondary (SELV) and limited current circuits.

Maximum recommended ambient (T<sub>mra</sub>): 40°C

1.1.2 - Additional requirements:

Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:

This equipment is intended to operate in a "normal" environment (Offices and homes).

Electromedical equipment connected to the patient:

This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:

This equipment is intended to operate in a "normal" environment (Offices and homes).

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	FI	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	<b>GENERAL</b>		<b>P</b>

<b>1.5</b>	<b>Components</b>		<b>P</b>
1.5.1	General	See below.	<b>P</b>
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	<b>P</b>
1.5.2	Evaluation and testing of components	Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard. 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. Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1.	<b>P</b>
1.5.3	Thermal controls	No thermal controls.	<b>N/A</b>
1.5.4	Transformers	Transformer used is suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C, see Annex C – Transformer.	<b>P</b>
1.5.5	Interconnecting cables	The interconnecting cables do not represent any hazard in the meaning of this standard.	<b>P</b>
1.5.6	Capacitors bridging insulation	X1 or X2 and Y1 or Y2 capacitors according to IEC 60384-14:1993. Double / reinforced insulation are bridged by capacitors (C108, C109, C115). Capacitor separately certified ref. List of Critical Components. Circuit complies with 2.4.	<b>P</b>
1.5.7	Resistors bridging insulation	Refer below:	<b>P</b>

<b>IEC 60950-1</b>			
<b>Clause</b>	<b>Requirement + Test</b>	<b>Result - Remark</b>	<b>Verdict</b>
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Bleeder resistors R102, R103 (two in series located after fuse) are bridging functional insulation.	<b>P</b>
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such resistors used.	<b>N/A</b>
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	Not connected to antenna or coaxial cable.	<b>N/A</b>
1.5.8	Components in equipment for IT power systems	No components connected between line and earth.	<b>N/A</b>
1.5.9	Surge suppressors	No such parts.	<b>N/A</b>
1.5.9.1	General	No such parts.	<b>N/A</b>
1.5.9.2	Protection of VDRs	No such parts.	<b>N/A</b>
1.5.9.3	Bridging of functional insulation by a VDR	No such parts.	<b>N/A</b>
1.5.9.4	Bridging of basic insulation by a VDR	No such parts.	<b>N/A</b>
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such parts.	<b>N/A</b>

<b>1.6</b>	<b>Power interface</b>		<b>P</b>
1.6.1	AC power distribution systems	TN, and IT for Norway.	<b>P</b>
1.6.2	Input current	(see appended table 1.6.2)	<b>P</b>
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	<b>N/A</b>
1.6.4	Neutral conductor	Neutral is insulated from earth with double / reinforced insulation throughout the equipment.	<b>P</b>

<b>1.7</b>	<b>Marking and instructions</b>		<b>P</b>
1.7.1	Power rating and identification markings	The required marking is located on the outside surface of the equipment.	<b>P</b>
1.7.1.1	Power rating marking	See below,	<b>P</b>
	Multiple mains supply connections.....:	Only one mains supply connections.	<b>N/A</b>
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240V~	<b>P</b>

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Symbol for nature of supply, for d.c. only ..... :	The equipment is for a.c. supply.	<b>N/A</b>
	Rated frequency or rated frequency range (Hz) ... :	47-63Hz	—
	Rated current (mA or A) ..... :	1.1A MAX.	<b>P</b>
1.7.1.2	Identification markings	See below,	<b>P</b>
	Manufacturer's name or trade-mark or identification mark ..... :	Volgen	—
	Model identification or type reference ..... :	KTPS.-DT 3P	<b>P</b>
	Symbol for Class II equipment only ..... :	The equipment is Class I.	<b>N/A</b>
	Other markings and symbols ..... :	The additional marking does not give rise to misunderstandings.	<b>P</b>
1.7.2	Safety instructions and marking	FI, N and S required marking for an unit that must be connected to protective earth only. The text is required because safety relies on connection to protective earth. The Norwegian warning text is provided on marking plate, it also acceptable in Sweden. Finnish text is not provided on the marking plate, therefore, must be considered when enter Finland market.	—
1.7.2.1	General	Refer to sub-clause 1.7.2.	—
1.7.2.2	Disconnect devices	The appliance coupler will be acting as disconnect device.	<b>N/A</b>
1.7.2.3	Overcurrent protective device	Not applicable for pluggable equipment type A equipment.	<b>N/A</b>
1.7.2.4	IT power distribution systems	The following or similar information should be given in the installation instruction: "This product is also designed for IT power distribution system with phase-to-phase voltage 230V".	—
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	<b>N/A</b>
1.7.2.6	Ozone	The equipment not containing ozone.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N/A
1.7.4	Supply voltage adjustment .....	No voltage selector.	N/A
	Methods and means of adjustment; reference to installation instructions .....		—
1.7.5	Power outlets on the equipment .....	No power outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....	Fuse locations and markings: F101 and T2.0A/250Vac	P
1.7.7	Wiring terminals	Refer below:	N/A
1.7.7.1	Protective earthing and bonding terminals .....	Appliance inlet, marking of the protective earthing terminal is not applicable.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Equipment provided with appliance inlet.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	The equipment is not supplied from d.c mains.	N/A
1.7.8	Controls and indicators	Refer below:	P
1.7.8.1	Identification, location and marking .....	The function of controls affecting safety is obvious without knowledge of language etc.	P
1.7.8.2	Colours .....	For functional indication a LED lights when the equipment is operating.	P
1.7.8.3	Symbols according to IEC 60417 .....	There is no switch in the equipment.	N/A
1.7.8.4	Markings using figures .....	No controls affecting safety are using figures.	N/A
1.7.9	Isolation of multiple power sources .....	Only one connection supplying hazardous voltages and energy levels to the equipment.	N/A
1.7.10	Thermostats and other regulating devices .....	No thermostats or other regulating devices.	N/A
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	No removable parts.	N/A
1.7.13	Replaceable batteries .....	No battery in the equipment.	N/A
	Language(s) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.14	Equipment for restricted access locations.....:	Equipment not intended for installation in RAL.	N/A
<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		<b>P</b>
2.1	Protection from electric shock and energy hazards		<b>P</b>
2.1.1	Protection in operator access areas	Refer below:	<b>P</b>
2.1.1.1	Access to energized parts	Energized parts are not accessible.	<b>P</b>
	Test by inspection .....	Complies.	<b>P</b>
	Test with test finger (Figure 2A) .....	Complies.	<b>P</b>
	Test with test pin (Figure 2B) .....	Complies.	<b>P</b>
	Test with test probe (Figure 2C) .....	Not applicable.	<b>N/A</b>
2.1.1.2	Battery compartments	No battery compartments in the equipment.	<b>N/A</b>
2.1.1.3	Access to ELV wiring	No internal wiring at ELV accessible to the operator.	<b>N/A</b>
	Working voltage (V <sub>peak</sub> or V <sub>rms</sub> ); minimum distance through insulation (mm)	(see appended table 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation, complying with 2.10.5 and 3.1.4.	<b>P</b>
2.1.1.5	Energy hazards .....	No energy hazard in operator access area. Checked by means of test finger. (see appended table 2.1.1.5)	<b>P</b>
2.1.1.6	Manual controls	No shafts of knobs etc.	<b>N/A</b>
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0.1µF. The measurement was performed in worst case condition with regard to the fuse.	<b>P</b>
	Measured voltage (V); time-constant (s) .....	The max. time constant is 740 ms. Condition: C102= 0.33µF, R102=R103=1MΩ, no load.	<b>P</b>
2.1.1.8	Energy hazards – d.c. mains supply	Not connected to d.c. mains supply.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Capacitor connected to the d.c. mains supply . :		<b>N/A</b>
	b) Internal battery connected to the d.c. mains supply .....		<b>N/A</b>
2.1.1.9	Audio amplifiers .....	No audio amplifier.	<b>N/A</b>
2.1.2	Protection in service access areas	Checked by inspection, unintentional contact is unlikely during service operations.	<b>P</b>
2.1.3	Protection in restricted access locations	Equipment not intended for installation in RAL.	<b>N/A</b>

<b>2.2</b>	<b>SELV circuits</b>		<b>P</b>
2.2.1	General requirements	SELV limits are not exceeded under normal condition and after a single fault.	<b>P</b>
2.2.2	Voltages under normal conditions (V) .....	Within SELV limits. (see appended table 2.2)	<b>P</b>
2.2.3	Voltages under fault conditions (V) .....	Within SELV limits. (see appended table 2.2)	<b>P</b>
2.2.4	Connection of SELV circuits to other circuits .....	SELV circuits are only connected to other SELV and limited current circuits.	<b>P</b>

<b>2.3</b>	<b>TNV circuits</b>		<b>N/A</b>
2.3.1	Limits	2.3.1-2.3.5: No TNV circuits.	<b>N/A</b>
	Type of TNV circuits .....		—
2.3.2	Separation from other circuits and from accessible parts		<b>N/A</b>
2.3.2.1	General requirements		<b>N/A</b>
2.3.2.2	Protection by basic insulation		<b>N/A</b>
2.3.2.3	Protection by earthing		<b>N/A</b>
2.3.2.4	Protection by other constructions .....		<b>N/A</b>
2.3.3	Separation from hazardous voltages		<b>N/A</b>
	Insulation employed .....		—
2.3.4	Connection of TNV circuits to other circuits		<b>N/A</b>
	Insulation employed .....		—
2.3.5	Test for operating voltages generated externally		<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict

<b>2.4</b>	<b>Limited current circuits</b>		<b>P</b>
2.4.1	General requirements	Limits are not exceeded. C108=C109=C115=1000pF	<b>P</b>
2.4.2	Limit values	1) 45.5mA (C108 under normal condition). 2) 45.5mA (C109 under normal condition). 3) 60.9mA (C115 under normal condition).	<b>P</b>
	Frequency (Hz) .....	1) 65kHz 2) 65kHz 3) 87KHz	—
	Measured current (mA).....	1) 0.42mA 2) 0.42mA 3) 2.5mA	—
	Measured voltage (V) .....	1) 0.84V 2) 0.84V 3) 5V	—
	Measured circuit capacitance (nF or $\mu$ F).....	Total capacitance is < 0.1 $\mu$ F.	—
2.4.3	Connection of limited current circuits to other circuits	Under normal operating condition and no fault condition can cause higher current.	<b>P</b>

<b>2.5</b>	<b>Limited power sources</b>		<b>P</b>
	a) Inherently limited output		<b>N/A</b>
	b) Impedance limited output		<b>N/A</b>
	c) Regulating network limited output under normal operating and single fault condition	(See appended table 2.5)	<b>P</b>
	d) Overcurrent protective device limited output		<b>N</b>
	Max. output voltage (V), max. output current (A), max. apparent power (VA).....	(See appended table 2.5)	<b>P</b>
	Current rating of overcurrent protective device (A) ..	Not used.	<b>N/A</b>
	Use of integrated circuit (IC) current limiters	Not used.	<b>N/A</b>

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		<b>P</b>
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Clause	Requirement + Test	Result - Remark	Verdict
2.6.1	Protective earthing	No protective earth except appliance inlet ground pin. The appliance inlet ground pin is separated from all Hazardous Voltages/Circuits by Double/Reinforced Insulation.	<b>N/A</b>
2.6.2	Functional earthing	Functional earthing is separated from hazardous voltages by reinforced insulation. Equipment is considered class I equipment with class II construction throughout, class II symbol is not used.	<b>P</b>
2.6.3	Protective earthing and protective bonding conductors	Refer below:	<b>N/A</b>
2.6.3.1	General	Refer below:	—
2.6.3.2	Size of protective earthing conductors	No protective earthing conductors.	<b>N/A</b>
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
2.6.3.3	Size of protective bonding conductors	No protective bonding conductors.	<b>N/A</b>
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG.....		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min).....		<b>N/A</b>
2.6.3.5	Colour of insulation .....	No protective earthing and bonding conductors.	<b>N/A</b>
2.6.4	Terminals	Refer below:	—
2.6.4.1	General	Refer below:	—
2.6.4.2	Protective earthing and bonding terminals	Refer below:	—
	Rated current (A), type, nominal thread diameter (mm).....	No protective earthing and bonding terminals.	<b>N/A</b>
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	No protective earthing and bonding terminals.	<b>N/A</b>
2.6.5	Integrity of protective earthing	No protective earthing.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.1	Interconnection of equipment		<b>N/A</b>
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		<b>N/A</b>
2.6.5.3	Disconnection of protective earth		<b>N/A</b>
2.6.5.4	Parts that can be removed by an operator		<b>N/A</b>
2.6.5.5	Parts removed during servicing		<b>N/A</b>
2.6.5.6	Corrosion resistance		<b>N/A</b>
2.6.5.7	Screws for protective bonding		<b>N/A</b>
2.6.5.8	Reliance on telecommunication network or cable distribution system		<b>N/A</b>

<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		<b>P</b>
2.7.1	Basic requirements	Protective devices are integrated in the equipment, see also Sub-clause 5.3.	<b>P</b>
	Instructions when protection relies on building installation	Protective devices are integrated in the equipment.	<b>P</b>
2.7.2	Faults not simulated in 5.3.7	Considered.	<b>P</b>
2.7.3	Short-circuit backup protection	Adequate protective device.	<b>P</b>
2.7.4	Number and location of protective devices .....	In Norway, IT power distribution system is used. Equipment with a single protective device is accepted in Norway	<b>P</b>
2.7.5	Protection by several devices	Only one protective device. See Sub-clause 2.7.4.	<b>N/A</b>
2.7.6	Warning to service personnel .....	After operation of the protective device, the equipment is still under voltage if it is connected to an IT-power distribution system. A warning is required for service personnel. Norway does not require this warning. See also Sub-clause 2.7.4.	<b>N/A</b>

<b>2.8</b>	<b>Safety interlocks</b>		<b>N/A</b>
2.8.1	General principles	No safety interlock provided.	<b>N/A</b>
2.8.2	Protection requirements		<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (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

<b>2.9</b>	<b>Electrical insulation</b>		<b>P</b>
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. No driving belts or couplings used.	N/A
2.9.2	Humidity conditioning	Humidity treatment performed at 120 hr.	P
	Relative humidity (%), temperature (°C) .....	93%, 40°C	—
2.9.3	Grade of insulation	Insulation is considered to be functional, supplementary, reinforced or double insulation.	P
2.9.4	Separation from hazardous voltages	The accessible conductive parts, including SELV circuits and their related windings, are separated from parts at hazardous voltage by double or reinforced insulation.	P
	Method(s) used .....	Method 1 is used.	—

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		<b>P</b>
2.10.1	General	Refer to below	P
2.10.1.1	Frequency .....	Considered.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.1.2	Pollution degrees .....	The equipment is considered located within pollution degree II.	<b>P</b>
2.10.1.3	Reduced values for functional insulation	The functional insulations comply with 5.3.4 a) and c)	<b>P</b>
2.10.1.4	Intervening unconnected conductive parts	Considered.	<b>P</b>
2.10.1.5	Insulation with varying dimensions	No such transformer used.	<b>N/A</b>
2.10.1.6	Special separation requirements	Special separation is not used.	<b>N/A</b>
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit generating starting pulses.	<b>N/A</b>
2.10.2	Determination of working voltage	(See appended table 2.10.2)	<b>P</b>
2.10.2.1	General	Refer below:	<b>P</b>
2.10.2.2	RMS working voltage	(see appended table 2.10.2)	<b>P</b>
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	<b>P</b>
2.10.3	Clearances	Refer to below:	<b>P</b>
2.10.3.1	General	Refer below:	<b>—</b>
2.10.3.2	Mains transient voltages	Refer below:	<b>P</b>
	a) AC mains supply .....	Equipment is Overvoltage Category II.	<b>P</b>
	b) Earthed d.c. mains supplies .....	Not intended for d.c.	<b>N/A</b>
	c) Unearthed d.c. mains supplies .....	Not intended for d.c.	<b>N/A</b>
	d) Battery operation .....	No battery in the equipment.	<b>N/A</b>
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	<b>P</b>
2.10.3.4	Clearances in secondary circuits	Only the functional insulation in secondary circuits complied with clause 5.3.4.	<b>N/A</b>
2.10.3.5	Clearances in circuits having starting pulses	The circuit will not generating starting pulse.	<b>N/A</b>
2.10.3.6	Transients from a.c. mains supply .....	Considered.	<b>P</b>
2.10.3.7	Transients from d.c. mains supply .....	Not connected to d.c mains supply.	<b>N/A</b>
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....	Not connected to telecommunication networks and cable distribution systems.	<b>N/A</b>
2.10.3.9	Measurement of transient voltage levels	See below.	<b>—</b>
	a) Transients from a mains supply	Measurement not relevant.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
	For an a.c. mains supply .....		N/A
	For a d.c. mains supply .....		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General	Considered.	P
2.10.4.2	Material group and comparative tracking index	Material group IIIa or IIIb is assumed to be used	P
	CTI tests..... :	CTI rating for all material of minimum 100.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below.	P
2.10.5.1	General	Considered.	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	Approved optocouplers, see appended table 1.5.1.	P
2.10.5.4	Semiconductor devices	No semiconductor devices.	N/A
2.10.5.5.	Cemented joints	No cemented joints.	N/A
2.10.5.6	Thin sheet material – General	Considered.	P
2.10.5.7	Separable thin sheet material	Refer to appended table 2.10.5	P
	Number of layers (pcs) .....		—
2.10.5.8	Non-separable thin sheet material	Not used.	N/A
2.10.5.9	Thin sheet material – standard test procedure	Refer to sub-clause 2.10.5.10	N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 2.10.5)	P
	Electric strength test	(see appended table 2.10.5)	P
2.10.5.11	Insulation in wound components	Not used.	N/A
2.10.5.12	Wire in wound components	Not used.	N/A
	Working voltage .....	Not used.	N/A
	a) Basic insulation not under stress .....		—
	b) Basic, supplementary, reinforced insulation .....		—
	c) Compliance with Annex U .....		—
	Two wires in contact inside wound component; angle between 45° and 90° .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	<b>N/A</b>
	Electric strength test		—
	Routine test		—
2.10.5.14	Additional insulation in wound components	No additional insulation used.	<b>N/A</b>
	Working voltage .....		—
	- Basic insulation not under stress .....		—
	- Supplementary, reinforced insulation .....		—
2.10.6	Construction of printed boards	Refer below:	<b>P</b>
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	<b>P</b>
2.10.6.2	Coated printed boards	No such parts.	<b>N/A</b>
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	No such parts.	<b>N/A</b>
2.10.6.4	Insulation between conductors on different layers of a printed board	PCB layout does not serve as insulation barrier.	<b>N/A</b>
	Distance through insulation		—
	Number of insulation layers (pcs) .....		—
2.10.7	Component external terminations	No such parts.	<b>N/A</b>
2.10.8	Tests on coated printed boards and coated components	No such parts.	<b>N/A</b>
2.10.8.1	Sample preparation and preliminary inspection		—
2.10.8.2	Thermal conditioning		—
2.10.8.3	Electric strength test		—
2.10.8.4	Abrasion resistance test		—
2.10.9	Thermal cycling		<b>N/A</b>
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Approved optocouplers, see appended table 1.5.1.	<b>P</b>
2.10.11	Tests for semiconductor devices and cemented joints	No such device used.	<b>N/A</b>
2.10.12	Enclosed and sealed parts	Approved optocouplers, see appended table 1.5.1.	<b>P</b>
<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		<b>P</b>
3.1	General		<b>P</b>

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	<b>P</b>
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	<b>P</b>
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	<b>P</b>
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and the working voltage involved.	<b>P</b>
3.1.5	Beads and ceramic insulators	No beads or similar ceramic insulators on conductors.	<b>N/A</b>
3.1.6	Screws for electrical contact pressure	No electric screw connection.	<b>N/A</b>
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	<b>N/A</b>
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	<b>N/A</b>
3.1.9	Termination of conductors	Terminations cannot become displaced so that clearances and creepage distances can be reduced.	<b>P</b>
	10 N pull test	Considered.	<b>P</b>
3.1.10	Sleeving on wiring	Sleeves can only be removed by breaking or cutting.	<b>P</b>

<b>3.2</b>	<b>Connection to a mains supply</b>		<b>P</b>
3.2.1	Means of connection	Refer below:	<b>P</b>
3.2.1.1	Connection to an a.c. mains supply	The equipment is provided with an appliance inlet.	<b>P</b>
3.2.1.2	Connection to a d.c. mains supply	The equipment is not for connection to a d.c. mains supply.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.2	Multiple supply connections	Only one supply connection.	<b>N/A</b>
3.2.3	Permanently connected equipment	The equipment is not intended for permanent connection to the mains.	<b>N/A</b>
	Number of conductors, diameter of cable and conduits (mm) .....		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320-1 and is properly placed to avoid hazards after insertion of the appliance coupler.	<b>P</b>
3.2.5	Power supply cords	Refer below:	—
3.2.5.1	AC power supply cords	Power supply cord has not been check, refer to Summary of Testing.	<b>N/A</b>
	Type .....		—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		—
3.2.5.2	DC power supply cords	The equipment is not for connecting to d.c. mains.	<b>N/A</b>
3.2.6	Cord anchorages and strain relief	Equipment provided with an appliance inlet.	<b>N/A</b>
	Mass of equipment (kg), pull (N) .....		—
	Longitudinal displacement (mm) .....		—
3.2.7	Protection against mechanical damage	No sharp points or cutting edges on the equipment surfaces.	<b>P</b>
3.2.8	Cord guards	The equipment is neither hand-held nor intended to be moved during operation.	<b>N/A</b>
	Diameter or minor dimension D (mm); test mass (g) .....		—
	Radius of curvature of cord (mm) .....		—
3.2.9	Supply wiring space	Equipment provided with an appliance inlet.	<b>P</b>
<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		<b>N/A</b>
3.3.1	Wiring terminals	3.3.1 – 3.3.8; Appliance inlet provided.	<b>N/A</b>



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Clause	Requirement + Test	Result - Remark	Verdict
3.3.2	Connection of non-detachable power supply cords		—
3.3.3	Screw terminals		—
3.3.4	Conductor sizes to be connected		—
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) .....		—
3.3.5	Wiring terminal sizes		—
	Rated current (A), type, nominal thread diameter (mm) .....		—
3.3.6	Wiring terminal design		—
3.3.7	Grouping of wiring terminals		—
3.3.8	Stranded wire		—

<b>3.4</b>	<b>Disconnection from the mains supply</b>		<b>P</b>
3.4.1	General requirement	The appliance coupler will be acting as disconnect device.	<b>P</b>
3.4.2	Disconnect devices	The appliance coupler will be acting as disconnect device.	<b>P</b>
3.4.3	Permanently connected equipment	Not permanently connected equipment.	<b>N/A</b>
3.4.4	Parts which remain energized	No parts remain energized after the disconnect device is pull out.	<b>N/A</b>
3.4.5	Switches in flexible cords	No switch.	<b>N/A</b>
3.4.6	Number of poles - single-phase and d.c. equipment	The disconnect device disconnects both poles simultaneously.	<b>P</b>
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	<b>N/A</b>
3.4.8	Switches as disconnect devices	No switches provided.	<b>N/A</b>
3.4.9	Plugs as disconnect devices	The appliance coupler will be regarded as disconnect device, no warning is required.	<b>N/A</b>
3.4.10	Interconnected equipment	No interconnections using hazardous voltages.	<b>N/A</b>
3.4.11	Multiple power sources	One power source only.	<b>N/A</b>

<b>3.5</b>	<b>Interconnection of equipment</b>		<b>P</b>
3.5.1	General requirements	Considered.	<b>P</b>

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Clause	Requirement + Test	Result - Remark	Verdict
3.5.2	Types of interconnection circuits .....	SELV and limited current circuits.	—
3.5.3	ELV circuits as interconnection circuits	No ELV.	N/A
3.5.4	Data ports for additional equipment	No data ports.	N/A

<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		<b>P</b>
4.1	Stability		N/A
	Angle of 10°	Product mass <7kg.	N/A
	Test force (N) .....		N/A

<b>4.2</b>	<b>Mechanical strength</b>		<b>P</b>
4.2.1	General		P
	Rack-mounted equipment.	Not rack-mounted equipment.	N/A
4.2.2	Steady force test, 10 N	No hazard, ref. comment in appended table 2.10.3 - 2.10.4	P
4.2.3	Steady force test, 30 N	No internal enclosure.	N/A
4.2.4	Steady force test, 250 N	No hazard. The test is performed at all sides of enclosure.	P
4.2.5	Impact test		P
	Fall test	No hazard as result from the steel sphere fall test. (Per client request)	P
	Swing test	No hazard as result from the steel sphere swing test. (Per client request)	P
4.2.6	Drop test; height (mm) .....	No damage after 1m drop.	P
4.2.7	Stress relief test	Test is carried out at 97°C/ 7h. No risk of shrinkage or distortion on enclosures due to release of internal stresses.	P
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N/A
	Picture tube separately certified .....		—
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Not intended to be mounted on a wall or ceiling.	N/A
4.2.11	Rotating solid media	No such parts provided.	N/A
	Test to cover on the door.....:		—

<b>4.3</b>	<b>Design and construction</b>		<b>P</b>
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	<b>P</b>
4.3.2	Handles and manual controls; force (N).....:	No knobs, grips, handles, lever etc.	<b>N/A</b>
4.3.3	Adjustable controls	No hazardous adjustable controls.	<b>N/A</b>
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	<b>P</b>
4.3.5	Connection by plugs and sockets	SELV connectors do not comply with IEC 60320-1 or IEC 60083.	<b>P</b>
4.3.6	Direct plug-in equipment	Not intended to plug directly into a wall socket-outlet.	<b>N/A</b>
	Torque ..... :		—
	Compliance with the relevant mains plug standard ..... :		—
4.3.7	Heating elements in earthed equipment	No heating elements provided.	<b>N/A</b>
4.3.8	Batteries	No batteries in the equipment.	<b>N/A</b>
	- Overcharging of a rechargeable battery		—
	- Unintentional charging of a non-rechargeable battery		—
	- Reverse charging of a rechargeable battery		—
	- Excessive discharging rate for any battery		—
4.3.9	Oil and grease	Insulation is not exposed to oil, grease etc.	<b>N/A</b>
4.3.10	Dust, powders, liquids and gases	The equipment does not contain flammable liquids or gases.	<b>N/A</b>
4.3.11	Containers for liquids or gases	No containers for liquids or gases in the equipment.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.12	Flammable liquids .....	The equipment does not contain flammable liquid.	<b>N/A</b>
	Quantity of liquid (l) .....		—
	Flash point (°C) .....		—
4.3.13	Radiation	Refer below:	<b>P</b>
4.3.13.1	General	Refer below:	—
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	<b>N/A</b>
	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	The equipment does not produce significant UV radiation.	<b>N/A</b>
	Part, property, retention after test, flammability classification .....		—
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....	The equipment does not produce significant UV radiation.	<b>N/A</b>
4.3.13.5	Lasers (including laser diodes) and LEDs	Refer to below.	<b>P</b>
4.3.13.5.1	Lasers (including laser laser diodes)	No lasers.	<b>N/A</b>
	Laser class .....		—
4.3.13.5.2	Light emitting diodes (LEDs)	LED is diffusive type.	<b>P</b>
4.3.13.6	Other types .....	The equipment does not generate other types of radiation.	<b>N/A</b>

<b>4.4</b>	<b>Protection against hazardous moving parts</b>		<b>N/A</b>
4.4.1	General	4.4.1 – 4.4.5: No moving parts.	<b>N/A</b>
4.4.2	Protection in operator access areas .....		—
	Household and home/office document/media shredders		—
4.4.3	Protection in restricted access locations .....		—
4.4.4	Protection in service access areas		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.5	Protection against moving fan blades		—
4.4.5.1	General		—
	Not considered to cause pain or injury. a).....:		—
	Is considered to cause pain, not injury. b) .....		—
	Considered to cause injury. c) .....		—
4.4.5.2	Protection for users		—
	Use of symbol or warning .....		—
4.4.5.3	Protection for service persons		—
	Use of symbol or warning .....		—

<b>4.5</b>	<b>Thermal requirements</b>		<b>P</b>
4.5.1	General	Considered.	<b>P</b>
4.5.2	Temperature tests	(see appended table 4.5)	<b>P</b>
	Normal load condition per Annex L .....	Rated load with continuous operation.	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	<b>P</b>
4.5.4	Touch temperature limits	(see appended table 4.5)	<b>P</b>
4.5.5	Resistance to abnormal heat .....	No thermoplastic parts carrying hazardous voltages.	<b>N/A</b>

<b>4.6</b>	<b>Openings in enclosures</b>		<b>P</b>
4.6.1	Top and side openings	Transportable equipment.	<b>N/A</b>
	Dimensions (mm) .....		<b>N/A</b>
4.6.2	Bottoms of fire enclosures	Transportable equipment.	<b>N/A</b>
	Construction of the bottom, dimensions (mm) ...:		—
4.6.3	Doors or covers in fire enclosures	No doors or covers in the enclosure.	<b>N/A</b>
4.6.4	Openings in transportable equipment	No openings.	<b>N/A</b>
4.6.4.1	Constructional design measures		<b>N/A</b>
	Dimensions (mm) .....		—
4.6.4.2	Evaluation measures for larger openings		<b>N/A</b>
4.6.4.3	Use of metallized parts		<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure.	<b>N/A</b>
	Conditioning temperature (°C), time (weeks) ..... :		—

<b>4.7</b>	<b>Resistance to fire</b>		<b>P</b>
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	<b>P</b>
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	<b>P</b>
	Method 2, application of all of simulated fault condition tests	Not used method 2.	<b>N/A</b>
4.7.2	Conditions for a fire enclosure	Refer below:	—
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	<b>P</b>
4.7.2.2	Parts not requiring a fire enclosure	The fire enclosure is required to cover all parts.	<b>N/A</b>
4.7.3	Materials	Refer below:	<b>P</b>
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	<b>P</b>
4.7.3.2	Materials for fire enclosures	The fire enclosure is minimum V-0 material.	<b>P</b>
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	<b>N/A</b>
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside the fire enclosure are minimum V-2 material.	<b>P</b>
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	<b>N/A</b>
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	<b>N/A</b>

<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		<b>P</b>
5.1	<b>Touch current and protective conductor current</b>		<b>P</b>
5.1.1	General	Test conducted in accordance with 5.1.2 to 5.1.7.	<b>P</b>
5.1.2	Configuration of equipment under test (EUT)	Refer below:	—
5.1.2.1	Single connection to an a.c. mains supply	No interconnection of equipment.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple power source.	<b>N/A</b>
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple power source.	<b>N/A</b>
5.1.3	Test circuit	Tested for connection to IT power distribution system (also relevant for TN or TT power distribution system).	<b>P</b>
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	—
5.1.5	Test procedure	Considered.	—
5.1.6	Test measurements	Measuring instrument D1 is used.	—
	Supply voltage (V) .....	264V	—
	Measured touch current (mA) .....	(See appended table 5.1)	<b>P</b>
	Max. allowed touch current (mA) .....	0.25	—
	Measured protective conductor current (mA) .....		—
	Max. allowed protective conductor current (mA) ..		—
5.1.7	Equipment with touch current exceeding 3,5 mA	The touch current does not exceed 3.5mA.	<b>N/A</b>
5.1.7.1	General .....		—
5.1.7.2	Simultaneous multiple connections to the supply		—
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to a telecommunication network nor cable distribution systems.	<b>N/A</b>
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		—
	Supply voltage (V) .....		—
	Measured touch current (mA) .....		—
	Max. allowed touch current (mA) .....		—
5.1.8.2	Summation of touch currents from telecommunication networks	Not connected to a telecommunication network.	<b>N/A</b>
	a) EUT with earthed telecommunication ports .....		—
	b) EUT whose telecommunication ports have no reference to protective earth		—

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Clause	Requirement + Test	Result - Remark	Verdict
<b>5.2</b>	<b>Electric strength</b>		<b>P</b>
5.2.1	General	(see appended table 5.2)	<b>P</b>
5.2.2	Test procedure	(see appended table 5.2)	<b>P</b>

<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		<b>P</b>
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	<b>P</b>
5.3.2	Motors	There are no motors in the equipment.	<b>N/A</b>
5.3.3	Transformers	See appended Annex C.	<b>P</b>
5.3.4	Functional insulation .....	Complies with a) and c).	<b>P</b>
5.3.5	Electromechanical components	No electromechanical components in secondary circuits.	<b>N/A</b>
5.3.6	Audio amplifiers in ITE .....	No audio amplifiers inside equipment.	<b>N/A</b>
5.3.7	Simulation of faults	See the enclosed fault condition tests.	<b>P</b>
5.3.8	Unattended equipment	No thermostats, temperature limiters or thermal cut-outs	<b>N/A</b>
5.3.9	Compliance criteria for abnormal operating and fault conditions	Refer below:	<b>P</b>
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests.	<b>P</b>
5.3.9.2	After the tests	No reduction of clearance and creepage distances. Electric strength test is made on reinforced insulation.	<b>P</b>

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		<b>N/A</b>
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		<b>N/A</b>
6.1.1	Protection from hazardous voltages	No TNV circuits.	<b>N/A</b>
6.1.2	Separation of the telecommunication network from earth		<b>N/A</b>
6.1.2.1	Requirements		<b>N/A</b>
	Supply voltage (V) .....		—



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Clause	Requirement + Test	Result - Remark	Verdict
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....	No TNV circuits.	N/A

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		<b>N/A</b>
6.2.1	Separation requirements	6.2.1-6.2.2.3: No TNV circuits.	<b>N/A</b>
6.2.2	Electric strength test procedure		—
6.2.2.1	Impulse test		—
6.2.2.2	Steady-state test		—
6.2.2.3	Compliance criteria		—

<b>6.3</b>	<b>Protection of the telecommunication wiring system from overheating</b>		<b>N/A</b>
	Max. output current (A) .....	No TNV circuits.	<b>N/A</b>
	Current limiting method .....		—

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		<b>N/A</b>
7.1	General	7.1-7.4.3: Not connected to cable distribution systems.	<b>N/A</b>
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		<b>N/A</b>
7.3	Protection of equipment users from overvoltages on the cable distribution system		<b>N/A</b>
7.4	Insulation between primary circuits and cable distribution systems		<b>N/A</b>
7.4.1	General		<b>N/A</b>
7.4.2	Voltage surge test		<b>N/A</b>
7.4.3	Impulse test		<b>N/A</b>

<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N/A</b>
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)	Product mass <18kg	<b>N/A</b>
A.1.1	Samples .....		—
	Wall thickness (mm) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
A.1.2	Conditioning of samples; temperature (°C) .....		
A.1.3	Mounting of samples .....		
A.1.4	Test flame (see IEC 60695-11-3)		
	Flame A, B, C or D .....		—
A.1.5	Test procedure		
A.1.6	Compliance criteria		
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—
A.2	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)		N/A
A.2.1	Samples, material .....	All materials have suitable flame class, no testing required.	N/A
	Wall thickness (mm) .....		—
A.2.2	Conditioning of samples; temperature (°C) .....		N/A
A.2.3	Mounting of samples .....		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C .....		—
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 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s) .....		—
	Sample 2 burning time (s) .....		—
	Sample 3 burning time (s) .....		—
A.3	Hot flaming oil test (see 4.6.2)	Not applicable.	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</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		<b>N/A</b>
B.1	General requirements	No motor in the equipment.	<b>N/A</b>
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		<b>N/A</b>
B.3	Maximum temperatures		<b>N/A</b>
B.4	Running overload test		<b>N/A</b>
B.5	Locked-rotor overload test		<b>N/A</b>
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		<b>N/A</b>
B.6.1	General		<b>N/A</b>
B.6.2	Test procedure		<b>N/A</b>
B.6.3	Alternative test procedure		<b>N/A</b>
B.6.4	Electric strength test; test voltage (V) .....		<b>N/A</b>
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		<b>N/A</b>
B.7.1	General		<b>N/A</b>
B.7.2	Test procedure		<b>N/A</b>
B.7.3	Alternative test procedure		<b>N/A</b>
B.7.4	Electric strength test; test voltage (V) .....		<b>N/A</b>
B.8	Test for motors with capacitors		<b>N/A</b>
B.9	Test for three-phase motors		<b>N/A</b>
B.10	Test for series motors		<b>N/A</b>
	Operating voltage (V) .....		—
<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		<b>P</b>
	Position .....	Primary to SELV.	—
	Manufacturer .....	(see appended table 1.5.1)	—
	Type .....	(see appended table 1.5.1)	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated values .....	(see appended table 1.5.1)	—
	Method of protection .....	Inherent impedance.	—
C.1	Overload test	(see appended table 5.3)	P
C.2	Insulation	The reinforced insulation fulfill the requirement in Sub-clause 2.10 and relevant tests of Sub-clause 5.2.2	P
	Protection from displacement of windings.....	Secured by tubing and insulation tape. (see appended table C.2)	P

<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)</b>		<b>P</b>
D.1	Measuring instrument	Considered.	P
D.2	Alternative measuring instrument	Measuring instrument D1 is used.	N/A

<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		<b>N/A</b>
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<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		<b>P</b>
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<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		<b>N/A</b>
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	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	Earthed d.c. mains supplies .....		N/A
G.2.3	Unearthed d.c. mains supplies .....		N/A
G.2.4	Battery operation .....		N/A
G.3	Determination of telecommunication network transient voltage (V) .....		N/A
G.4	Determination of required withstand voltage (V)		N/A

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<b>Clause</b>	<b>Requirement + Test</b>	<b>Result - Remark</b>	<b>Verdict</b>
G.4.1	Mains transients and internal repetitive peaks .... :		<b>N/A</b>
G.4.2	Transients from telecommunication networks ..... :		<b>N/A</b>
G.4.3	Combination of transients		<b>N/A</b>
G.4.4	Transients from cable distribution systems		<b>N/A</b>
G.5	Measurement of transient voltages (V)		<b>N/A</b>
	a) Transients from a mains supply		<b>N/A</b>
	For an a.c. mains supply		<b>N/A</b>
	For a d.c. mains supply		<b>N/A</b>
	b) Transients from a telecommunication network		<b>N/A</b>
G.6	Determination of minimum clearances ..... :		<b>N/A</b>
<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		<b>N/A</b>
<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		<b>N/A</b>
	Metal(s) used ..... :		—
<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>		<b>N/A</b>
K.1	Making and breaking capacity		<b>N/A</b>
K.2	Thermostat reliability; operating voltage (V) ..... :		<b>N/A</b>
K.3	Thermostat endurance test; operating voltage (V) ..... :		<b>N/A</b>
K.4	Temperature limiter endurance; operating voltage (V) ..... :		<b>N/A</b>
K.5	Thermal cut-out reliability		<b>N/A</b>
K.6	Stability of operation		<b>N/A</b>
<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>		<b>N/A</b>
L.1	Typewriters		<b>N/A</b>
L.2	Adding machines and cash registers		<b>N/A</b>
L.3	Erasers		<b>N/A</b>
L.4	Pencil sharpeners		<b>N/A</b>
L.5	Duplicators and copy machines		<b>N/A</b>
L.6	Motor-operated files		<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
L.7	Other business equipment		N/A
<b>M</b>	<b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b>		<b>N/A</b>
M.1	Introduction	No telephone ringing signal.	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
<b>N</b>	<b>ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)</b>		<b>N/A</b>
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		<b>—</b>
<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		<b>N/A</b>
	a) Preferred climatic categories .....		N/A
	b) Maximum continuous voltage .....		N/A
	c) Pulse current .....		N/A

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<b>IEC 60950-1</b>			
Clause	Requirement + Test	Result - Remark	Verdict
<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		<b>N/A</b>
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)	The quality control programmes are not used.	<b>N/A</b>
R.2	Reduced clearances (see 2.10.3)		<b>N/A</b>
<b>S</b>	<b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>		<b>N/A</b>
S.1	Test equipment	The impulse testing is not used.	<b>N/A</b>
S.2	Test procedure		<b>N/A</b>
S.3	Examples of waveforms during impulse testing		<b>N/A</b>
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		<b>N/A</b>
			—
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.12)</b>		<b>N/A</b>
			—
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>		<b>P</b>
V.1	Introduction	See below.	<b>P</b>
V.2	TN power distribution systems	See Sub-clause 1.6.1.	<b>P</b>
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		<b>N/A</b>
W.1	Touch current from electronic circuits		<b>N/A</b>
W.1.1	Floating circuits		<b>N/A</b>
W.1.2	Earthed circuits		<b>N/A</b>
W.2	Interconnection of several equipments		<b>N/A</b>
W.2.1	Isolation		<b>N/A</b>
W.2.2	Common return, isolated from earth		<b>N/A</b>
W.2.3	Common return, connected to protective earth		<b>N/A</b>

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<b>IEC 60950-1</b>			
<b>Clause</b>	<b>Requirement + Test</b>	<b>Result - Remark</b>	<b>Verdict</b>
<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)</b>		<b>P</b>
X.1	Determination of maximum input current	See Annex C.1	<b>P</b>
X.2	Overload test procedure	Electronic protection mode is used.	<b>P</b>
<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		<b>N/A</b>
Y.1	Test apparatus .....	No ultraviolet light.	<b>N/A</b>
Y.2	Mounting of test samples .....		<b>N/A</b>
Y.3	Carbon-arc light-exposure apparatus .....		<b>N/A</b>
Y.4	Xenon-arc light exposure apparatus .....		<b>N/A</b>
<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		<b>N/A</b>
<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		<b>N/A</b>
<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		—
<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		<b>N/A</b>
CC.1	General	No such components used.	<b>N/A</b>
CC.2	Test program 1.....		<b>N/A</b>
CC.3	Test program 2.....		<b>N/A</b>
<b>DD</b>	<b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b>		<b>N/A</b>
DD.1	General	Not a rack-mounted equipment.	<b>N/A</b>
DD.2	Mechanical strength test, variable N.....		<b>N/A</b>
DD.3	Mechanical strength test, 250N, including end stops.....		<b>N/A</b>
DD.4	Compliance.....		<b>N/A</b>
<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>		<b>N/A</b>



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<b>IEC 60950-1</b>			
Clause	Requirement + Test	Result - Remark	Verdict
EE.1	General	Not household and home/office document/media shredders	<b>N/A</b>
EE.2	Markings and instructions		<b>N/A</b>
	Use of markings or symbols.....:		<b>N/A</b>
	Information of user instructions, maintenance and/or servicing instructions.....:		<b>N/A</b>
EE.3	Inadvertent reactivation test.....:		<b>N/A</b>
EE.4	Disconnection of power to hazardous moving parts:		<b>N/A</b>
	Use of markings or symbols.....:		<b>N/A</b>
EE.5	Protection against hazardous moving parts		<b>N/A</b>
	Test with test finger (Figure 2A) .....:		<b>N/A</b>
	Test with wedge probe (Figure EE1 and EE2) .....:		<b>N/A</b>

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1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>	
Plastic enclosure	Sabic Innovative Plastics B V	940, 945 (GG)	V-0, min. 1.5mm thick, min. 120°C	UL 94	UL UL	
Appliance inlet (CN101)	Supercom Solteam Supercom	SC-8R ST-01 SC-14	10A, 250V, 70°C 10A, 250V, 70°C 2.5A, 250V, 70°C	IEC 60320-1, UL 498	VDE, UL VDE, UL VDE, UL	
PCB	Various	Various	V-0, min. 105°C	UL 796	UL	
Fuse (F101)	Conquer	PTU, PTP	T2A, 250V	IEC 60127 UL 248-14,	VDE, UL VDE, UL	
Thermsitor (R101) (Optional)	Various	Various	Min. 3A, 5Ω at 25 °C		Tested in the equip.	
Line choke (L101) 1) No bobbin (Optional)	Send Power Newline	R55MH6-451B R55MH6-451B	130°C 130°C		Tested in the equip.	
X-capacitor (C102) (Optional)	Cheng Tung Chiefcon Iskra Okaya	CTX CKX KNB1560 RE	Max. 0.33μF, min. 250V, 100°C min.	IEC60384-14 2 ed., include 21 days damp heat test, U1414	FI, UL FI, UL FI, UL FI, UL	
Bleeder resistors (R102, R103)	Various	Various	Max. 1MΩ, 1/4W, (Located after fuse, two in series)		Tested in the equip.	
Bridge capacitors (C108, C109, C115) (Optional)	TDK Welson Pan Overseas	CD WD AH	Max 1000pF, min. 250Vac, min., 125°C, Y1 type	IEC60384-14 2 ed., UL1414	VDE, FI, UL VDE, FI, UL VDE, FI, UL	
Line Choke (L102) No bobbin (Optional) 1)	Send Power Newline	R55MR6-153B R55MR6-153B	130°C		Tested in the equip.	
Bridge diode (BD101)	Various	Various	Min. 2A, 600V min.		Tested in the equip.	
Ripple capacitor (C104)	Various	Various	100uF, 400V min., 105°C		Tested in the equip.	
MOSFET (Q101)	Various	Various	Min. 4A, 600V min.		Tested in the equip.	
Current resistors (R125)	Various	Various	Min. 0.18Ω, 2W		Tested in the equip.	

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity <sup>1)</sup>
Optocoupler (U102)	Sharp Lite-On Everlight NEC Fairchild	PC123 LTV-817 EL817 PS2561 H11A817X	See appended opto electronic devices, isolating voltage min. 3000Vac, min. 100°C	IEC60950-1	FI FI FI FI FI
Mylar Sheet	Various	Various	V-2 or better, min 0.4 mm thick.	UL94	UL
Silicon Rubber (used on Q101)	Various	Various	V-2 or better, min 0.4 mm thick.	UL94	UL
Current sense resistor (R104) <b>8)</b>	Various	Various	8.2MΩ, 1/4W		Tested in the equip.
Current sense resistor (R104) <b>9)</b>	Various	Various	10MΩ, 1/4W		Tested in the equip.
Current sense resistor (R104) <b>10)</b>	Various	Various	1.0MΩ, 1/4W		Tested in the equip.
For models KTPS36-0940DT 3P and KTPS45-0950DT 3P					
Transformer (T101) <b>2)</b>	Newline Send Power Tai Chang	R53S10-1410 R53S10-1410 R53S10-1410	Class B	IEC60950-1 and evaluated acco. to IEC60085	Ref. Annex C
For models KTPS40-1233DT 3P and KTPS50-1242DT 3P					
Transformer (T101) <b>3)</b>	Newline Send Power Tai Chang	R53S10-1420 R53S10-1420 R53S10-1420	Class B	IEC60950-1 and evaluated acco. to IEC60085	Ref. Annex C
For model KTPS50-1533DT 3P					
Alt. transformer (T101) <b>4)</b>	Newline Send Power Tai Chang	R53S10-1430 R53S10-1430 R53S10-1430	Class B	IEC60950-1 and evaluated acco. to IEC60085	Ref. Annex C
For models KTPS50-1827DT 3P, KTPS50-1926DT 3P and KTPS50-2025DT 3P					
Alt. transformer (T101) <b>5)</b>	Newline Send Power Tai Chang	R53S10-1440 R53S10-1440 R53S10-1440	Class B	IEC60950-1 and evaluated acco. to IEC60085	Ref. Annex C

For model KTPS50-2421DT 3P					
Alt. transformer (T101) <b>6)</b>	Newline Send Power Tai Chang	R53S10-1450 R53S10-1450 R53S10-1450	Class B	IEC60950-1 and evaluated acco. to IEC60085	Ref. Annex C
For model KTPS50-4810DT 3P					
Transformer (T101) <b>7)</b>	Newline Send Power Tai Chang	R53S10-1460 R53S10-1460 R53S10-1460	Class B	IEC60950-1 and evaluated acco. to IEC60085	Ref. Annex C
Supplementary information:					
<sup>1)</sup> Provided evidence ensures the agreed level of compliance.					
<b>1)</b> All sources construction is identical to each one except manufacturer and material. <b>2)</b> All sources are identical except manufacturer, type and material list. For insulation materials, refer to attachment transformer specification. <b>3)</b> All sources are identical except manufacturer, type and material list. For insulation materials, refer to attachment transformer specification. <b>4)</b> All sources are identical except manufacturer, type and material list. For insulation materials, refer to attachment transformer specification. <b>5)</b> All sources are identical except manufacturer, type and material list. For insulation materials, refer to attachment transformer specification. <b>6)</b> All sources are identical except manufacturer, type and material list. For insulation materials, refer to attachment transformer specification. <b>7)</b> All sources are identical except manufacturer, type and material list. For insulation materials, refer to attachment transformer specification. <b>8)</b> For models KTPS36-0940DT 3P and KTPS45-0950DT 3P <b>9)</b> For model KTPS50-4810DT 3P <b>10)</b> For all models except KTPS36-0940DT 3P, KTPS45-0950DT 3P and KTPS50-4810DT 3P					

1.5.1	TABLE: Opto Electronic Devices	P
Manufacturer .....	Sharp / Lite- On / Everlight / NEC / Fairchild	
Type.....	PC123 / LTV-817 / EL817 / PS2561 / H11A817X	
Separately tested .....	Tested by FIMKO	
Bridging insulation .....	Reinforced insulation	
External creepage distance.....	8 / 8 / 7.7 / >7 / >7 mm	
Internal creepage distance.....	>5 / >4 / 6.0 / >4 / - *) mm	
Distance through insulation.....	0.7 / >0.4 / 0.5 / >0.4 / >1 mm	
Tested under the following conditions.....	R, S, B	
Input.....		
Output.....		
supplementary information		
-*) There is not any internal creepage distance. Test according to IEC60950-1:2001, cl. 2.10.8 (same as requirement in IEC60950-1:2005; am1, cl. 2.10.9) has been carried out ten times for the components at 100°C/25°C/0°C/25°C. Humidity treatment of 48 h as well as electric strength tests at 3000 V/1 minute and 5000 V/1 minute were carried out to the component after thermal cycling test.		

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1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (mA)	Irated (A)	P (W)	Fuse #	Ifuse (mA)	Condition/status	
For model KTPS45-0950DT 3P							
90, 47Hz	1046		55.4	F101	1046	Normal load	
90, 63Hz	1081		55.5	F101	1081	Normal load	
100, 47Hz	949	1.1	54.9	F101	949	Normal load	
100, 63Hz	990	1.1	55.0	F101	990	Normal load	
240, 47Hz	489	1.1	53.7	F101	489	Normal load	
240, 63Hz	489	1.1	53.5	F101	489	Normal load	
264, 47Hz	451		53.6	F101	451	Normal load	
264, 63Hz	444		53.4	F101	444	Normal load	
For model KTPS45-0950DT 3P (for alternate dimension of heatsink)							
90, 47Hz	1040		53.5	F101	1040	Normal load	
90, 63Hz	1090		53.5	F101	1090	Normal load	
100, 47Hz	950	1.1	53.2	F101	950	Normal load	
100, 63Hz	1010	1.1	53.2	F101	1010	Normal load	
240, 47Hz	530	1.1	52.6	F101	530	Normal load	
240, 63Hz	530	1.1	52.6	F101	530	Normal load	
264, 47Hz	500		52.5	F101	500	Normal load	
264, 63Hz	500		52.5	F101	500	Normal load	
For model KTPS50-1242DT 3P							
90, 47Hz	1183		63.6	F101	1183	Normal load	
90, 63Hz	1228		63.8	F101	1228	Normal load	
100, 47Hz	1078	1.1	63.0	F101	1078	Normal load	
100, 63Hz	1123	1.1	63.0	F101	1123	Normal load	
240, 47Hz	555	1.1	60.3	F101	555	Normal load	
240, 63Hz	550	1.1	60.3	F101	550	Normal load	
264, 47Hz	514		60.3	F101	514	Normal load	
264, 63Hz	510		60.3	F101	510	Normal load	

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U (V)	I (mA)	I <sub>rated</sub> (A)	P (W)	Fuse #	I <sub>fuse</sub> (mA)	Condition/status
For model KTPS50-1242DT 3P (for alternate dimension of heatsink)						
90, 47Hz	1210		63.8	F101	1210	Normal load
90, 63Hz	1230		63.8	F101	1230	Normal load
100, 47Hz	1090	1.1	63.2	F101	1090	Normal load
100, 63Hz	1140	1.1	63.2	F101	1140	Normal load
240, 47Hz	580	1.1	60.5	F101	580	Normal load
240, 63Hz	580	1.1	60.5	F101	580	Normal load
264, 47Hz	520		60.4	F101	520	Normal load
264, 63Hz	520		60.4	F101	520	Normal load
For model KTPS50-1533DT 3P						
90, 47Hz	1107		58.7	F101	1107	Normal load
90, 63Hz	1146		59.0	F101	1146	Normal load
100, 47Hz	1009	1.1	58.1	F101	1009	Normal load
100, 63Hz	1055	1.1	58.3	F101	1055	Normal load
240, 47Hz	540	1.1	56.8	F101	540	Normal load
240, 63Hz	527	1.1	56.7	F101	527	Normal load
264, 47Hz	496		56.8	F101	496	Normal load
264, 63Hz	491		56.7	F101	491	Normal load
For model KTPS50-1533DT 3P (for alternate dimension of heatsink)						
90, 47Hz	1110		59.0	F101	1110	Normal load
90, 63Hz	1150		58.3	F101	1150	Normal load
100, 47Hz	1010	1.1	58.3	F101	1010	Normal load
100, 63Hz	1060	1.1	56.7	F101	1060	Normal load
240, 47Hz	540	1.1	56.8	F101	540	Normal load
240, 63Hz	540	1.1	56.8	F101	540	Normal load
264, 47Hz	500		56.7	F101	500	Normal load
264, 63Hz	500		56.7	F101	500	Normal load

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U (V)	I (mA)	Irated (A)	P (W)	Fuse #	Ifuse (mA)	Condition/status
For model KTPS50-1827DT 3P						
90, 47Hz	1079		57.1	F101	1079	Normal load
90, 63Hz	1118		57.1	F101	1118	Normal load
100, 47Hz	981	1.1	56.7	F101	981	Normal load
100, 63Hz	1028	1.1	56.7	F101	1028	Normal load
240, 47Hz	515	1.1	55.6	F101	515	Normal load
240, 63Hz	511	1.1	55.7	F101	511	Normal load
264, 47Hz	478		55.9	F101	478	Normal load
264, 63Hz	475		55.7	F101	475	Normal load
For model KTPS50-1827DT 3P (for alternate dimension of heatsink)						
90, 47Hz	1080		57.1	F101	1080	Normal load
90, 63Hz	1120		57.1	F101	1120	Normal load
100, 47Hz	0990	1.1	56.6	F101	0990	Normal load
100, 63Hz	1030	1.1	56.6	F101	1030	Normal load
240, 47Hz	520	1.1	55.7	F101	520	Normal load
240, 63Hz	520	1.1	55.7	F101	520	Normal load
264, 47Hz	480		55.6	F101	480	Normal load
264, 63Hz	480		55.6	F101	480	Normal load
For model KTPS50-2025DT 3P						
90, 47Hz	1128		60.0	F101	1128	Normal load
90, 63Hz	1166		60.0	F101	1166	Normal load
100, 47Hz	1024	1.1	59.5	F101	1024	Normal load
100, 63Hz	1071	1.1	59.6	F101	1071	Normal load
240, 47Hz	535	1.1	58.3	F101	535	Normal load
240, 63Hz	533	1.1	58.3	F101	533	Normal load
264, 47Hz	500		58.8	F101	500	Normal load
264, 63Hz	497		58.7	F101	497	Normal load



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U (V)	I (mA)	Irated (A)	P (W)	Fuse #	Ifuse (mA)	Condition/status
For model KTPS50-2025DT 3P (for alternate dimension of heatsink)						
90, 47Hz	1130		59.1	F101	1130	Normal load
90, 63Hz	1170		59.1	F101	1170	Normal load
100, 47Hz	1020	1.1	58.6	F101	1020	Normal load
100, 63Hz	1070	1.1	58.6	F101	1070	Normal load
240, 47Hz	540	1.1	57.4	F101	540	Normal load
240, 63Hz	540	1.1	57.4	F101	540	Normal load
264, 47Hz	500		57.3	F101	500	Normal load
264, 63Hz	500		57.3	F101	500	Normal load
For model KTPS50-2421DT 3P						
90, 47Hz	1086		57.8	F101	1086	Normal load
90, 63Hz	1126		57.8	F101	1126	Normal load
100, 47Hz	995	1.1	57.1	F101	995	Normal load
100, 63Hz	1039	1.1	57.1	F101	1039	Normal load
240, 47Hz	523	1.1	56.2	F101	523	Normal load
240, 63Hz	520	1.1	56.0	F101	520	Normal load
264, 47Hz	490		56.1	F101	490	Normal load
264, 63Hz	486		56.3	F101	486	Normal load
For model KTPS50-2421DT 3P (for alternate dimension of heatsink)						
90, 47Hz	1090		56.7	F101	1090	Normal load
90, 63Hz	1130		56.7	F101	1130	Normal load
100, 47Hz	0990	1.1	56.2	F101	0990	Normal load
100, 63Hz	1030	1.1	56.2	F101	1030	Normal load
240, 47Hz	520	1.1	55.8	F101	520	Normal load
240, 63Hz	520	1.1	55.8	F101	520	Normal load
264, 47Hz	480		55.7	F101	480	Normal load
264, 63Hz	480		55.7	F101	480	Normal load

U (V)	I (mA)	Irated (A)	P (W)	Fuse #	Ifuse (mA)	Condition/status
For model KTPS50-4810DT 3P						
90, 47Hz	1029		54.6	F101	1029	Normal load
90, 63Hz	1068		54.7	F101	1068	Normal load
100, 47Hz	945	1.1	54.1	F101	945	Normal load
100, 63Hz	984	1.1	54.2	F101	984	Normal load
240, 47Hz	496	1.1	53.1	F101	496	Normal load
240, 63Hz	486	1.1	53.0	F101	486	Normal load
264, 47Hz	445		53.3	F101	445	Normal load
264, 63Hz	443		53.2	F101	443	Normal load
For model KTPS50-4810DT 3P (for alternate dimension of heatsink)						
90, 47Hz	1040		55.3	F101	1040	Normal load
90, 63Hz	1070		55.3	F101	1070	Normal load
100, 47Hz	960	1.1	54.6	F101	960	Normal load
100, 63Hz	990	1.1	54.6	F101	990	Normal load
240, 47Hz	510	1.1	53.8	F101	510	Normal load
240, 63Hz	510	1.1	53.8	F101	510	Normal load
264, 47Hz	470		53.7	F101	470	Normal load
264, 63Hz	470		53.7	F101	470	Normal load
Supplementary information:						
The steady state input current did not exceed the rated current at the rated voltage by more than 10 percent under maximum normal load.						

2.1.1.5 c) 1) TABLE: max. V, A, VA test					P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
For model KTPS45-0950DT 3P					
9	5.0	9.1	5.3	44.6	
For model KTPS50-1242DT 3P					
12	4.2	12.3	4.75	55.6	
For model KTPS50-4810DT 3P					
48	1.0	48.4	1.24	57.4	
supplementary information:					
The above measurements are the maximum values (max. V and max. A not obtained at the same time).					

2.1.1.5 c) 2) TABLE: stored energy			N/A
Capacitance C ( $\mu$ F)	Voltage U (V)	Energy E (J)	
supplementary information:			

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		
For model KTPS45-0950DT 3P				
T101 Pin 7, 8 – 11, 12	44.4			
After C116	36.0		C116	
After D107		9.1	D107	
For model KTPS50-1242DT 3P				
T101 Pin 7, 8 – 11, 12	63.2			
After C116	50.1			
After R107		12.1	R107	
After D107		12.1	D107	
For model KTPS50-4810DT 3P				
T101 Pin 7, 8 – 11, 12	238.2			
After C116	82.4			
After R107		48.2	R107	
After D107		48.2	D107	
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
For model KTPS45-0950DT 3P				
C116, s-c	O/P=9Vdc			
D107, s-c	9V O/P=0V (unit shut down)			
For model KTPS50-1242DT 3P				
R107, s-c	O/P=12Vdc			
D107, s-c	12V O/P=0V (unit shut down)			
For model KTPS50-4810DT 3P				
R107, s-c	O/P=48Vdc			
D107, s-c	48V O/P=0V (unit shut down)			
supplementary information:				
s-c=short circuit				

2.5		TABLE: limited power sources			P
Circuit output tested:					
Measured Uoc (V) with all load circuits disconnected:					
		I <sub>sc</sub> (A)		VA	
		Meas.	Limit	Meas.	Limit
For model KTPS45-0950DT 3P					
Uoc = 9.1 V (Normal condition)(with table 2B)		5.3	8.0	44.6	100
U102 (3-4), s-c (With table 2B)	1)	0	8.0	0	100
U102 (1-2), s-c (With table 2B)	1)	0	8.0	0	100
U102 (1), o-c (With table 2B)	1)	0	8.0	0	100
U102 (3), o-c (With table 2B)	1)	0	8.0	0	100
R151, s-c (With table 2B)	1)	0	8.0	0	100
R146, s-c (With table 2B)	1)	0	8.0	0	100
U101(4), o-c (With table 2B)	1)	0	8.0	0	100
R115, s-c (With table 2B)	1)	0	8.0	0	100
R148, s-c (With table 2B)		5.15	8.0	43.7	100
R125, s-c (With table 2B)		5.25	8.0	44.5	100
R156, o-c (With table 2B)		5.15	8.0	43.7	100
For model KTPS50-1242DT 3P					
Uoc =12.3 V (Normal condition)(with table 2B)		4.75	8.0	55.6	100
U102 (3-4), s-c (With table 2B)	1)	0	8.0	0	100
U102 (1-2), s-c (With table 2B)	1)	0	8.0	0	100
U102 (1), o-c (With table 2B)	1)	0	8.0	0	100
U102 (3), o-c (With table 2B)	1)	0	8.0	0	100
R151, s-c (With table 2B)	1)	0	8.0	0	100
R146, s-c (With table 2B)	1)	0	8.0	0	100
U101(4), o-c (With table 2B)	1)	0	8.0	0	100
R115, s-c (With table 2B)		4.68	8.0	54.9	100
R148, s-c (With table 2B)		4.80	8.0	56.2	100
R156, o-c (With table 2B)		4.80	8.0	56.1	100

	$I_{sc}$ (A)		VA	
	Meas.	Limit	Meas.	Limit
For model KTPS50-1533DT 3P				
Uoc =15.2 V (Normal condition)(with table 2B)	4.85	8.0	70.7	100
U102 (3-4), s-c (With table 2B) <b>1)</b>	0	8.0	0	100
U102 (1-2), s-c (With table 2B) <b>1)</b>	0	8.0	0	100
U102 (1), o-c (With table 2B) <b>1)</b>	0	8.0	0	100
U102 (3), o-c (With table 2B) <b>1)</b>	0	8.0	0	100
R151, s-c (With table 2B) <b>1)</b>	0	8.0	0	100
R146, s-c (With table 2B) <b>1)</b>	0	8.0	0	100
U101(4), o-c (With table 2B) <b>1)</b>	0	8.0	0	100
R115, s-c (With table 2B)	4.88	8.0	71.4	100
R148, s-c (With table 2B)	4.89	8.0	71.6	100
R156, o-c (With table 2B)	4.89	8.0	71.5	100
For model KTPS50-1827DT 3P				
Uoc =18.2 V (Normal condition)(with table 2B)	3.65	8.0	64.9	100
U102 (3-4), s-c (With table 2B) <b>1)</b>	0	8.0	0	100
U102 (1-2), s-c (With table 2B) <b>1)</b>	0	8.0	0	100
U102 (1), o-c (With table 2B) <b>1)</b>	0	8.0	0	100
U102 (3), o-c (With table 2B) <b>1)</b>	0	8.0	0	100
R151, s-c (With table 2B) <b>1)</b>	0	8.0	0	100
R146, s-c (With table 2B) <b>1)</b>	0	8.0	0	100
U101(4), o-c (With table 2B) <b>1)</b>	0	8.0	0	100
R115, s-c (With table 2B)	3.76	8.0	66.8	100
R148, s-c (With table 2B)	3.75	8.0	66.6	100
R156, o-c (With table 2B)	3.76	8.0	66.6	100

	I <sub>sc</sub> (A)		VA	
	Meas.	Limit	Meas.	Limit
For model KTPS50-2025DT 3P				
Uoc =20.5 V (Normal condition)(with table 2B)	3.2	8.0	64.5	100
U102 (3-4), s-c (With table 2B) 1)	0	8.0	0	100
U102 (1-2), s-c (With table 2B) 1)	0	8.0	0	100
U102 (1), o-c (With table 2B) 1)	0	8.0	0	100
U102 (3), o-c (With table 2B) 1)	0	8.0	0	100
R151, s-c (With table 2B) 1)	0	8.0	0	100
R146, s-c (With table 2B) 1)	0	8.0	0	100
U101(4), o-c (With table 2B) 1)	0	8.0	0	100
R115, s-c (With table 2B)	3.26	8.0	65.7	100
R148, s-c (With table 2B)	3.25	8.0	65.6	100
R156, o-c (With table 2B)	3.26	8.0	65.7	100
For model KTPS50-2421DT 3P				
Uoc =23.7 V (Normal condition)(with table 2B)	2.95	8.0	69.1	100
U102 (3-4), s-c (With table 2B) 1)	0	8.0	0	100
U102 (1-2), s-c (With table 2B) 1)	0	8.0	0	100
U102 (1), o-c (With table 2B) 1)	0	8.0	0	100
U102 (3), o-c (With table 2B) 1)	0	8.0	0	100
R151, s-c (With table 2B) 1)	0	8.0	0	100
R146, s-c (With table 2B) 1)	0	8.0	0	100
U101(4), o-c (With table 2B) 1)	0	8.0	0	100
R115, s-c (With table 2B)	3.0	8.0	70.3	100
R148, s-c (With table 2B)	3.0	8.0	70.3	100
R156, o-c (With table 2B)	3.0	8.0	70.1	100

	I <sub>sc</sub> (A)		VA	
	Meas.	Limit	Meas.	Limit
For model KTPS50-4810DT 3P				
Uoc =48.4 V (Normal condition)(with table 2B)	1.24	3.09	57.4	100
U102 (3-4), s-c (With table 2B) <b>1)</b>	0	3.09	0	100
U102 (1-2), s-c (With table 2B) <b>1)</b>	0	3.09	0	100
U102 (1), o-c (With table 2B) <b>1)</b>	0	3.09	0	100
U102 (3), o-c (With table 2B) <b>1)</b>	0	3.09	0	100
R151, s-c (With table 2B) <b>1)</b>	0	3.09	0	100
R146, s-c (With table 2B) <b>1)</b>	0	3.09	0	100
U101(4), o-c (With table 2B) <b>1)</b>	0	3.09	0	100
R115, s-c (With table 2B)	1.25	3.09	57.8	100
R148, s-c (With table 2B)	1.24	3.09	57.5	100
supplementary information:				
s-c= Short circuit, o-c= Open circuit; <b>1)</b> Unit shutdown.				



2.10.2	Table: working voltage measurement			P
Location	Peak voltage (V)	RMS voltage (V)	Comments	
For model KTPS45-0950DT 3P				
T101, Pin 1 – 7, 8	372	207		
T101, Pin 1 – 11, 12	380	207		
T101, Pin 3 – 7, 8	432	214		
T101, Pin 3 – 11, 12	388	210		
T101, Pin 5 – 7, 8	352	200		
T101, Pin 5 – 11, 12	388	200		
T101, Pin 6 – 7, 8	<b>560</b>	<b>244</b>		
T101, Pin 6 – 11, 12	540	235		
U102 Pin 3 - 1	372	215		
U102 Pin 4 - 1	368	209		
U102 Pin 3 - 2	<b>380</b>	<b>215</b>		
U102 Pin 4 - 2	364	209		
C132 trace – C115 trace	364	210		
For model KTPS50-1242DT 3P				
T101, Pin 1 – 7, 8	354	200		
T101, Pin 1 – 11, 12	370	202		
T101, Pin 3 – 7, 8	422	202		
T101, Pin 3 – 11, 12	360	200		
T101, Pin 5 – 7, 8	348	194		
T101, Pin 5 – 11, 12	404	196		
T101, Pin 6 – 7, 8	<b>544</b>	<b>250</b>		
T101, Pin 6 – 11, 12	524	235		
U102 Pin 3 - 1	366	210		
U102 Pin 4 - 1	<b>366</b>	<b>210</b>		
U102 Pin 3 - 2	358	201		
U102 Pin 4 - 2	356	202		
C132 trace – C115 trace	354	200		

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Location	Peak voltage (V)	RMS voltage (V)	Comments
For model KTPS50-4810DT 3P			
T101, Pin 1 – 7, 8	372	205	
T101, Pin 1 – 11, 12	420	222	
T101, Pin 3 – 7, 8	440	211	
T101, Pin 3 – 11, 12	413	217	
T101, Pin 5 – 7, 8	352	200	
T101, Pin 5 – 11, 12	<b>564</b>	219	Highest Vpeak
T101, Pin 6 – 7, 8	492	<b>252</b>	Highest Vrms
T101, Pin 6 – 11, 12	428	205	
U102 Pin 3 - 1	<b>400</b>	<b>230</b>	
U102 Pin 4 - 1	384	216	
U102 Pin 3 - 2	400	229	
U102 Pin 4 - 2	384	217	
C132 trace – C115 trace	364	208	
supplementary information:			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Testing conducted on PCB layout A to represent PCB layout B, due to both PCBs are same measured distance..							
Functional: F101 pad 1 – 2 <b>1)</b>	339	240	1.5	13.1	2.5	13.1	
Reinforced: Line / Neutral trace – C108 trace (sec.) <b>1) 2)</b>	339	240	4.0	4.0	5.0	5.5	
Reinforced: Line trace – trace of screw (sec.) <b>1) 2)</b>	339	240	4.0	4.6	5.0	5.4	
Reinforced: C109 trace (prim.) – C109 trace(sec.) <b>1)</b>	339	240	4.0	7.1	5.0	7.1	
Reinforced: R101 pad (prim.) – bottom of metal chassis (sec.) <b>1)</b>	339	240	4.0	5.2	5.0	5.2	
Reinforced:R101 body (prim.) –bottom of metal chassis (sec.)	339	240	4.0	7.4	5.0	7.4	
Reinforced:Q101 pins (prim.) –bottom of metal chassis (sec.)	339	240	4.0	5.8	5.0	>>5.8	
Reinforced:Q101 body (prim.) – bottom of metal chassis (sec.)	339	240	4.0	6.2	5.0	6.2	
Reinforced: C132 trace (prim.) – C115 trace(sec.) <b>1) 2)</b>	364	210	4.0	6.2	5.0	6.6	
Reinforced: U102 trace (prim.) – U102 trace(sec.) <b>1) 2)</b>	400	230	4.0	6.6	5.0	7.1	

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Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Supplementary information:						
<p>1) Measured on the PCB.</p> <p>2) There is a slot (width &gt; 1.0 mm) on the PCB.</p> <ul style="list-style-type: none"> <li>- No components reduce distance after 10N steady force applied.</li> <li>- The following component is fixed to stay in position by use of glue: R101.</li> <li>- The following components are covered by tubes or sleeves: F101, R125 and metal clip (fix the silicon rubber, Q101 and metal shield).</li> <li>- Two layers of insulation tape around transformer (T101) core to separate core body and secondary components/primary components.</li> <li>- A silicon rubber provided between Q101 (primary) and Mylar sheet / metal shield (secondary) to keep reinforced insulation.</li> <li>- An U-shape Mylar sheet between PCB bottom side and metal shield, to separate primary components / primary trace and metal shield (secondary).</li> </ul>						

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Reinforced: Tubing of F101 body.	339V	240	3000V	0.4mm	0.4mm	
Reinforced: Silicon rubber provided on Q101 body	339V	240	3000V	0.4mm	0.42mm	
Reinforced: U-shape mylar sheet between PCB bottom side and metal chassis	564V	252	3000V	0.4mm	0.4mm	
Supp: Insulation tape around transformer (T101) core body (Tested 1 layer)	564V	252	1864V	2 layers	2 layers	
Insulation tape in transformer (T101) Reinforced- 2 layers (Tested 1 layer)	564V	252	3000V	2 layers	2 layers	
Supplementary information:						

4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									N/A
Is it possible to install the battery in a reverse polarity position?									N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									
Test results:									Verdict
- Chemical leaks									
- Explosion of the battery									
- Emission of flame or expulsion of molten metal									
- Electric strength tests of equipment after completion of tests									
Supplementary information:									

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<b>4.3.8</b>	<b>TABLE: Batteries</b>	<b>N/A</b>
Battery category ..... : Manufacturer ..... : Type / model..... : Voltage ..... : Capacity..... : Tested and Certified by (incl. Ref. No.) ..... : Circuit protection diagram:		

<b>MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)</b>	
Location of replaceable battery	
Language(s) .....:	
Close to the battery .....:	
In the servicing instructions .....:	
In the operating instructions .....:	

4.5	TABLE: Thermal requirements					P
	Supply voltage (V):	90V <b>1)</b>	264V <b>1)</b>	90V <b>2)</b>	264V <b>2)</b>	—
	Maximum measured temperature T of part/at::	T (°C)				Allowed T <sub>max</sub> (°C)
For model KTPS45-0950DT 3P						
	T101 coil	94.7	96.2	96.0	98.2	110
	T101 core	85.9	88.3	88.1	91.3	110
	U102 body	83.1	79.2	80.9	77.8	100
	C115 body	78.9	76.1	77.7	75.5	125
	PCB near R101	96.2	71.7	97.2	72.0	105
	AC inlet body	64.7	62.6	67.1	63.8	70
	L101 coil	82.4	69.4	83.4	70.5	120
	C108 body	80.4	67.9	81.8	69.3	125
	C109 body	84.9	71.1	84.2	71.6	125
	C102 body	79.0	69.5	80.8	71.3	100
	L102 coil	88.7	71.0	90.8	73.6	120
	PCB near BD101	88.7	73.6	87.7	73.0	105
	C104 body	84.8	78.1	85.9	79.5	105
	PCB near Q101	96.7	91.6	95.8	91.2	105
	Enclosure inside near T101	67.0	67.6	74.9	76.0	--
	Enclosure outside	50.0	49.8	63.8	64.8	95
	Ambient	40.0°C	40.0°C	40.0°C	40.0°C	--
Supplementary information:						
Having a specified maximum ambient temperature of 40°C. Temperature limits include less 10K for thermocouple measurement method. Tested according to cl. 1.4.12. If no limit is stated, the temperature is for reference only.						
<b>1)</b> Label side upward <b>2)</b> Label side downward.						

4.5	TABLE: Thermal requirements (continued)				P	
	Supply voltage (V):	90V 1)	264V 1)	90V 2)	264V 2)	—
	Maximum measured temperature T of part/at:	T (°C)				Allowed T <sub>max</sub> (°C)
For model KTPS45-0950DT 3P (for alternate dimension of heatsink)						
	T101 coil	84.8	87.4	86.3	87.7	110
	T101 core	84.5	84.9	85.8	84.9	110
	U102 body	77.9	75.9	79.8	76.5	100
	C115 body	72.4	71.7	75.6	73.4	125
	PCB near R101	59.2	54.7	61.0	55.0	105
	AC inlet body	59.7	53.1	61.8	52.6	70
	L101 coil	69.2	60.7	70.5	60.8	120
	C108 body	71.5	61.0	72.9	61.0	125
	C109 body	73.6	63.5	74.8	64.3	125
	C102 body	73.7	64.4	74.4	63.9	100
	L102 coil	86.2	67.3	88.9	67.6	120
	PCB near BD101	95.1	73.1	97.0	74.2	105
	C104 body	80.1	69.8	81.0	69.6	105
	PCB near Q101	83.9	81.4	87.1	83.0	105
	Enclosure inside near T101	67.9	68.0	67.5	66.3	--
	Enclosure outside	52.9	52.7	53.6	52.1	95
	Ambient	40.0	40.0	40.0	40.0	--
Supplementary information:						
Having a specified maximum ambient temperature of 40°C. Temperature limits include less 10K for thermocouple measurement method. Tested according to cl. 1.4.12. If no limit is stated, the temperature is for reference only.						
1) Label side upward 2) Label side downward.						



4.5	TABLE: Thermal requirements (continued)					P
	Supply voltage (V):	90V 1)	264V 1)	90V 2)	264V 2)	—
	Maximum measured temperature T of part/at::	T (°C)				Allowed T <sub>max</sub> (°C)
For model KTPS50-1242DT 3P						
	T101 coil	102.9	99.8	101.2	102.1	110
	T101 core	95.3	94.2	94.0	96.8	110
	U102 body	96.6	89.4	92.8	88.8	100
	C115 body	91.2	83.2	85.3	81.2	125
	PCB near R101	90.3	70.9	87.0	69.7	105
	AC inlet body	64.9	61.3	64.0	61.8	70
	L101 coil	85.7	69.5	82.4	68.6	120
	C108 body	86.3	69.0	83.9	68.6	125
	C109 body	82.0	66.8	79.8	66.5	125
	C102 body	81.9	69.5	81.8	70.7	100
	L102 coil	97.9	72.3	95.5	72.4	120
	PCB near BD101	104.9	78.0	99.6	76.1	105
	C104 body	90.9	76.6	89.0	77.4	105
	PCB near Q101	96.8	82.0	92.8	81.1	105
	Enclosure inside near T101	77.0	74.7	86.3	86.8	--
	Enclosure outside	62.9	61.5	74.2	75.4	95
	Ambient	40.0°C	40.0°C	40.0°C	40.0°C	--
Supplementary information:						
Having a specified maximum ambient temperature of 40°C. Temperature limits include less 10K for thermocouple measurement method. Tested according to cl. 1.4.12. If no limit is stated, the temperature is for reference only.						
1) Label side upward 2) Label side downward.						

4.5	TABLE: Thermal requirements (continued)				P	
	Supply voltage (V):	90V 1)	264V 1)	90V 2)	264V 2)	—
	Maximum measured temperature T of part/at:	T (°C)				Allowed T <sub>max</sub> (°C)
For model KTPS50-1242DT 3P (for alternate dimension of heatsink)						
	T101 coil	85.1	83.9	88.6	87.5	110
	T101 core	82.8	83.4	86.3	87.1	110
	U102 body	81.1	76.6	83.2	78.9	100
	C115 body	78.0	74.3	81.4	77.6	125
	PCB near R101	65.7	59.5	66.0	60.6	105
	AC inlet body	63.7	56.2	63.8	56.8	70
	L101 coil	75.9	64.8	76.3	65.9	120
	C108 body	78.6	65.5	79.0	66.6	125
	C109 body	79.3	66.6	80.3	68.6	125
	C102 body	79.4	67.9	79.3	68.5	100
	L102 coil	91.0	71.6	86.9	72.8	120
	PCB near BD101	88.5	71.8	90.6	74.2	105
	C104 body	84.7	74.1	85.2	75	105
	PCB near Q101	82.2	76.1	85.5	79.2	105
	Enclosure inside near T101	71.6	71.2	76.5	75.9	--
	Enclosure outside	54.0	54.3	60.9	60.9	95
	Ambient	40.0	40.0	40.0	40.0	--
Supplementary information:						
Having a specified maximum ambient temperature of 40°C. Temperature limits include less 10K for thermocouple measurement method. Tested according to cl. 1.4.12. If no limit is stated, the temperature is for reference only. 1) Label side upward 2) Label side downward.						

4.5	TABLE: Thermal requirements (continued)					P
	Supply voltage (V):	90V 1)	264V 1)	90V 2)	264V 2)	—
Maximum measured temperature T of part/at::		T (°C)				Allowed T <sub>max</sub> (°C)
For model KTPS50-4810DT 3P						
T101 coil		96.6	96.7	101.8	103.3	110
T101 core		87.0	87.5	91.6	92.7	110
U102 body		77.2	72.7	79.9	77.0	100
C115 body		80.9	77.4	84.0	82.1	125
PCB near R101		81.9	65.2	81.4	65.6	105
AC inlet body		65.6	55.5	64.4	56.1	70
L101 coil		77.2	64.7	77.7	66.5	120
C108 body		77.0	64.2	76.0	65.4	125
C109 body		75.4	64.4	75.4	66.2	125
C102 body		73.5	63.2	73.8	64.7	100
L102 coil		91.9	68.8	91.0	70.1	120
PCB near BD101		88.1	70.3	88.0	72.2	105
C104 body		83.8	72.4	84.8	74.6	105
PCB near Q101		92.2	75.1	92.5	77.2	105
Enclosure inside near T101		62.3	62.6	74.0	74.8	--
Enclosure outside		57.0	57.0	72.3	73.1	95
Ambient		40.0°C	40.0°C	40.0°C	40.0°C	--
Supplementary information:						
Having a specified maximum ambient temperature of 40°C. Temperature limits include less 10K for thermocouple measurement method. Tested according to cl. 1.4.12. If no limit is stated, the temperature is for reference only.						
1) Label side upward 2) Label side downward.						

4.5	TABLE: Thermal requirements (continued)				P	
	Supply voltage (V):	90V 1)	264V 1)	90V 2)	264V 2)	—
	Maximum measured temperature T of part/at:	T (°C)				Allowed T <sub>max</sub> (°C)
For model KTPS50-4810DT 3P (for alternate dimension of heatsink)						
	T101 coil	96.0	97.5	96.1	96.3	110
	T101 core	88.0	90.3	89.0	89.8	110
	U102 body	80.3	77.6	80.8	76.2	100
	C115 body	77.9	74.8	80.0	75.2	125
	PCB near R101	80.8	64.2	80.8	63.8	105
	AC inlet body	63.9	54.3	63.7	52.4	70
	L101 coil	80.3	65.1	80.4	64.4	120
	C108 body	77.0	62.9	75.4	61.6	125
	C109 body	82.7	66.1	82.0	65.4	125
	C102 body	77.3	65.5	76.2	63.3	100
	L102 coil	93.7	69.1	94.9	68.5	120
	PCB near BD101	102.0	74.6	102.9	74.7	105
	C104 body	84.0	71.3	82.9	69.2	105
	PCB near Q101	86.1	79.3	88.5	80.2	105
	Enclosure inside near T101	72.3	72.4	70.9	70.0	--
	Enclosure outside	62.1	61.3	59.6	57.9	95
	Ambient	40.0	40.0	40.0	40.0	--
supplementary information:						
Having a specified maximum ambient temperature of 40°C. Temperature limits include less 10K for thermocouple measurement method. Tested according to cl. 1.4.12. If no limit is stated, the temperature is for reference only.						
1) Label side upward 2) Label side downward.						

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) .....	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)
Supplementary information:			

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Enclosure	Sabic Innovative Plastics B V	940 945 (GG)	2.2 2.2	V-0 V-0	UL UL	
Supplementary information:						

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Live phase – output connector	0.18	0.25	Fuse in	
Neutral phase – output connector	0.18	0.25	Fuse in	
Line phase – enclosure (with metal foil)	0.01	0.25	Fuse in	
Neutral phase – enclosure (with metal foil)	0.01	0.25	Fuse in	
supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Reinforced: Primary – Secondary	DC	4242	No	
Reinforced: Primary – Enclosure (with foil)	DC	4242	No	
Reinforced: Primary – (PE) Pin of Inlet	DC	4242	No	
Reinforced: T101 Primary windings – Secondary windings (for all transformer source)	AC	3000	No	
Supplementary information:				

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5.3		TABLE: Fault condition tests					P
		Ambient temperature (°C) .....			25°C if not state.		—
		Power source for EUT: Manufacturer, model/type, output rating .....					—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
For model KTPS50-1242DT 3P							
BD101 (~ - +)	s-c	240	< 1 sec	F101	1)	Fuse opened instantly, no hazards.	
C104	s-c	240	< 1 sec	F101	1)	Fuse opened instantly, no hazards.	
Q101 (D - G)	s-c	240	< 1 sec	F101	1)	Fuse opened, Q101, R152, R101 damaged. No hazards.	
Q101 (D - S)	s-c	240	< 1 sec	F101	1)	Fuse opened, Q101, R152, U101 damaged. No hazards.	
Q101 (G - S)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
R125	s-c	240	< 1 sec	F101	1)	Fuse opened, Q101 damaged. No hazards.	
U101 (1 - 8)	s-c	240	< 1 sec	F101	1)	Fuse opened, Q102, R156, U101 damaged. No hazards.	
U102 (1 - 2)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
U102 (3 - 4)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
U102 (1)	o-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
U102 (3)	o-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
T101 (1 - 3)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
T101 (7, 8 - 11, 12)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
+12V output	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.	
+12V output	o-l	240	12 hrs	F101	0.55	Unit shutdown. Max temp. measured on T101 coil max.=130.4°C, U102=114.3°C, ambient=22.7°C. Output load is 4.7A. No damage. No hazard.	

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
For model KTPS45-0950DT 3P						
T101 (7, 8 – 11, 12)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.
+9V output	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.
+9V output	o-l	240	9 hrs	F101	0.52	Unit shutdown. Max temp. measured on T101 coil max.=114.2°C, U102=100°C, ambient=22.7°C. Output load is 5.2A. No damage. No hazard.
For model KTPS50-4810DT 3P						
T101 (7, 8 – 11, 12)	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.
+48V output	s-c	240	5 min	F101	0.04	Unit shutdown. No damage, no hazards.
+48V output	o-l	240	6.5 hrs	F101	0.49	Unit shutdown. Max temp. measured on T101 coil max.=103.3°C, U102=81°C, ambient=23°C. Output load is 1.24A. No damage. No hazard.
Supplementary information: s-c=Short circuit, o-c=Open circuit, o-l=Overload						
1) Fuse current is more than fuse rating times 2.1. For fuse open conditions, same result came out for each source of fuses.						

C.2	TABLE: transformers							P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
T101	Pri. pins / Windings – Sec. pins / Windings 1)	564	252	3000V ac	4.4	5.2 2)	2 layers min. or 0.4 mm	
T101	Pri. pins / Windings – Core- Sec. pins / Windings 1)	564	252	3000V ac	4.4	5.2 2)	2 layers min. or 0.4 mm	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
T101	Pri. pins / Windings – Sec. pins / Windings 1)			3000V ac	5.2	5.2	2 layers	
T101	Pri. pins / Windings – Core- Sec. pins / Windings 1)			3000V ac	5.4	5.4	2 layers	
supplementary information:								
1). All transformers construction are identical to each one. 2) Linear interpolation is considered.								

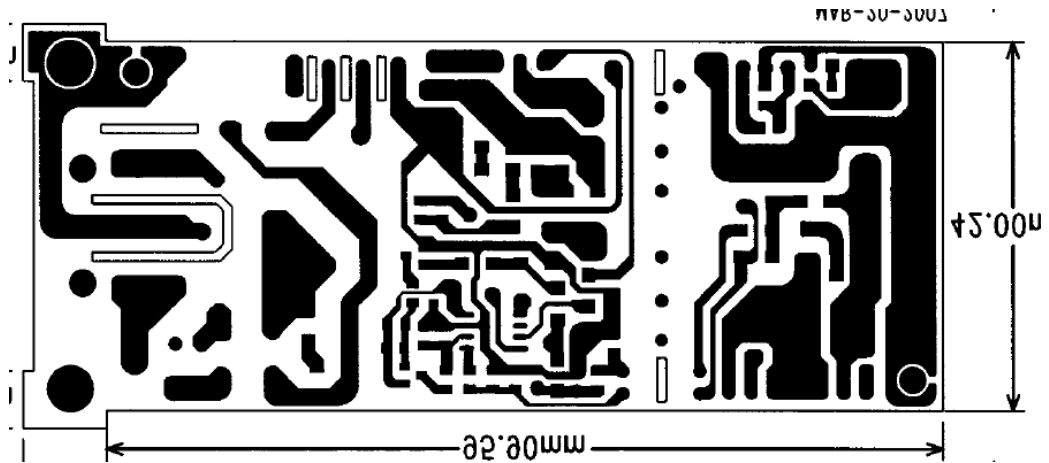




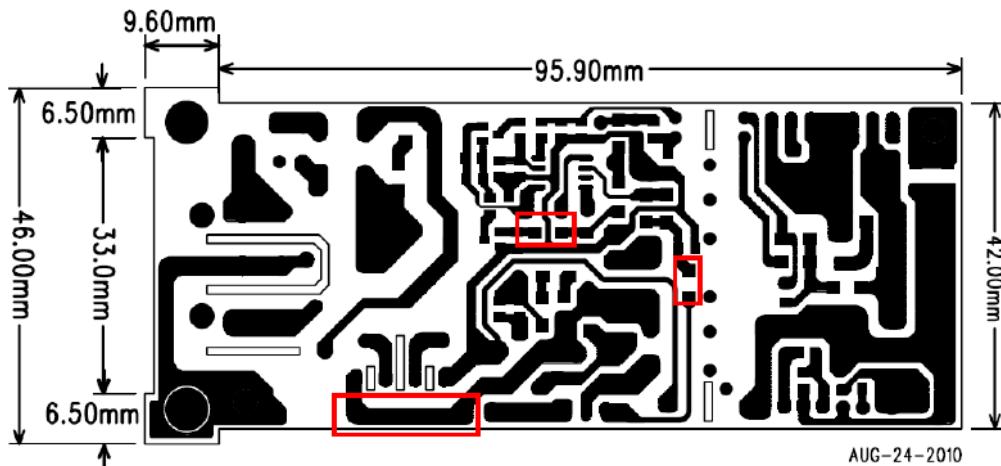
## PCB layout

Report No. 187244

Trace side (PCB layout A)



Trace side (PCB layout B)



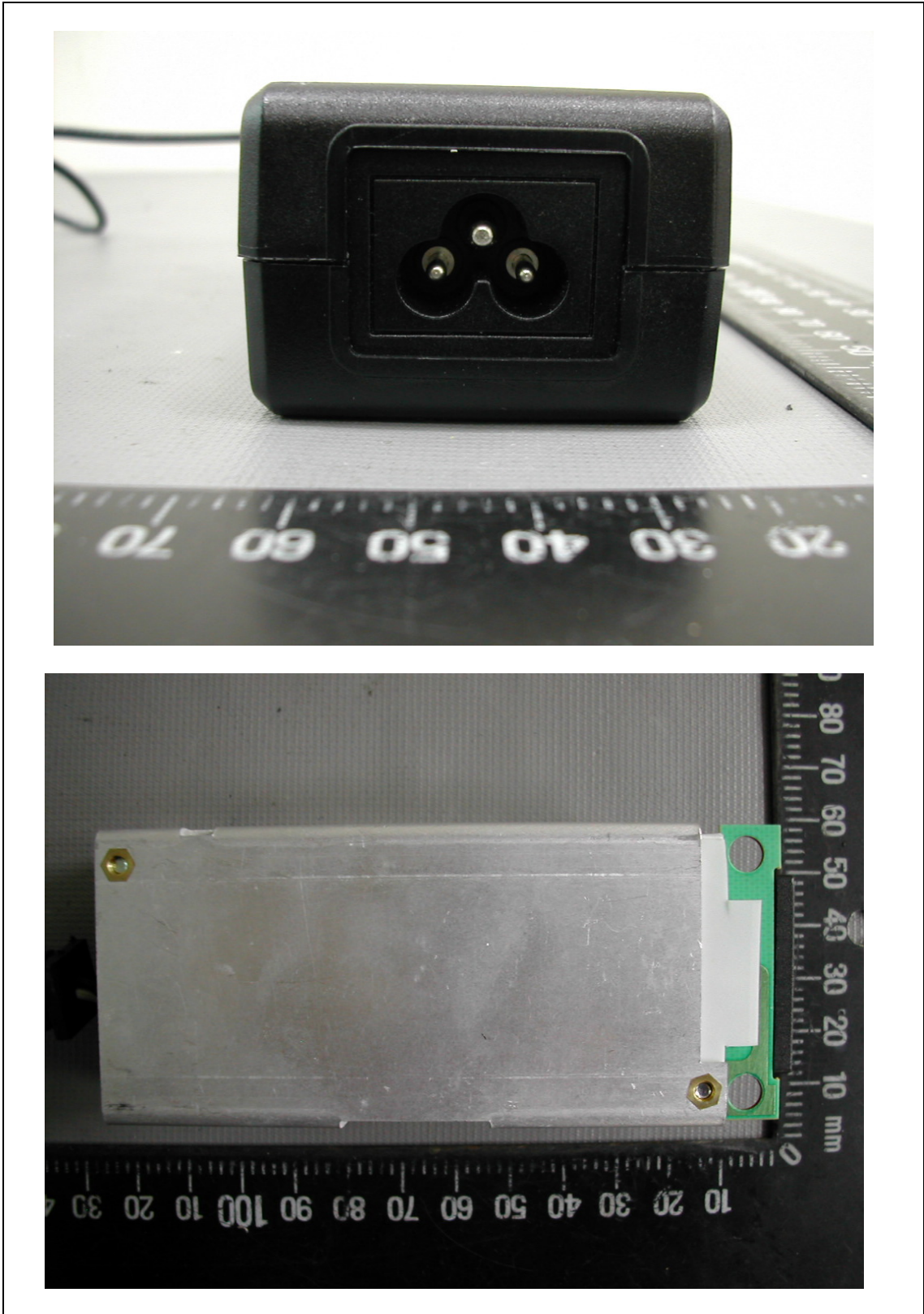
**Photos**

Report No. 187244



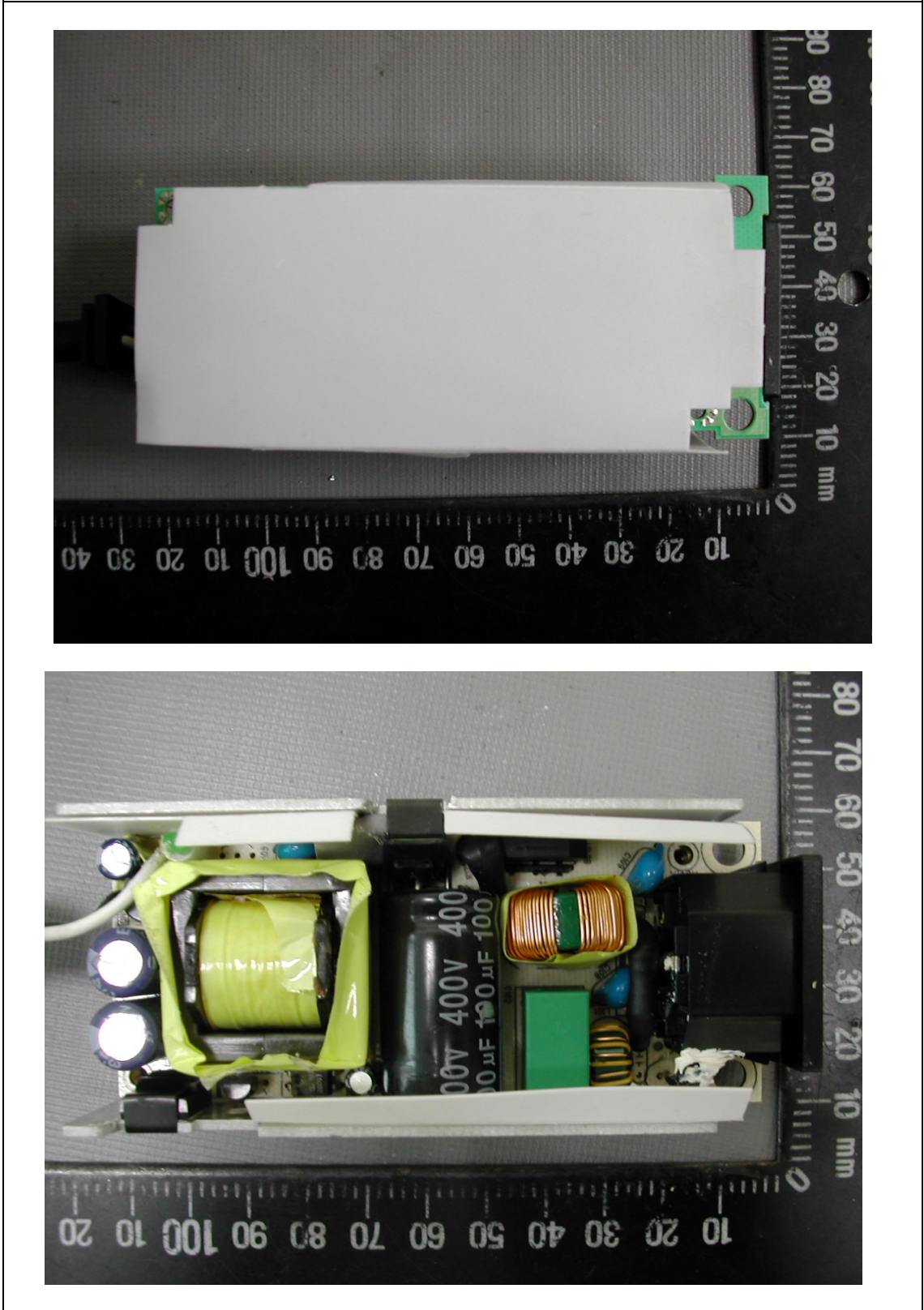
Photos

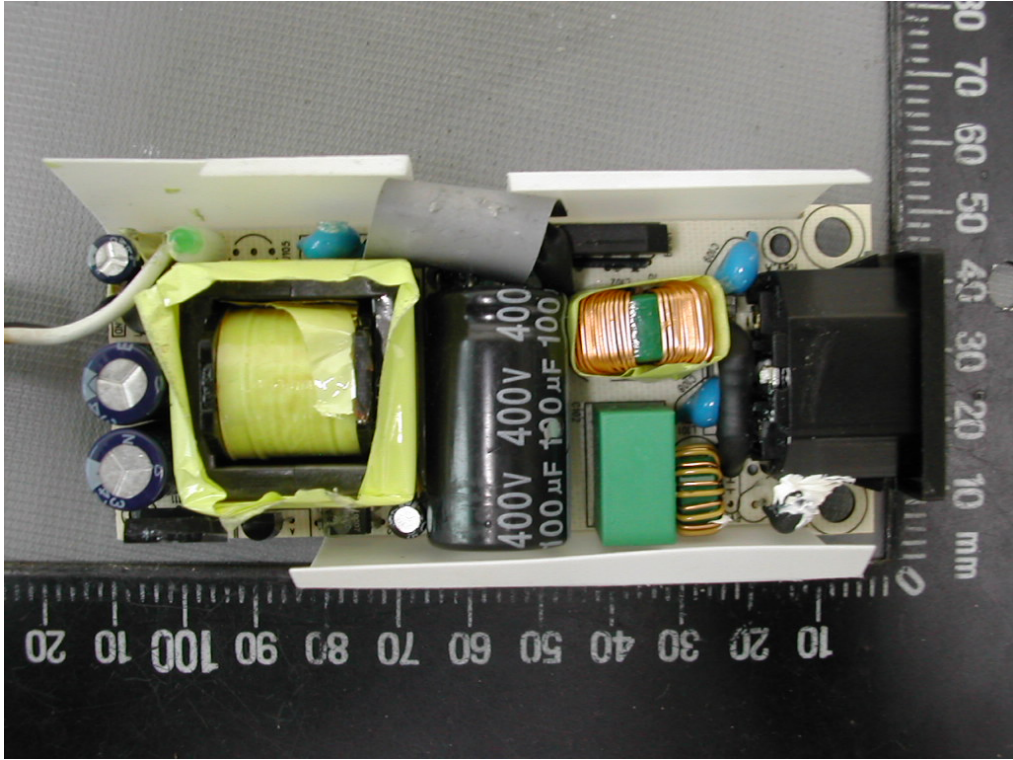
Report No. 187244



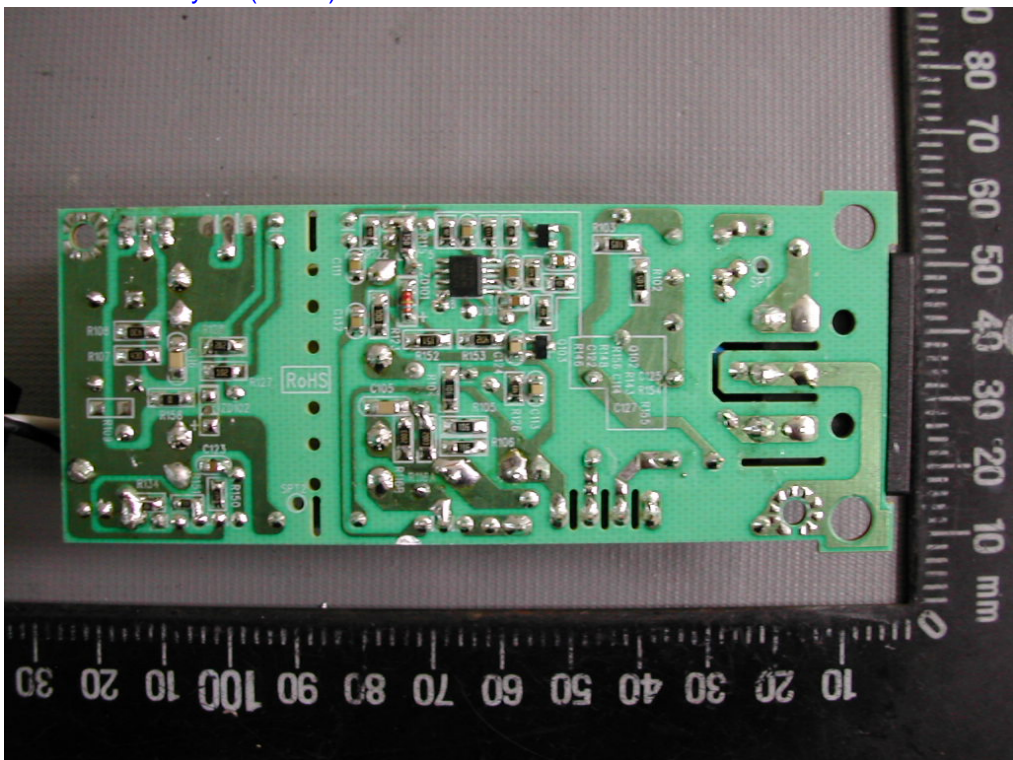
**Photos**

Report No. 187244





Alternate PCB layout (Call A)

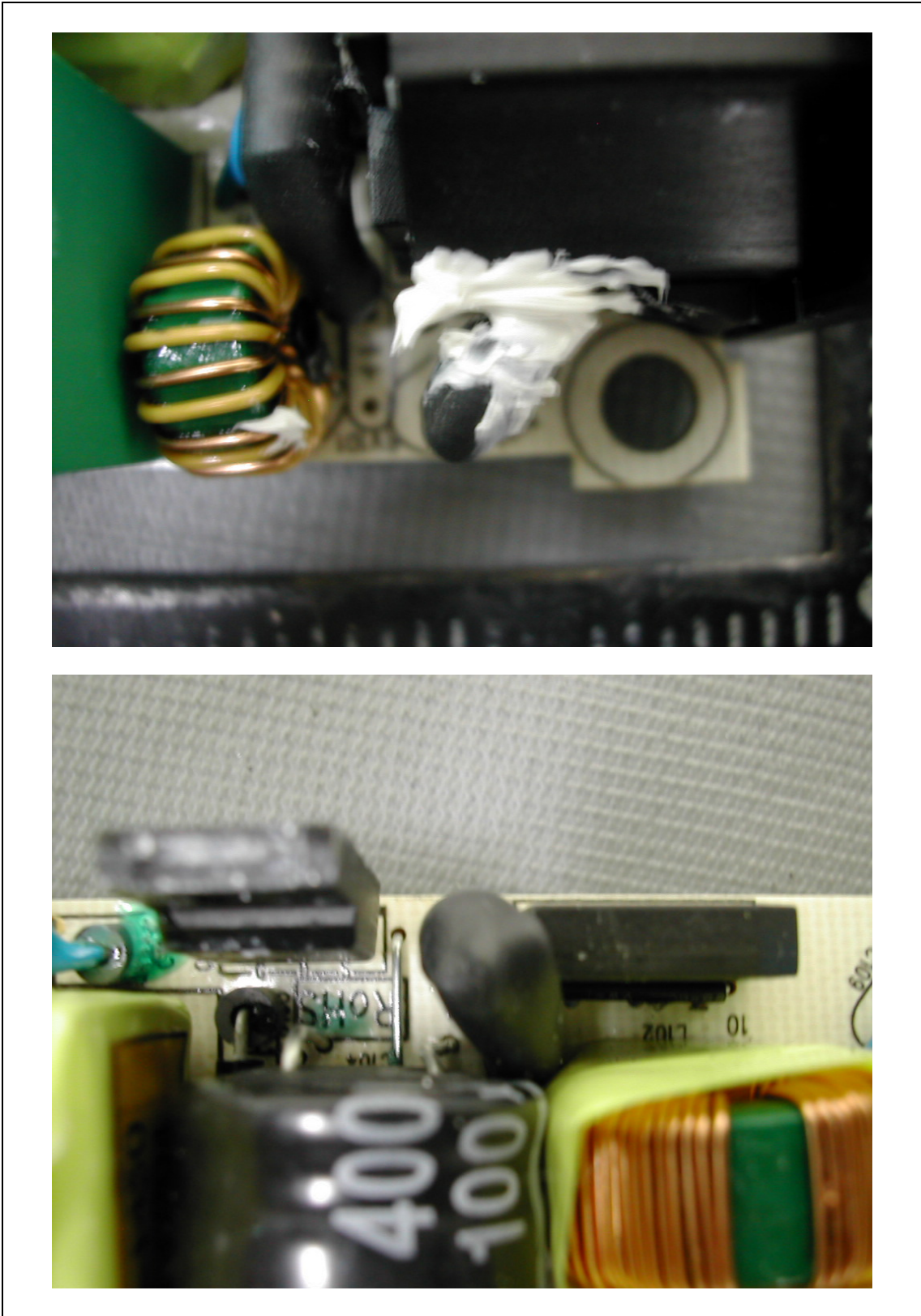


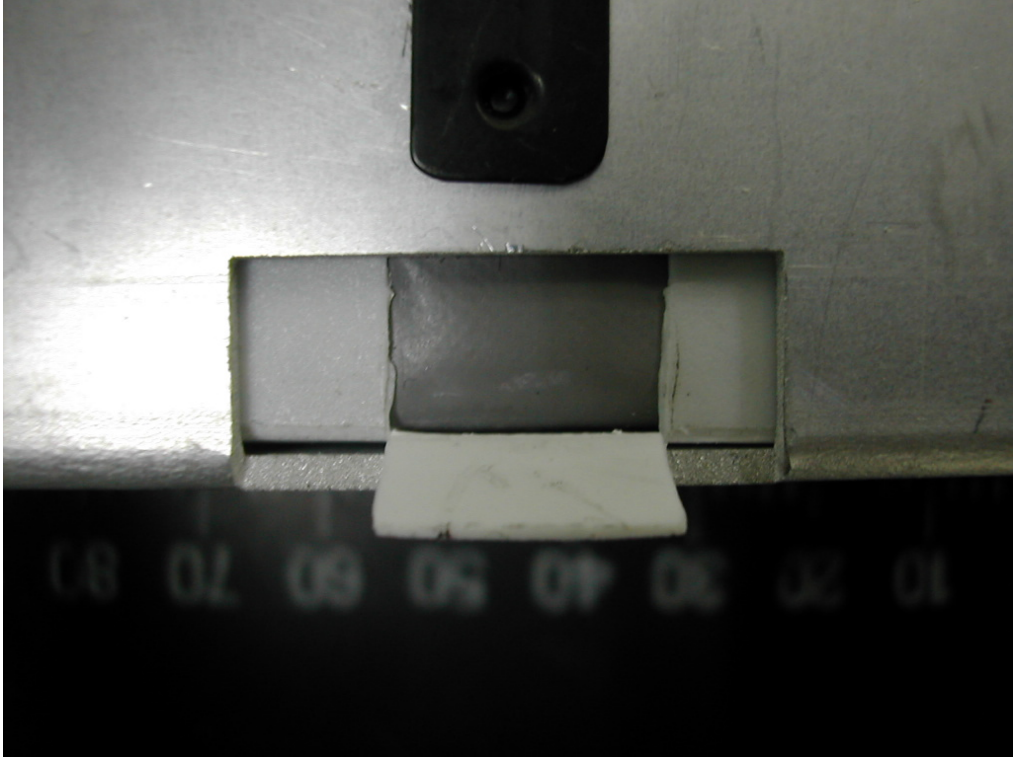


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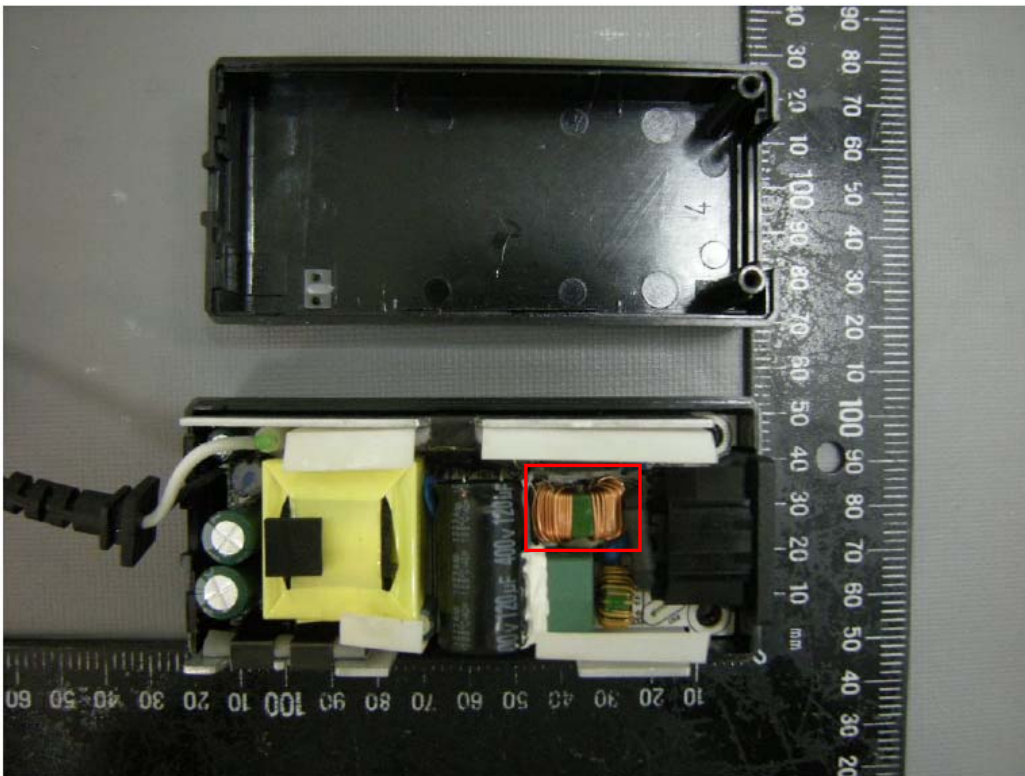
Photos

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Tape of choke (L102) as option use.

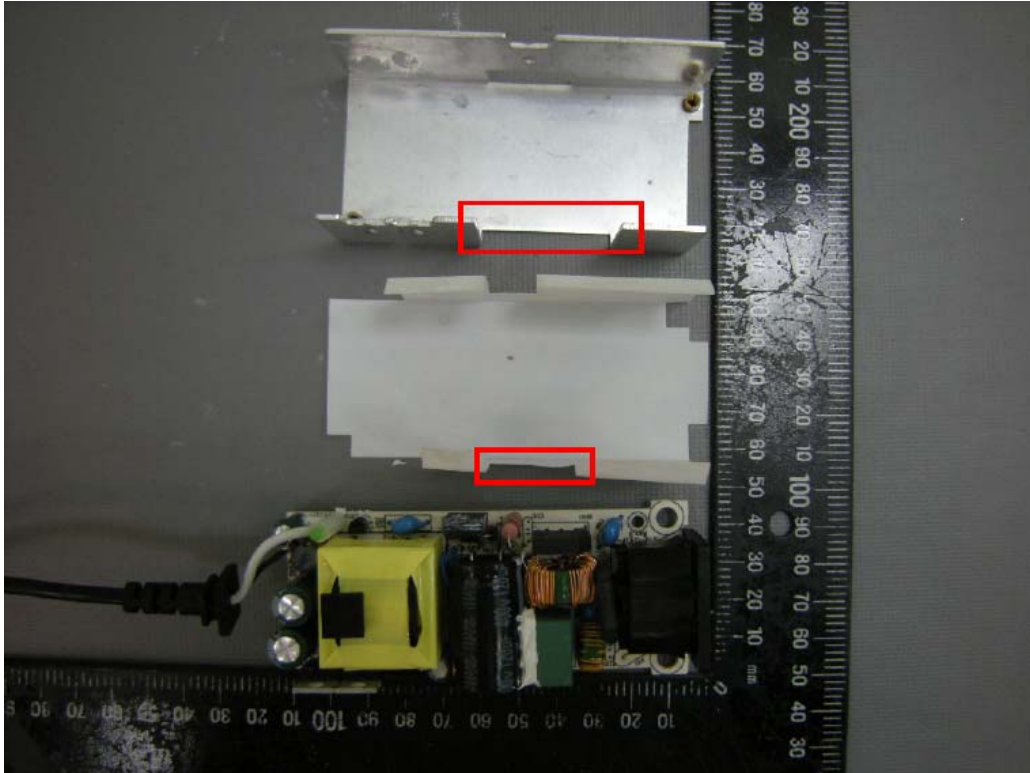




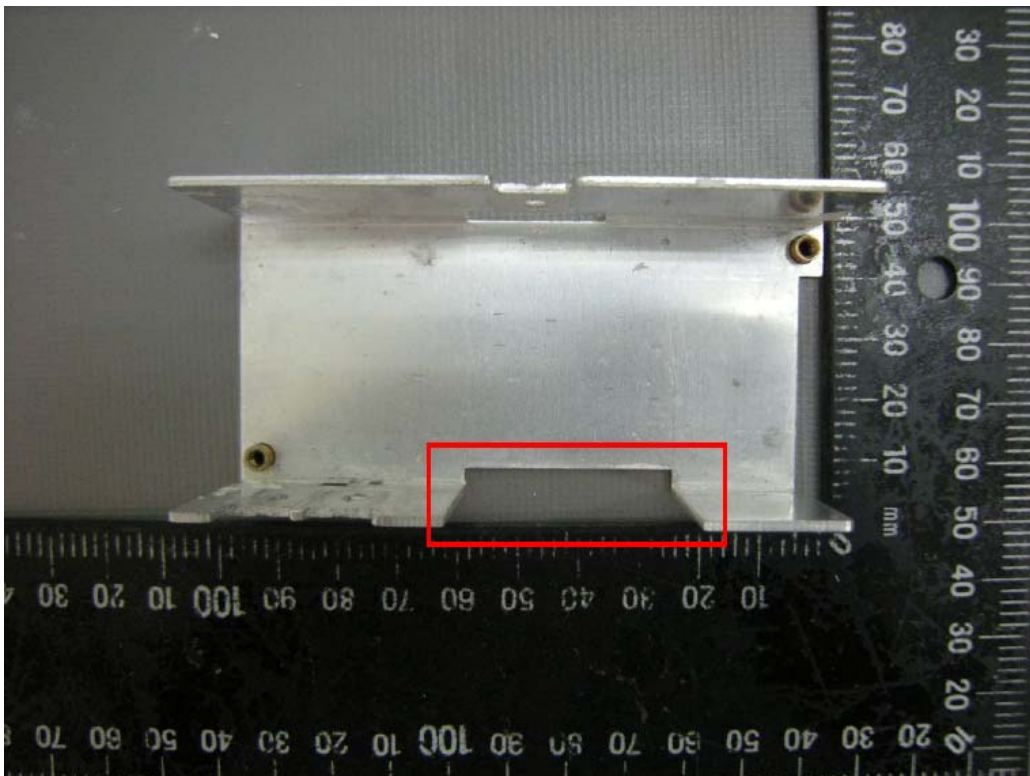
**Photos**

Report No. 187244

Alternate dimension of heatsink and mylar sheet



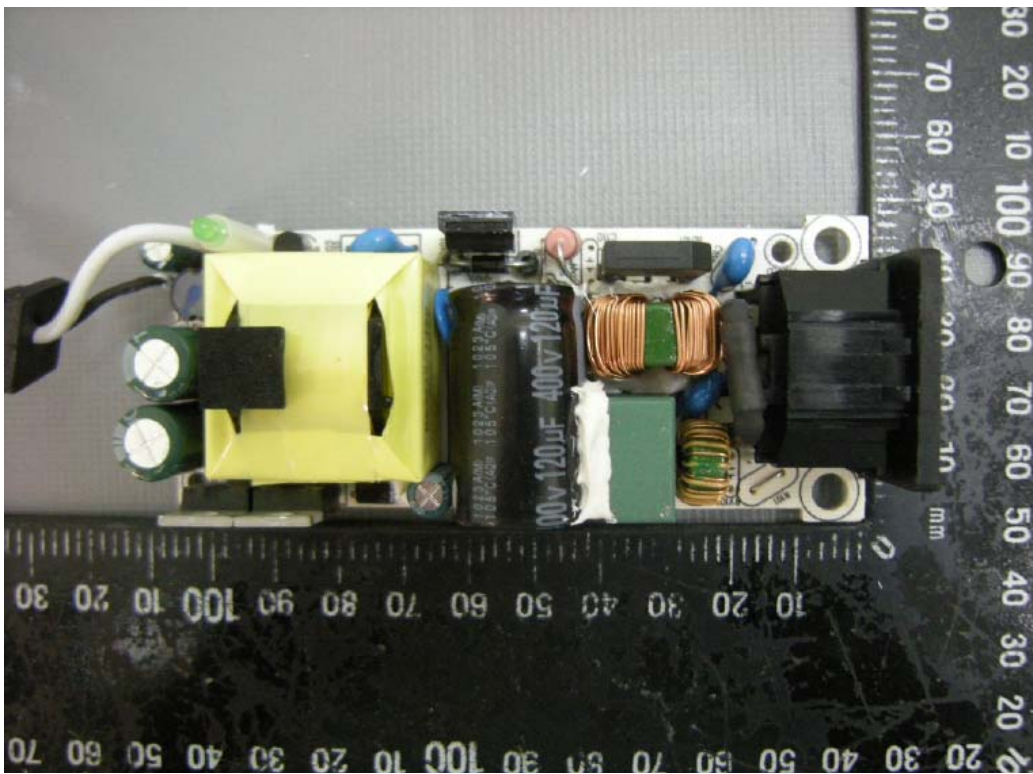
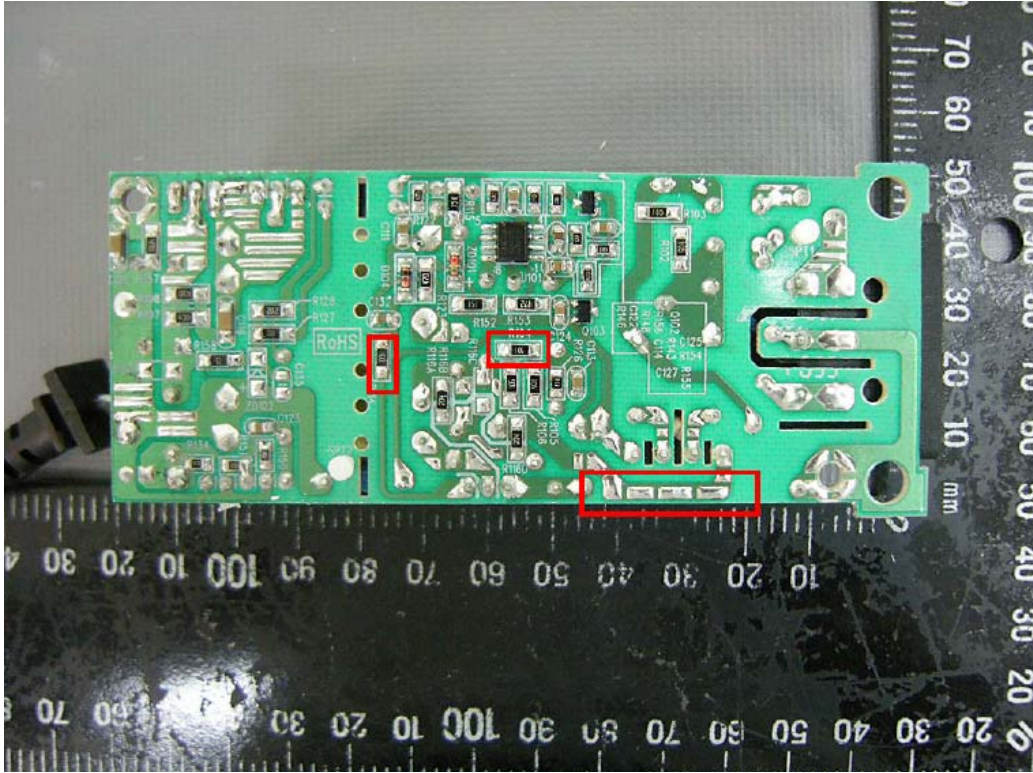
Alternate dimension of heatsink



Photos

Report No. 187244

Alternate PCB layout (Call B)



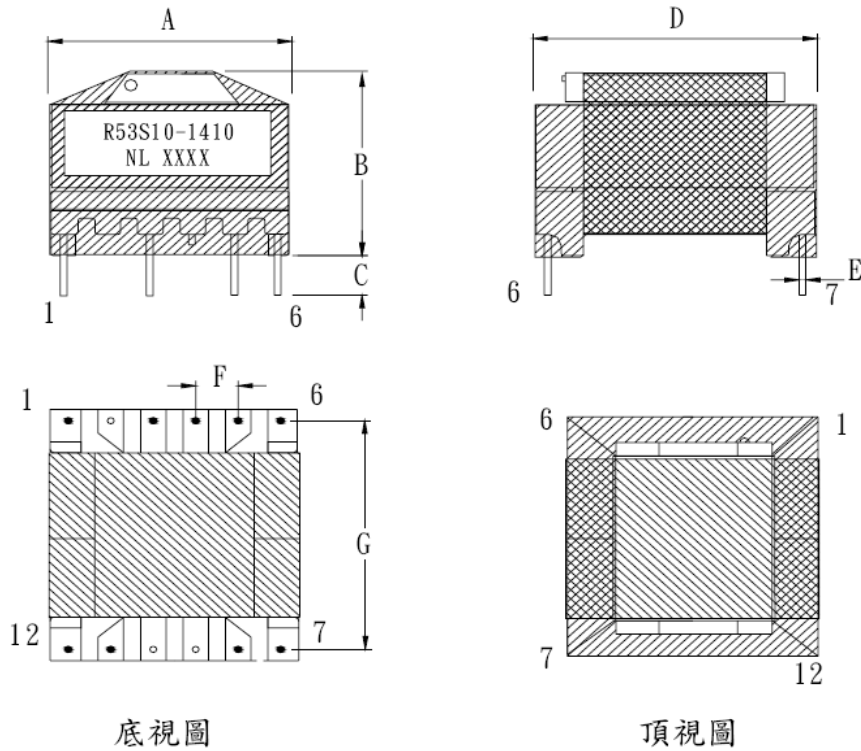
## Transformer specification

Report No. 187244

Construction / Winding diagram / Component part no: T101 (The construction of all sources is identical to each other except manufacturer and material).

Overall for all transformer sources and type:

1. PHYSICAL DIMENSION(UNIT: m/m): (外觀圖尺寸)



\*. "XXXX"前兩個"XX"表示公元年份,後兩個"XX"表示周期.

\*. PIN2,9,10CUT OFF,PIN4 CUT OFF2/3;

\*. CORE TAPE UL(黃) 3TS→用 24mm TAPE 包外圍 3TS 后反折于 CORE 上(先折 PIN1~6 与 PIN7~12 兩端,再折二側端)→再包与線包同寬 TAPE 1TS(如圖).

SPEC	A	B	C	D	E	F	G	H	I	J
		MAX	MAX	+/-0.3	MAX	+/-0.1	+/-0.3	+/-0.5		
DIM	31.5	26.0	3.2	31.5	0.8 $\phi$	5.0	25.0			

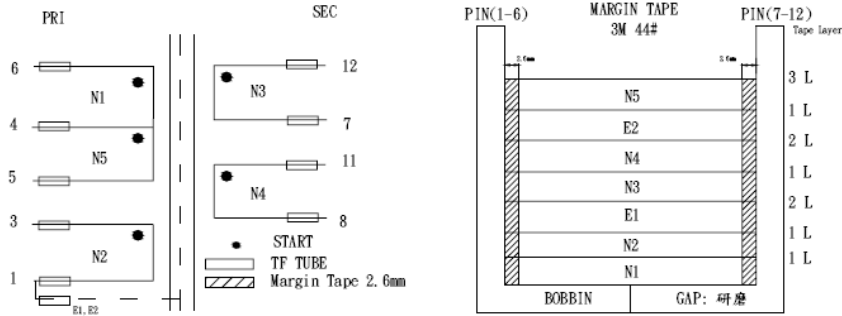
## Transformer specification

Report No. 187244

Construction / Winding diagram: For transformer type R53S10-1410

2.SCHEMATIC: (線路圖)

3.WINDING: (剖面圖)



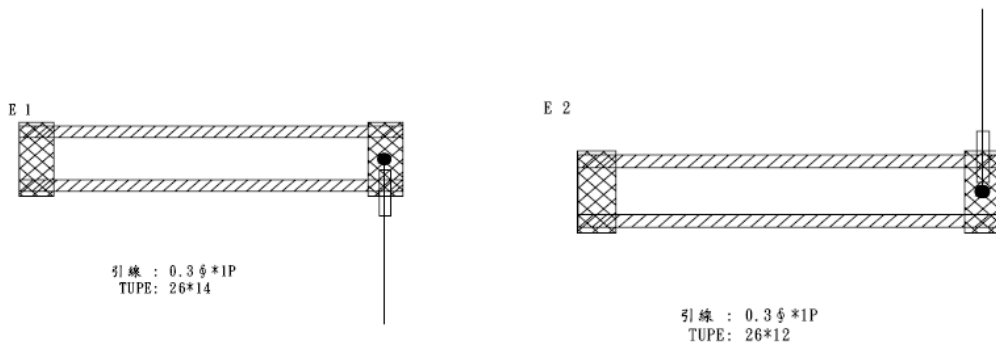
4.WINDING TABLE: (繞線結構)

Winding No (組別)	Margin Tape (檔牆膠帶)	PIN (腳位)	Wire & Wire Copper (線徑 X 股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	2.6mm/2.6mm	6 ~ 4	0.45 $\phi$ x 1P	20 TS	密繞	1 L	24*16/24*16
N 2	2.6mm/2.6mm	3 ~ 1	0.40 $\phi$ x 1P	8 TS	疏繞	1 L	24*14/24*16
E 1	2.6mm/2.6mm	1~~	0.025x10mm	1.1 TS	背膠	2 L	26*14/0
N 3	2.6mm/2.6mm	12 ~ 7	0.60 $\phi$ x 2P	5 TS	疏繞	1 L	16*19/16*16
N 4	2.6mm/2.6mm	11 ~ 8	0.60 $\phi$ x 2P	5 TS	疏繞	2 L	16*16/16*16
E 2	2.6mm/2.6mm	1~~	0.025x10mm	1.1 TS	背膠	1 L	26*12/0
N 5	2.6mm/2.6mm	4 ~ 5	0.45 $\phi$ x 1P	20 TS	密繞	3 L	24*16/24*16

NOTE:

1. 加 MARGIN TAPE 3M 44#2.6mm,進出線須穿 TF TUBE;
2. E1,E2 為內銅箔,接 0.3  $\phi$  \*1P 引線,E1 焊點朝下繞制, E2 焊點朝上繞制,一般加工兩端,從有線端起繞。

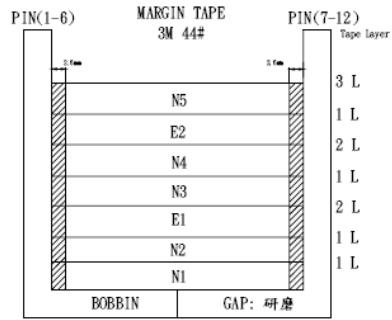
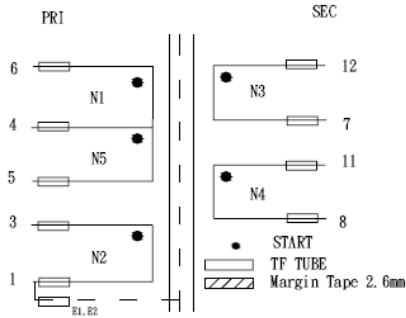
\*. 內銅箔加工方法示意圖: (0.025\*10mm 背膠,E1 焊點朝下,E2 焊點朝上,背膠須反折 3.0mmMIN)



Construction / Winding diagram: For transformer type R53S10-1420

2. SCHEMATIC: (線路圖)

3. WINDING: (剖面圖)



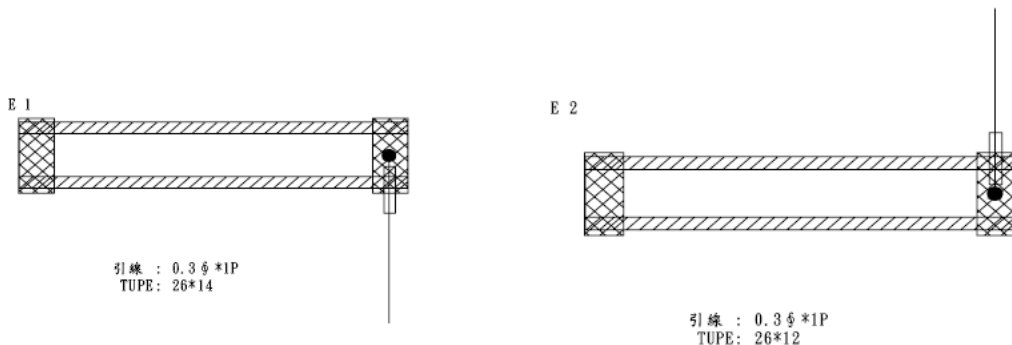
4. WINDING TABLE: (繞線結構)

Winding No (組別)	Margin Tape (槽牆膠帶)	PIN (腳位)	Wire & Wire Copper (線徑 X 股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	2.6mm/2.6mm	6 ~ 4	0.45 $\phi$ x 1P	20 TS	密繞	1 L	24*16/24*16
N 2	2.6mm/2.6mm	3 ~ 1	0.40 $\phi$ x 1P	8 TS	疏繞	1 L	24*14/24*16
E 1	2.6mm/2.6mm	1~~	0.025x10mm	1.1 TS	背膠	2 L	26*14/0
N 3	2.6mm/2.6mm	12 ~ 7	0.55 $\phi$ x 2P	7 TS	疏繞	1 L	17*16/17*16
N 4	2.6mm/2.6mm	11 ~ 8	0.55 $\phi$ x 2P	7 TS	疏繞	2 L	17*16/17*16
E 2	2.6mm/2.6mm	1~~	0.025x10mm	1.1 TS	背膠	1 L	26*12/0
N 5	2.6mm/2.6mm	4 ~ 5	0.45 $\phi$ x 1P	20 TS	密繞	3 L	24*16/24*16

NOTE:

- 加 MARGIN TAPE 3M 44#2.6mm, 進出線須穿 TF TUBE;
- E1, E2 為內銅, 接 0.3  $\phi$  \*1P 引線, E1 焊點朝下繞制, E2 焊點朝上繞制, 一般加工兩端, 從有線端起繞。

\*. 內銅箔加工方法示意圖: (0.025\*10mm 背膠, E1 焊點朝下, E2 焊點朝上, 背膠須反折 3.0mmMIN)



### Transformer specification

Report No. 187244

Construction / Winding diagram: For transformer type R53S10-1430

2.SCHEMATIC: (線路圖)



3.WINDING: (剖面圖)



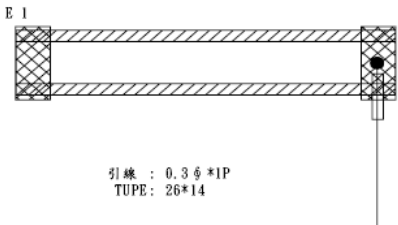
4.WINDING TABLE: (繞線結構)

Winding No (組別)	Margin Tape (槽牆膠帶)	PIN (腳位)	Wire & Wire Copper (線徑 X 股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	2.6mm/2.6mm	6 ~ 4	0.45 ϕ x 1P	20 TS	密繞	1 L	24*16/24*16
N 2	2.6mm/2.6mm	3 ~ 1	0.40 ϕ x 1P	8 TS	疏繞	1 L	24*14/24*16
E 1	2.6mm/2.6mm	1 ~	0.025x10mm	1.1 TS	背膠	2 L	26*14/0
N 3	2.6mm/2.6mm	12 ~ 7	0.55 ϕ x 2P	8 TS	密繞	1 L	17*16/17*16
N 4	2.6mm/2.6mm	11 ~ 8	0.55 ϕ x 2P	8 TS	密繞	2 L	17*16/17*16
E 2	2.6mm/2.6mm	1 ~	0.025x10mm	1.1 TS	背膠	1 L	26*12/0
N 5	2.6mm/2.6mm	4 ~ 5	0.45 ϕ x 1P	20 TS	密繞	3 L	24*16/24*16

NOTE:

1. 加 MARGIN TAPE 3M 44#2.6mm,進出線須穿 TF TUBE;
2. E1,E2 為內銅,接 0.3 ϕ \*1P 引線,E1 焊點朝下繞制, E2 焊點朝上繞制,一般加工兩端,從有線端起繞.

\*. 內銅箔加工方法示意圖: (0.025\*10mm 背膠,E1 焊點朝下,E2 焊點朝上,背膠須反折 3.0mmMIN)



引線 : 0.3 ϕ \*1P  
TUPE: 26\*14

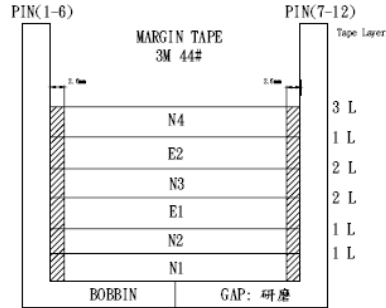
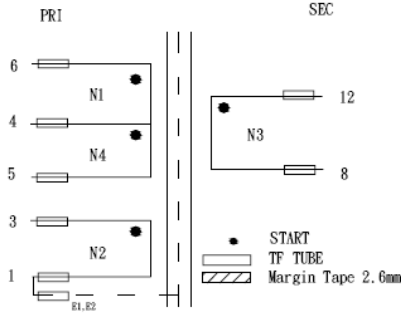


引線 : 0.3 ϕ \*1P  
TUPE: 26\*12

Construction / Winding diagram: For transformer type R53S10-1440

2.SCHEMATIC: (線路圖)

3.WINDING: (剖面圖)



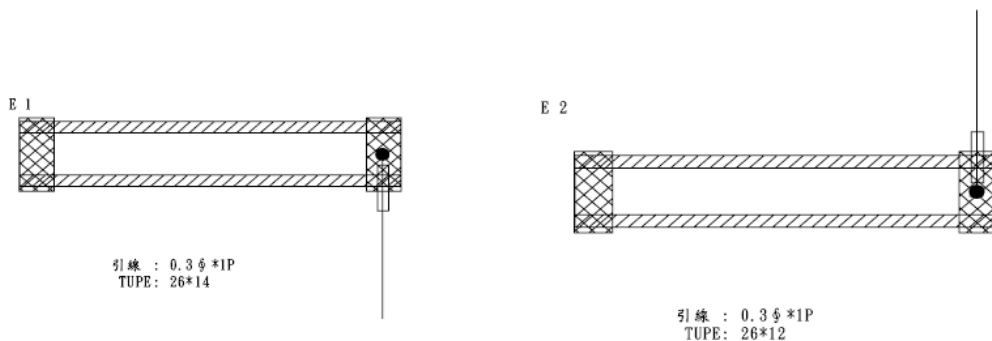
4.WINDING TABLE: (繞線結構)

Winding No (組別)	Margin Tape (槽牆膠帶)	PIN (腳位)	Wire & Wire Copper (線徑 X 股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	2.6mm/2.6mm	6 ~ 4	0.45 $\phi$ x 1P	20 TS	密繞	1 L	24*16/24*16
N 2	2.6mm/2.6mm	3 ~ 1	0.40 $\phi$ x 1P	8 TS	疏繞	1 L	24*14/24*16
E 1	2.6mm/2.6mm	1 ~	0.025x10mm	1.1 TS	背膠	2 L	26*14/0
N 3	2.6mm/2.6mm	12 ~ 8	0.50 $\phi$ x 2P	9 TS	密繞	2 L	17*16/17*16
E 2	2.6mm/2.6mm	1 ~	0.025x10mm	1.1 TS	背膠	1 L	26*12/0
N 4	2.6mm/2.6mm	4 ~ 5	0.45 $\phi$ x 1P	20 TS	密繞	3 L	24*16/24*16

NOTE:

1. 加 MARGIN TAPE 3M 44#2.6mm, 進出線須穿 TF TUBE;
2. E1,E2 為內銅, 接 0.3  $\phi$  \*1P 引線, E1 焊點朝下繞制, E2 焊點朝上繞制, 一般加工兩端, 從有線端起繞。

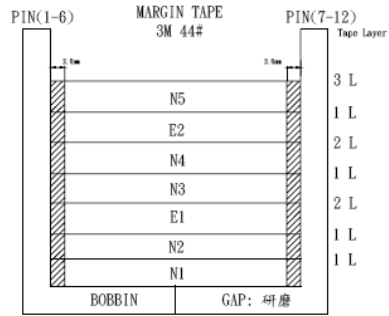
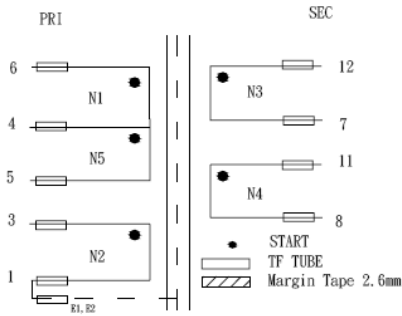
\*. 內銅箔加工方法示意圖: (0.025\*10mm 背膠, E1 焊點朝下, E2 焊點朝上, 背膠須反折 3.0mmMIN)



Construction / Winding diagram: For transformer type R53S10-1450

2.SCHEMATIC: (線路圖)

3.WINDING: (剖面圖)



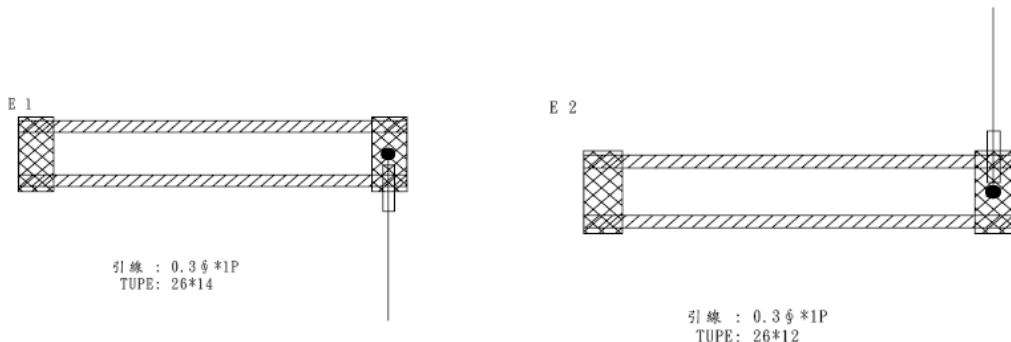
4.WINDING TABLE: (繞線結構)

Winding No (組別)	Margin Tape (槽牆膠帶)	PIN (腳位)	Wire & Wire Copper (線徑 X 股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	2.6mm/2.6mm	6 ~ 4	0.45 $\phi$ x 1P	20 TS	密繞	1 L	24*16/24*16
N 2	2.6mm/2.6mm	3 ~ 1	0.40 $\phi$ x 1P	8 TS	疏繞	1 L	24*14/24*16
E 1	2.6mm/2.6mm	1~~	0.025x10mm	1.1 TS	背膠	2 L	26*14/0
N 3	2.6mm/2.6mm	12 ~ 7	0.35 $\phi$ x 2P	12 TS	密繞	1 L	21*16/21*16
N 4	2.6mm/2.6mm	11 ~ 8	0.35 $\phi$ x 2P	12 TS	密繞	2 L	21*16/21*16
E 2	2.6mm/2.6mm	1~~	0.025x10mm	1.1 TS	背膠	1 L	26*12/0
N 5	2.6mm/2.6mm	4 ~ 5	0.45 $\phi$ x 1P	20 TS	密繞	3 L	24*16/24*16

NOTE:

1. 加 MARGIN TAPE 3M 44#2.6mm, 進出線須穿 TF TUBE;
2. E1,E2 為內銅, 接 0.3  $\phi$  \*1P 引線, E1 焊點朝下繞制, E2 焊點朝上繞制, 一般加工兩端, 從有線端起繞.

\*. 內銅箔加工方法示意圖: (0.025\*10\*背膠, E1 焊點朝下, E2 焊點朝上, 背膠須反折 3.0mmMIN)

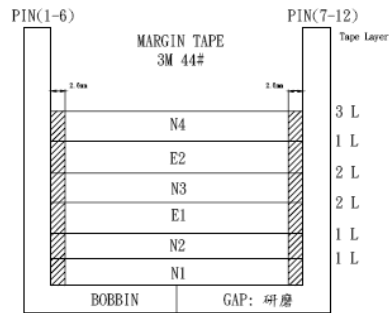
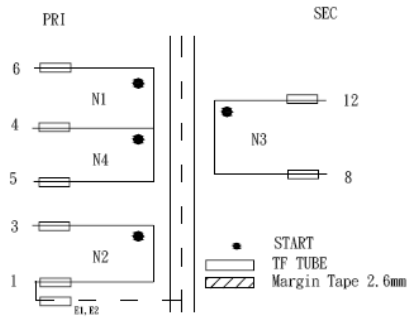




Construction / Winding diagram: For transformer type R53S10-1460

2.SCHEMATIC: (線路圖)

3.WINDING: (剖面圖)



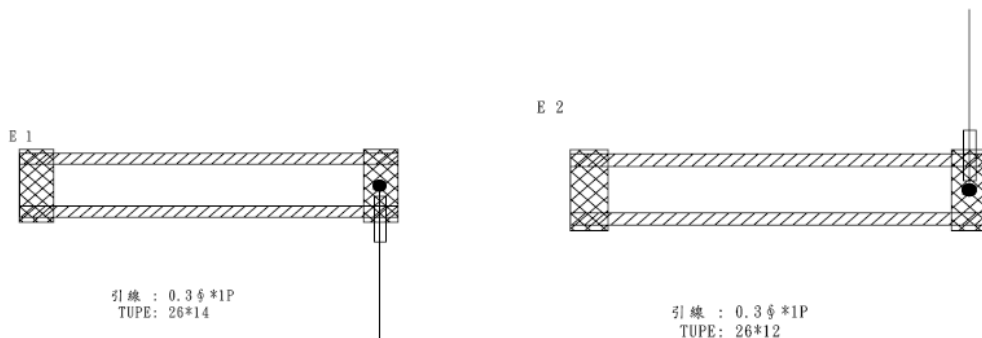
4.WINDING TABLE: (繞線結構)

Winding No (組別)	Margin Tape (槽牆膠帶)	PIN (腳位)	Wire & Wire Copper (線徑 X 股數)	Turns (圈數)	Winding Tape (繞線方式)	Tape Layer (膠帶層次)	Tube (套管)
N 1	2.6mm/2.6mm	6 ~ 4	0.45 $\phi$ x 1P	20 TS	密繞	1 L	24*16/24*16
N 2	2.6mm/2.6mm	3 ~ 1	0.40 $\phi$ x 1P	8 TS	疏繞	1 L	24*14/24*16
E 1	2.6mm/2.6mm	1~	0.025x10mm	1.1 TS	背膠	2 L	26*14/0
N 3	2.6mm/2.6mm	12 ~ 8	0.35 $\phi$ x 2P	24 TS	密繞	2 L	21*16/21*16
E 2	2.6mm/2.6mm	1~	0.025x10mm	1.1 TS	背膠	1 L	26*12/0
N 4	2.6mm/2.6mm	4 ~ 5	0.45 $\phi$ x 1P	20 TS	密繞	3 L	24*16/24*16

NOTE:

1. 加 MARGIN TAPE 3M 44#2.6mm,進出線須穿 TF TUBE;
2. E1,E2 為內銅,接 0.3  $\phi$  \*1P 引線,E1 焊點朝下繞制, E2 焊點朝上繞制,一般加工兩端,從有線端起繞.

\*. 內銅箔加工方法示意圖: (0.025\*10mm 背膠,E1 點朝下,E2 焊點朝上,背膠須反折 3.0mmMIN)



## Transformer specification

Report No. 187244

Construction / Winding diagram / Component part no: T101 material list of Newline

ITEM		MATERIAL	SUPPLIER OR MANUFACTURER	TEMP RATING
1	CORE	FERRITE CORES ER-28 (6H20) (PF-2) (NC-2H) (MZ4)	FDK CWGC NICERA HIMAC	
2	BOBBIN	PHENOLIC T375J 94V-0 ER-28 12PIN 板式 OR EQUIV	CHANG CHUN PLASTIC CO., LTD UL NO E59481(S)	150°C
3	WIRE	POLYURETHANE ENAMELLED COPPER WIRE (2UEW)	TA YA ELECTRIC WIRE & CABLE CO., LTD UL NO E84201 PACIFIC ELECTRIC WIRE & CABLE CO., LTD UL NO E84081 TAI-I ELECTRIC WIRE & CABLE CO.,LTD UL NO E85640 DIFA WIRE & CABLE CO LTD UL NO E177138	130°C
4	TAPE	POLYESTER FILM TAPE (YELLOW) 3M 1350F-1	3M COMPANY ELECTRICAL PRODUCTS DIV UL NO E17385	130°C
5	Margin TAPE	FIBER GLASS CLOTH 3M #44	3M COMPANY ELECTRICAL PRODUCTS DIV UL NO E17385	130°C
6	TUBE	TEFLON TUBE ZEUS TFE-TW-300V	ZEUS INDUSTRIAL PROUCTS INC UL NO E64007	200°C
7	VARNISH	V1380	P D GEORGE/VIKING E60614	130°C
8	COPPER	0.025*10mm(背膠)	S . M .W GERMANY	

## Transformer specification

Report No. 187244

Construction / Winding diagram / Component part no: T101 material list of Send Power

PART MATERIAL IDENTIFICATION						
No	ITEM	MATERIAL	CLASS	UL FILE NO.	MANUFACTURER	
1.	INSULATION SYSTEM	CLASS 130(B) VIKING B-2		E231049	DONGGUAN ZHANGMUTOU HONG CHAN ELECTRONICS CO.,LTD.	✓
2.	CORE	EER2828 MZ4			HIMAG	✓
		ER28/14/11 N87/N72			EPCOS	
		EER2828D PM7			ISU	
		ER28/14/11 3C90			PHILIPS	
3.	BOBBIN	T375J (SW-28P1)	150°C	E59481(S)	CHANG CHUN PLASTICS CO LTD	✓
4.	TAPE	POLYESTER CAT . NO. 35660	130°C	E50292	SYMBIO INC	✓
		NO.1350F-1 NO.1350F-2	130°C	E17385	3M COMPANY ELECTRICAL PRODUCTS DIV	
		CT,PZ	130°C	E165111	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD.	
5.	MARGIN TAPE	#44	130°C	E17385	3M COMPANY ELECTRICAL PRODUCTS DIV	✓
		#35661	130°C	E50292	SYMBIO INC	
		WF	130°C	E165111	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD.	
6.	WIRE	THS4-U130 MW75	130°C	E84201(S)	TA YA ELECTRIC WIRE & CABLE CO., LTD.	✓
		POLYURETHANE ENAMELLED COPPER DD-NYU MW28	130°C	E84081(S)	PACIFIC ELECTRIC WIRE & CABLE CO.,LTD.	
7.	VARNISH	V1380FC	130°C	E60614(M)	P D GEORGE/VIKING	✓
8.	TUBE	TEFLON (TFT)(TFL)	200°C	E156256(S)	GREAT HLODING INDUSTRIAL CO.,LTD.	✓
		UL811 821 F2	125°C	E48762	SUMITOMO ELECTRIC INDUSTRIES LTD.	

## Transformer specification

Report No. 187244

Construction / Winding diagram / Component part no: T101 material list of Tai Chang

NO	ITEM	MATERIAL	SUPPLIER OF THE MATERIAL
1	BOBBIN	PHENOLIC T-373J 94V-0 150°C	CHANG CHUN PLASTICS CO.,LTD E59481
2	CORE ER-28	FERRITE CORE PC40 ,3C90 JPP4,PL-7,P4	TDK CO, PHILIPS CO. A- CORE CO.SAMWHA CO.ACME CO.
3	WIRE	POLYURET HANE ENAMELLED WIRE TYPE MW28 130°C	PACIFIC ELEC. WIRE&CABLE CO.,LTD.E201757 PROSPERITY WIRE & CABLE CO.,LTD E196072
4	TAPE	POLYESTER TAPE NO.1350	3M CO.E17385
5	COPPER	THICKNESS 1mils*10 mm	MINCHALI CO.
6	MARGIN TAPE	NO.44 4mm	3M CO.E17385
7	TUBE	TFE-LW TFE-TW	ZEUS INDUSTRIAL PRODUCTS INC. E64007
8	VARNISH	NO. 468-2+ 200°C	RIPLEY RESIN ENGINEERING INC. E76561

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center"><b>ATTACHMENT TO TEST REPORT IEC 60950-1</b>  <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b>            Information technology equipment – Safety –            Part 1: General requirements</p>			
<b>Differences according to</b> ..... : EN 60950-1:2006/A11:2009/A1:2010/A12:2011			
<b>Attachment Form No.</b> ..... : EU_GD_IEC60950_1B_II			
<b>Attachment Originator</b> ..... : SGS Fimko Ltd			
<b>Master Attachment</b> ..... : Date 2011-08			
<b>Copyright © 2011 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b>			

EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS			
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IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		<b>P</b>
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2                      1.5.1                      Note 2 & 3    1.5.7.1                      Note 1.5.8 Note 2                      1.5.9.4                      Note                      1.7.2.1                      Note 4, 5 & 6 2.2.3 Note                      2.2.4                      Note                      2.3.2                      Note 2.3.2.1 Note 2                      2.3.4                      Note 2                      2.6.3.3                      Note 2 & 3 2.7.1 Note                      2.10.3.2                      Note 2                      2.10.5.13                      Note 3 3.2.1.1 Note                      3.2.4                      Note 3.                      2.5.1                      Note 2 4.3.6 Note 1 & 2                      4.7                      Note 4                      4.7.2.2                      Note 4.7.3.1 Note 2                      5.1.7.1                      Note 3 & 4                      5.3.7                      Note 1 6                      Note 2 & 5                      6.1.2.1                      Note 2                      6.1.2.2                      Note 6.2.2 Note                      6.2.2.1                      Note 2                      6.2.2.2                      Note 7.1                      Note 3                      7.2                      Note                      7.3                      Note 1 & 2 G.2.1 Note 2                      Annex H                      Note 2		<b>P</b>
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1                      Note                      6.1.2.1                      Note 2 6.2.2.1                      Note 2                      EE.3                      Note		<b>P</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>	No audio output.	N/A
(A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1 / EN 60950-1:2006</p> <p>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010</p>	Delete.	P
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	Considered.	P
1.7.2.1 (A1:2010)	<p>In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.</p>	Not a portable sound system.	P
1.7.2.1 (A12.2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete NOTE Z1 and the addition for Portable Sound System.</p> <p>Add the following clause and annex to the existing standard and amendments.</p>	Not personal music players.	P
	<b>Zx Protection against excessive sound pressure from personal music players</b>		N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.1 General</b></p> <p>This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.</p> <p>A personal music player is a portable equipment for personal use, that:</p> <ul style="list-style-type: none"> <li>– is designed to allow the user to listen to recorded or broadcast sound or video; and</li> <li>– primarily uses headphones or earphones that can be worn in or on or around the ears; and</li> <li>– allows the user to walk around while in use.</li> </ul> <p>NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> <li>– while the personal music player is connected to an external amplifier; or</li> <li>– while the headphones or earphones are not used.</li> </ul> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <ul style="list-style-type: none"> <li>– hearing aid equipment and professional equipment;</li> </ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p>	Not personal music players.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict


IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>– analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</p> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>	Not personal music players.	N/A
	<p><b>Zx.2 Equipment requirements</b></p> <p>No safety provision is required for equipment that complies with the following:</p> <p>– equipment provided as a package (personal music player with its listening device), where the acoustic output <math>L_{Aeq,T}</math> is <math>\leq 85</math> dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and</p> <p>– a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</p> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level <math>L_{Aeq,T}</math> is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</p>	Not personal music players.	N/A



IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <p>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</p> <p>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic</p>	Not personal music players.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.3 Warning</b> The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>– the symbol of Figure 1 with a minimum height of 5 mm; and</li> <li>– the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.”</li> </ul> <div style="text-align: center;">  </div> <p><b>Figure 1 – Warning label (IEC 60417-6044)</b></p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>	Not personal music players.	N/A
	<p><b>Zx.4 Requirements for listening devices (headphones and earphones)</b></p>		N/A
	<p><b>Zx.4.1 Wired listening devices with analogue input</b> With 94 dBA sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>	Not personal music players.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.4.2 Wired listening devices with digital input</b></p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>	Not personal music players.	N/A
	<p><b>Zx.4.3 Wireless listening devices</b></p> <p>In wireless mode:</p> <ul style="list-style-type: none"> <li>– with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>– respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>– with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</li> </ul> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>	Not personal music players.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p><b>Zx.5 Measurement methods</b> Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>	Not personal music players.	N/A
2.7.1	<p>Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p>	<p>The equipment is provided with the fuse and complied with a). For the appliance inlet and the cord set, protection is dependent on the building installation, see main test report.</p>	P
	<p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.2	This subclause has been declared 'void'.	Considered.	
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	The equipment is not intended for permanent connection to the mains	N/A
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F";  "60227 IEC 52" by "H03 VV-F or H03 VVH2-F";  "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:  Up to and including 6   0,75<sup>a)</sup>    Over 6 up to and including 10   (0,75)<sup>b)</sup> 1,0    Over 10 up to and including 16   (1,0)<sup>c)</sup>  1,5  </p> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition<sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	The power supply cord is not provided with the equipment; refer to Summary of Testing in main test report.	N/A
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:  Over 10 up to and including 16   1,5 to 2,5    1,5 to 4  </p> <p>Delete the fifth line: conductor sizes for 13 to 16 A</p>	The power supply cord is not provided with the equipment; refer to Summary of Testing in main test report.	N/A
4.3.13.6 (A1:2010)	<p>Replace the existing NOTE by the following:  NOTE Z1 Attention is drawn to:  1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and  2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).</p>	Not applicable.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.	Not applicable.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Annex H	<p>Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 <math>\mu</math>Sv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.</p>	The unit does not emit X-ray radiation.	N/A
Bibliography	Additional EN standards.		—

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>	—
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ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In <b>Denmark</b> , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report.	N/A
1.2.13.14	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.	Not connected to cable distribution system.	N/A
1.5.7.1	In <b>Finland, Norway</b> and <b>Sweden</b> , resistors bridging BASIC INSULATION IN CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.	No such part.	N/A
1.5.8	In <b>Norway</b> , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Considered.	P
1.5.9.4	In <b>Finland, Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No such VDR used.	N/A

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	<p>In <b>Finland, Norway and Sweden</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In <b>Norway and Sweden</b>, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard.</p> <p>Connection to a cable distribution system has</p>	<p>N, S and FI required marking for a unit which must be connected to protective earth only.</p> <p>Finnish warning text is not provided on the rating label, therefore, must be considered when enter the market. The Norwegian text is provided, it also accepted in Sweden.</p>	—

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkøp utstyr – og er tilkøp et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkøp av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		
1.7.5	<p>In <b>Denmark</b>, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>	No socket-outlets provided	N/A
2.2.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A
2.3.2	In <b>Finland, Norway and Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A
2.3.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	N/A



IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.	Considered	<b>P</b>
2.7.1	In the <b>United Kingdom</b> , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	Not Direct Plug-In equipment	<b>P</b>
2.10.5.13	In <b>Finland, Norway</b> and <b>Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV circuits	<b>N/A</b>
3.2.1.1	In <b>Switzerland</b> , supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15      3P+N+PE 250/400 V, 10 A	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE .. 250 V, 16 A</p>		
3.2.1.1	<p>In <b>Denmark</b>, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	<p>In <b>Spain</b>, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>
3.2.1.1	<p>In the <b>United Kingdom</b>, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In <b>Ireland</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>
3.2.5.1	In the <b>United Kingdom</b> , a power supply cord with conductor of 1,25 mm <sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>
3.3.4	In the <b>United Kingdom</b> , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: <ul style="list-style-type: none"> <li>• 1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> nominal cross-sectional area.</li> </ul>	The power supply cord is not provided with the equipment, refer to Summary of Testing in main test report	<b>N/A</b>
4.3.6	In the <b>United Kingdom</b> , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	Not Direct plug-In equipment	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In <b>Ireland</b> , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	Not Direct plug-In equipment	<b>N/A</b>
5.1.7.1	In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> <li>is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>	Not applicable.	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	<p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of</li> </ul> <p>2.10.10 shall be performed using 1,5 kV), and</p> <ul style="list-style-type: none"> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul>	No TNV circuits	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14:</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</li> </ul>		
6.1.2.2	<p>In <b>Finland, Norway and Sweden</b>, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>	No TNV circuits	<b>N/A</b>

IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	In <b>Finland, Norway</b> and <b>Sweden</b> , for requirements see 6.1.2.1 and 6.1.2.2 of this annex.  The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	Not connected to a cable distribution system.	<b>N/A</b>
7.3	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.	Not connected to a cable distribution system.	<b>N/A</b>
7.3	In <b>Norway</b> , for installation conditions see EN 60728-11:2005.	Not connected to a cable distribution system.	<b>N/A</b>





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IEC 60950-1:2005 (2 <sup>nd</sup> Edition): Am1: 2009			
Clause	Requirement + Test	Result - Remark	Verdict
<b>National Differences for Korea</b>			
1.5.101	Addition Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305 and 8305).	Refer to Summary Of Testing in main test report.	<b>N/A</b>
8	Addition EMC The apparatus shall comply with the relevant CISPR standards.	Must be considered before marketed in Korea.	—


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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
<b>National Differences for Canada</b>			<b>P</b>
Canada and the United States of America have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950-1/UL60950-1, Second Edition, which is based on IEC 60950-1, Second Edition. This bi-national standard should be consulted for further details on the national conditions and differences summarized below.			
<b>SPECIAL NATIONAL CONDITIONS</b>			
The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations.			
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Considered.	<b>P</b>
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A .....	Considered.	<b>P</b>
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the CEC/NEC .....	No interconnecting cables.	<b>N/A</b>
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC/NEC are required to have special construction features and identification markings.	No interconnecting cables.	<b>N/A</b>
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Only one phase conductor.	<b>N/A</b>
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."	No plug provided.	<b>N/A</b>
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and "Class 2" or equivalent. Marking shall be located adjacent to the terminals and shall be visible during wiring.	Not applicable.	<b>N/A</b>

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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No such fuse used.	N/A
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.  Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No standard supply outlets, receptacles, lampholders or such transformers.	N/A
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	The equipment is provided with an appliance inlet.	N/A
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.	The equipment is not for connection to a DC mains supply.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	The equipment is not permanently connected to the mains.	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length.  ..... Flexible power supply cords are required to be compatible with Tables 11 and 12 of the CEC and Article 400 of the NEC.	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected to the mains.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	The equipment is provided with an appliance inlet.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).	The equipment is provided with an appliance inlet.	N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for Canadian/US wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	No permanent wiring. The equipment is provided with an appliance inlet.	N/A

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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V, or is rated more than 1/3 hp (locked rotor current over 43 A).	No motors in the equipment.	N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.	No switch used.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery in the equipment.	N/A
	Battery system: ..... When power-off is activated: .....		—
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquids within the equipment.	N/A
	Flammable liquid material: ..... Flash point: ..... Boiling point: ..... Container material: ..... Storage container size: .....		—
4.3.13.5	Equipment with lasers is required to meet the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	No laser, LED is diffusive type.	P
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	The equipment has no combustible area greater than 27 cubic feet.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	The equipment has no combustible material greater than 0.9m <sup>2</sup> or single dimension greater than 1.8m.	N/A
Annex H	Equipment that produces ionizing radiation is required to comply with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	The equipment does not produce ionizing radiation.	N/A



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
<b>OTHER DIFFERENCES</b>			
The following key national differences are based on requirements other than national regulatory requirements.			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cutoffs, thermostats, (multi-layer) transformer winding wire, transient voltage surge suppressors, tubing, wire connectors, and wire and cables.	Critical components are IEC certified. See list of critical components in main CB report (§1.5.1). There may be additional requirements for components in Canada.	<b>P</b>
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply. This maximum operating voltage shall include consideration of the battery charging "float voltage" associated with the intended supply system, regardless of the marked power rating of the equipment.	No TNV circuitry.	<b>N/A</b>
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V <sub>peak</sub> or 60 V <sub>d.c.</sub> , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuitry.	<b>N/A</b>
2.3.2.1	In the event of a single fault between TNV and SELV circuits, SELV Circuits and accessible conductive parts comply with the North American limits of 2.2.3.	No TNV circuitry.	<b>N/A</b>



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Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) subjected to the additional limited short circuit test conditions specified, if required.	Class I equipment with Class II construction throughout, see main test report.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more are provided with suitable enclosure to reduce the risk of injury due to the implosion of the CRT.	No CRTs in the equipment.	N/A
	Projected area of opening ..... : Minor dimension of projected area ..... :		—
4.2.11	For equipment intended for mounting on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation, service and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails.	Not applicable for this equipment.	N/A
4.3.2	Equipment with handles is required to comply with special loading tests.	The equipment has no handles.	N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV circuitry.	N/A
	Ringing ports provided: ..... Simulation provided to: ..... Measured total touch current : .....		—
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are to be overloaded.	Considered.	P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary.	No testing is interrupted by the opening of a component.	N/A
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV circuitry.	N/A
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuitry.	N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	Not applicable.	N/A



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
Annex NAF	Document (paper) shredders likely to be used in a home or home office (Pluggable Equipment Type A plug configuration) are required to comply with additional requirements, including markings/instructions, protection against inadvertent reactivation of a safety interlock, disconnection from the mains supply (via provision of an isolating switch), and protection against operator access (accessibility determined via new accessibility probe & probe/wedge).	Not applicable.	<b>N/A</b>



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict

Annex NAF Household/home office Document shredders			N/A
NAF1.7	Markings and Instructions	The equipment is not a document shredder.	N/A
NAF 1.7.15	Symbols alerting the user to the following considerations are provided adjacent to the document feed opening. These symbols are explained in the instructions:		N/A
	Product is not intended for use by children (product is not a toy) .....		N/A
	Avoid touching the document feed opening with hands .....		N/A
	Avoid clothing touching the document feed opening .....		N/A
	Keep aerosol products away (applicable for product with brush motor only) .....		N/A
	The  (ISO 7000-0434) symbol to alert user to important operating, maintenance and/or servicing instructions and the explanation of above symbols		N/A
	Marking is permanent, comprehensible and easily discernible on the equipment.		N/A
NAF 2.8.3	Safety interlock can not be activated by articulated accessibility probe (NAF.1)		N/A
NAF 3.4	Isolation switch complying with 3.4.2 is provided to disconnect power to hazardous moving parts		N/A
	On/off marking is provided for two position switch..:		N/A
	Off marking for multi-position switch .....		N/A
NAF 4.4	Protection against hazardous moving parts		N/A
	Accessibility probe (Fig NAF.1) is inserted without force into each opening and did not contact hazardous moving parts		N/A
	Operator accessible guards are removed and Accessibility wedge is inserted into each opening according without contacting mechanical hazards:		N/A
	Strip-cut (45N): .....		—
	Cross-cut (90N).....		—





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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
<b>USA - Differences to IEC 60950-1:2005, Second Edition</b>			<b>P</b>
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70	Considered.	<b>P</b>
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.	Considered.	<b>P</b>
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.	Considered.	<b>P</b>
1.1.2	Equipment intended for outdoor use	Not outdoor use equipment.	<b>N/A</b>
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A.	Considered.	<b>P</b>
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of UL component standards in Annex P.1.	Considered, see appended table in the main test report.	<b>P</b>
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of UL component standards	Considered, see appended table in the main test report.	<b>P</b>
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.	Considered.	<b>P</b>
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.	Considered.	<b>P</b>
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC	External interconnecting flexible cable (sec. O/P cable) is not longer than 3.05m.	<b>N/A</b>
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	No detachable external interconnecting cables provided.	<b>N/A</b>
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.	No such parts used.	<b>N/A</b>
1.5.5	Telephone line and extension cords and the like comply with UL 1863	No such parts used.	<b>N/A</b>
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system subjected to special circuit classification requirements (e.g., TNV-2)	No TNV circuitry.	<b>N/A</b>
1.6.1.2	Earthing of d.c. powered equipment provided	No connect to DC power distribution system.	<b>N/A</b>
1.7	Lamp replacement information indicated on	No lamp provided.	<b>N/A</b>



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
	lampholder in operator access area		
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	Single phase only.	N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions	No plug provided.	N/A
1.7.6	Fuse replacement marking for operator accessible fuses	No operator accessible fuses.	N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor	Appliance inlet provided, marking of the protective earthing terminal is not applicable.	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.	No connectors and field wiring terminal for external Class 2 or Class 3 circuits.	N/A
1.7.7	Marking located adjacent to terminals and visible during wiring	No such terminal used.	N/A
2.1.1.1	Bare TNV conductive parts protected by a cover are exempt if instructions include directions for disconnection of TNV prior to removal of the cover	No TNV circuitry.	N/A
2.3.1.b	Other telecommunication signaling systems than described in 2.3.1(b) are subject to M.4.	No TNV circuitry.	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 max. current limit through a resistor $\geq 2000$ Ohm with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions	No TNV circuitry.	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.	No TNV circuitry.	N/A
2.3.2.1	For a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.	No TNV circuitry.	N/A
2.3.2.4	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications if subject to special construction requirements and testing	No TNV circuitry.	N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting according to the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable	No such component provided.	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	No receptacles for output a.c. power connectors.	N/A



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
	conductor suitably bonded to earth.		
2.6.3.3	For Pluggable Equipment Type A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A	Class I equipment with Class II construction throughout, see main test report.	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.	Class I equipment with Class II construction throughout, see main test report.	N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US	No field wiring terminal provided.	N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment	No such parts.	N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC	No such parts.	N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring	No such parts.	N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards	No such parts.	N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.	No such parts.	N/A
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.	No such parts.	N/A
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent & short circuit protection	Considered.	P
3.1.1	All interconnecting cables protected against overcurrent and short circuit.	Considered.	P
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC	The equipment is provided with an appliance inlet.	N/A
3.2.1	Permitted use for flexible cords and plugs.	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.	Class I equipment.	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements	The equipment is not for connection to a DC. mains supply.	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	The equipment is not for connection to a DC. mains supply.	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.	The equipment is not for connection to a DC mains supply.	N/A
3.2.1.2	Markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to the equipment earthing conductor	The equipment is not for connection to a DC. mains supply.	N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the equipment earthing conductor	The equipment is not for connection to a DC. mains supply.	N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.	The equipment is not for connection to a DC. mains supply.	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	Not permanently connected equipment.	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 150 mm in length for connection of field installed wiring.	Not permanently connected equipment.	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.	Not permanently connected equipment.	N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.	Not permanently connected equipment.	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.	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
3.2.5	Conductors in power supply cords sized per NEC	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.	No power supply cord is	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
		supplied.	
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.	Sec. output cable is supplied by a limited power source.	N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.	The equipment is provided with an appliance inlet.	N/A
3.2.9	Equipment 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 when wiring is protected from abuse.	Equipment not intended for installation in RAL.	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.	No field wiring terminal provided.	N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than specified in 3.3 if wiring is reliably separated	Not applicable.	N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means	3.3.1 – 3.3.6; Appliance inlet provided.	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 US wire sizes (gauge)		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 for the terminals used		N/A
3.3.6	Aluminum conductors not permitted for connection 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.	No motors in the equipment.	N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".	No such switch used.	N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 minutes provided with battery disconnect means	No battery in the equipment.	N/A



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Clause	Requirement + Test	Result - Remark	Verdict
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.	No CRTs in the equipment.	N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.	No high-pressure lamp provided.	N/A
4.2.11	For equipment mounted on racks and provided with slide/rails allowing the equipment to slide away from the rack for installation and maintenance, additional construction, performance and marking requirements are applicable to determine the adequacy of the slide/rails	Not applicable.	N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg	The equipment has no handles.	N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310	Not intended to plug directly into a wall socket-outlet.	N/A
4.3.12	The max. quantity of flammable liquid stored in equipment per ANSI/NFPA 30 (Table NAE.6)	No flammable liquids within the equipment.	N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.	No flammable liquids within the equipment.	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	The equipment does not generate ionizing radiation.	N/A
4.3.13.5	Requirements contained in the applicable national codes apply to lasers (21 CFR 1040).	No laser, LED is diffusive type.	P
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.	The equipment has no combustible area greater than 0.76 m <sup>3</sup> .	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 (according to UL 2043). Equipment for installation in space used for environmental air, described in Sec. 300-22(c) of the NEC, provided with instructions indicating suitability for installation	Equipment not used in environmental air space.	N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.9 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.	The equipment has neither combustible area greater than 0.9 m <sup>2</sup> nor a single dimension greater than 1.8 m.	N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	Considered.	P



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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.	Not connected to a telecommunication network.	N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.	Not connected to a telecommunication network.	N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.	Considered.	P
5.3.7	Tests interrupted by opening of a component repeated two additional times.	No test interrupted by opening of component.	N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.	No test interrupted by opening of wire or trace.	N/A
6	Specialized instructions for telephones that may be connected to a telecommunications network	No TNV circuitry.	N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.	No TNV circuitry.	N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.	No TNV circuitry.	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.	No TNV circuitry.	N/A
6.4	Additional requirements for equipment connected to a telecommunication network using cable subject to overvoltage from power line failures	No TNV circuitry.	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.	No TNV circuitry.	N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.	Not cable distribution systems.	N/A
H	Ionizing radiation measurements made under single fault conditions according to 21 CFR 1020	The equipment does not produce ionizing radiation.	N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.	No applicable.	N/A
M.4	Special requirements for message waiting and similar telecommunications signals.	Not applicable.	N/A
NAC	Equipment for use with a generic secondary protector marked with suitable instructions.	Not applicable.	N/A
NAC	Equipment marked with suitable instructions if for use with a specific primary or secondary protector	Not applicable.	N/A



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IEC 60950-1:2005			
Clause	Requirement + Test	Result - Remark	Verdict
NAD	Acoustic pressure from an ear piece for short and long duration disturbances	Not applicable.	N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements	Not applicable.	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		N/A
NAF.3.4	Provided with an isolating switch complying with 3.4.2, including 3 mm contact gap, with appropriate markings associated with the switch.		N/A
NAF.4.4	Hazardous moving parts are not accessible, as determined using the articulated accessibility probe and the accessibility probe/wedge		N/A





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IEC60950_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

**ATTACHMENT TO TEST REPORT IEC 60950-1  
GERMANY NATIONAL DIFFERENCES**

Information technology equipment – Safety –

Part 1: General requirements

**Differences according to.....:** VDE 0805-1:2011-01

Annex ZC, 1.7.2.1	According to GPSG, section 2, clause 4: If certain rules on the use, supplementation or maintenance of an item of technical work equipment or ready-to-use commodity must be observed in order to guarantee safety and health, instructions for use in German must be supplied when it is brought into circulation.	Must be considered before marketed in Germany.	—
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IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict

National Differences for AUSTRALIA / NEW ZEALAND			
<b>ZZ.1 Introduction</b>			
This Annex sets out variations between this Standard and IEC 60950-1:2001. These variations indicate national variations for purposes of the IECEE CB Scheme and will be published in the IECEE CB Bulletin. These variations are indicated within the body of the Standard.			
<b>ZZ.2 Variations</b>			
The variations are as follows:			
1.2	Between the definitions for 'Person, service' and 'Range, rated frequency' <i>insert</i> the following: <b>POTENTIAL IGNITION SOURCE</b> 1.2.12.201	Considered.	P
1.2.12.15	After the definition 1.2.12.15, <i>add</i> the following: <b>1.2.12.201 POTENTIAL IGNITION SOURCE:</b> Possible fault which can start a fire if the open- circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in <b>CONDUCTIVE PATTERNS</b> on <b>PRINTED BOARDS</b> . NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a POTENTIAL IGNITION SOURCE. NOTE 202: This definition is from AS/NZS 60065:2003.	Considered.	P
1.5.1	<i>Add</i> the following to the end of first paragraph: 'or the relevant Australian/New Zealand Standard'.	Considered.	P
1.5.2	<i>Add</i> the following to the end of first and third dash items: 'or the relevant Australian/New Zealand Standard'.	Considered.	P
2.1	<i>Delete</i> the Note	Considered.	P
3.2.3	<i>Delete</i> Note 2	The equipment is not intended for permanent connection to the mains.	N/A



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IEC 60950-1:2001																				
Clause	Requirement + Test	Result - Remark	Verdict																	
3.2.5.1	<p>Modify Table 3B as follows:</p> <p>Delete the first four rows and replace with</p> <table border="1"> <thead> <tr> <th rowspan="2">RATED CURRENT OF EQUIPMENT A</th> <th colspan="2">Minimum conductor sizes</th> </tr> <tr> <th>Nominal cross-sectional area mm<sup>2</sup></th> <th>AWG or kcmil [cross-sectional area in mm<sup>2</sup>] see note 2</th> </tr> </thead> <tbody> <tr> <td>Over 0.2 up to and including 3</td> <td>0,5 <sup>1)</sup></td> <td>18 [0,8]</td> </tr> <tr> <td>Over 3 up to and including 7.5</td> <td>0,75</td> <td>16 [1,3]</td> </tr> <tr> <td>Over 7.5 up to and including 10</td> <td>(0,75)<sup>2)</sup></td> <td>16 [1,3]</td> </tr> <tr> <td>Over 10 up to and including 16</td> <td>(1,0 )<sup>3)</sup></td> <td>14 [2]</td> </tr> </tbody> </table> <p>Replace footnote 1) with the following:</p> <p><sup>1)</sup> This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm<sup>2</sup> three-core supply flexible cords are not permitted; see AS/NZS 3191).</p> <p>Delete Note 1.</p>	RATED CURRENT OF EQUIPMENT A	Minimum conductor sizes		Nominal cross-sectional area mm <sup>2</sup>	AWG or kcmil [cross-sectional area in mm <sup>2</sup> ] see note 2	Over 0.2 up to and including 3	0,5 <sup>1)</sup>	18 [0,8]	Over 3 up to and including 7.5	0,75	16 [1,3]	Over 7.5 up to and including 10	(0,75) <sup>2)</sup>	16 [1,3]	Over 10 up to and including 16	(1,0 ) <sup>3)</sup>	14 [2]	Refer to Summary Of Testing in main test report.	N/A
RATED CURRENT OF EQUIPMENT A	Minimum conductor sizes																			
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Over 10 up to and including 16	(1,0 ) <sup>3)</sup>	14 [2]																		
4.3.6	<p>Replace paragraph three with:</p> <p>Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>	Not intended to plug directly into a wall socket-outlet.	N/A																	
4.3.13.5	<p>Add the following to the end of first paragraph:</p> <p>'or AS/NZS 2211.1'.</p>	No laser, LED is diffusive type.	P																	
4.7	<p>Add the following paragraph:</p> <p>For alternative tests refer to Clause 4.7.201.</p>	Refer to below.	P																	



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Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p>Add the following after Clause 4.7.3.6:</p> <p><b>4.7.201 Resistance to fire – Alternative tests</b></p> <p><b>4.7.201.1 General</b></p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following:</p> <p>a) Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NZS 4695.707 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> <li>- small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings;</li> <li>- small electrical components, such as capacitors with a volume not exceeding 1750mm<sup>3</sup>, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category FV-1, or better, according to AS/NZS 4695.707.</li> </ul> <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another.</p> <p>Compliance shall be checked by the tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5.</p> <p>For the base material of printed boards, compliance shall be checked by the test of 4.7.201.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p> <p><b>4.7.201.2 Testing of non-metallic materials</b></p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p>	<p>All materials have suitable flame class, no testing required.</p>	<b>P</b>



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Clause	Requirement + Test	Result - Remark	Verdict								
4.7.201	<p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</p> <p><b>4.7.201.3 Testing of insulating materials</b></p> <p>Parts of insulating material supporting <b>POTENTIAL IGNITION SOURCES</b> shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C</p> <p>The test shall also be carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections.</p> <p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested.</p> <p>The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications:</p> <table border="1"> <thead> <tr> <th>Clause of AS/NZS 4695.2.2</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>5 Severities</td> <td> <i>Replace with:</i>            The duration of application of the test flame shall be 30 s ± 1 s.         </td> </tr> <tr> <td>8 Test procedure</td> <td>           8.2 <i>Replace the first sentence with:</i>            The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.             8.4 The first paragraph does not apply.   <i>Addition:</i>            If possible, the flame shall be applied at least 10 mm from a corner.             8.5 <i>Replace with:</i>            The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.         </td> </tr> <tr> <td>10 Evaluation of test results</td> <td> <i>Replace with:</i>            The duration of burning (<math>t_b</math>) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.         </td> </tr> </tbody> </table>	Clause of AS/NZS 4695.2.2	Change	5 Severities	<i>Replace with:</i> The duration of application of the test flame shall be 30 s ± 1 s.	8 Test procedure	8.2 <i>Replace the first sentence with:</i> The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.  8.4 The first paragraph does not apply.  <i>Addition:</i> If possible, the flame shall be applied at least 10 mm from a corner.  8.5 <i>Replace with:</i> The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.	10 Evaluation of test results	<i>Replace with:</i> The duration of burning ( $t_b$ ) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.	<p>All materials have suitable flame class, no testing required.</p>	P
Clause of AS/NZS 4695.2.2	Change										
5 Severities	<i>Replace with:</i> The duration of application of the test flame shall be 30 s ± 1 s.										
8 Test procedure	8.2 <i>Replace the first sentence with:</i> The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.  8.4 The first paragraph does not apply.  <i>Addition:</i> If possible, the flame shall be applied at least 10 mm from a corner.  8.5 <i>Replace with:</i> The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test.										
10 Evaluation of test results	<i>Replace with:</i> The duration of burning ( $t_b$ ) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.										

ing to last modification date 2007-05-29 in CB Bulletin



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Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.</p> <p><b>4.7.201.4 Testing in the event of non-extinguishing material</b></p> <p>If the parts, other than enclosures, do not withstand the glow-wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 4.7.201 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>	<p>All materials have suitable flame class, no testing required.</p>	P



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Clause	Requirement + Test	Result - Remark	Verdict
4.7.201	<p><b>4.7.201.5 Testing of printed boards</b></p> <p>The base material of printed boards shall be subjected to the needle-flame test of Clause 4.7.201.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a <b>POTENTIAL IGNITION SOURCE</b>.</p> <p>The test is not carried out if the –</p> <ul style="list-style-type: none"> <li>- Printed board does not carry any <b>POTENTIAL IGNITION SOURCE</b>;</li> <li>- Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0 according to AS/NZS 4695.707, or made of metal, having openings only for connecting wires which fill the openings completely; or</li> <li>- Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category FV-0 according to AS/NZS 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely.</li> </ul> <p>Compliance shall be determined using the smallest thickness of the material.</p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power from more than 2 min when the circuit supplied is disconnected.</p>	All materials have suitable flame class, no testing required.	<b>P</b>



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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	<p>Add the symbol [NZ] in the right hand margin beside the first paragraph.</p> <p>Add the following after the first paragraph:</p> <p>In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 shall be checked by the tests of both 6.2.2.1 and 6.2.2.2.</p> <p>Delete the Note.</p>	No TNV circuits in the equipment.	N/A
6.2.2.1	<p>Add the symbol [NZ] in the right hand margin beside the first paragraph including Note 1.</p> <p>Delete the Note 2.</p> <p>Add the following after the first paragraph:</p> <p>In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, U<sub>c</sub>, is:</p> <ul style="list-style-type: none"> <li>- for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and</li> <li>- for 6.2.1 b) and 6.2.1 c): 1.5 kV.</li> </ul> <p>NOTE 201: The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines.</p> <p>NOTE 202: The 2.5 kV for 6.2.1 a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.</p>	No TNV circuits in the equipment.	N/A





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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.2	<p>Add the symbol [NZ] in the right hand margin beside the second paragraph.</p> <p>Delete the Note.</p> <p>Add the following after the second paragraph:</p> <p>In Australia (this variation does not apply in New Zealand), the a.c. test voltage is:</p> <p>- for 6.2.1 a): 3 kV; and</p> <p>- for 6.2.1 b) and 6.2.1 c): 1.5 kV.</p> <p>NOTE 201: Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>NOTE 202: The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>	No TNV circuits in the equipment.	N/A
Annex P	<p>Add the following Normative References to Annex P:</p> <p>IEC 60065, <i>Audio, Video and similar electronic apparatus – Safety requirements</i></p> <p>AS/NZS 3191, <i>Approval and test specification – Electric flexible cords</i></p> <p>AS/NZS 3112, <i>Approval and test specification – Plugs and socket-outlets</i></p> <p>AS/NZS 4695.707, <i>Fire hazard testing of electrotechnical products – Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source</i></p>	Considered.	P
Index	<p>Between the entries 'polyimide insulating material' and 'powder' insert the following:</p> <p>POTENTIAL IGNITION SOURCE <b>1.12.201</b>, 4.7.201.3, 4.7.201.5</p>	Considered.	P



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Clause	Requirement + Test	Result - Remark	Verdict

**ATTACHMENT: SINGAPORE DIFFERENCES  
to IEC 60950-1 (ed.1)**

No	Item	Requirement	Result - Remark	Verdict
<p>The following is the national differences in accordance with safety authority website <a href="http://www.safety.org.sg/">www.safety.org.sg/</a> , ref. Singapore Consumer Protection (Safety Requirements) - Information booklet - chapter 7 (page 23 - 26). Based on information by Singapore NCB – PSB Corp.</p>				
<p><b>7 SAFETY AUTHORITY'S REQUIREMENTS</b></p> <p>The Safety Authority monitors the safety of the controlled goods sold in Singapore by investigating all complaints, incidents and accidents reported to the authority. Experiences gained are translated into the Safety Authority's Requirements. These requirements are to be fulfilled in addition to the applicable safety standards.</p>				
<b>Applicable to all electrical products</b>				
2	All appliances	All appliances must be tested to 230 VAC.	Considered	P
3	Voltage selector (voltage mismatch test)	Appliance fitted with voltage selector shall be tested as follows:  Connect appliance to 230 VAC mains with voltage selector switch to settings not suitable for operation at 230 VAC.	Not used	N/A
4	Tropical condition test	All appliances (with tropical test requirements in applicable Standards) shall comply with the tropical condition test as stated in the relevant IEC Standards.	Test performed, see main test report.	P
5	Class I appliances (3-pin mains plug)	All Class I appliances must be fitted with 3-pin mains plugs complied with SS 145/SS 472 that are registered with the Safety Authority.	Refer to Summary Of Testing in main test report.	N/A
6	Class II appliances (mains plug)	a) All Class II appliances must be fitted with 2-pin mains plug (Appendix W) complied with IEC 83: 1975 (Standard C5, Version II) or EN 50075: 1991.  b) Class II appliances that are fitted with 3-pin mains plugs must use plugs that are complied with SS 145 and registered with the Safety Authority.	Class I equipment.	N/A
7	Appliances rated $\geq 3$ kW or connected to fixed wiring	Electric appliance $\geq 3$ kW must be connected to fixed wiring. All connection to fixed wiring must be in accordance with Code of Practice CP5.	Rating is <3kW	N/A



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Clause	Requirement + Test	Result - Remark	Verdict

No	Item	Requirement	Result - Remark	Verdict
8	Detachable power cord set (consists of mains plug, mains cord and appliance connector)	Detachable power cord set must be listed in the test report critical component list.	Refer to Summary Of Testing in main test report.	N/A
9	Circuit diagrams	Circuit diagrams must be indicated with component's values for products tested to IEC 60065 and IEC 60950.	Must be considered when marketing in Singapore.	—
10	Circuit diagrams of electronic modules in electrical appliances	Circuit diagrams of the electronic modules in the electrical appliances must be provided.	Must be considered when marketing in Singapore.	—
11	Controlled goods likely to be treated as toy by children	Controlled goods, having an enclosure, which is shaped and decorated so that it is likely to be treated as a toy by children, shall not be accepted for certification and registration.	The shape and function are not considered as toy.	N/A
<b>Applicable to AC adaptor</b>				
13	3-pin AC adaptor	Test report showing that the 3-pin complied with sub-clauses 12.1 & 12.3 of SS 246 must be submitted.	Not a Direct Plug-in Equipment.	N/A
14	2-pin AC adaptor	The 2-pin (Appendix W) shall comply with IEC 83: 1975 (Standard C5, Version II) or EN 50075.	Class I equipment.	N/A
15	Detachable power supply cord set not supplied by Registered Supplier	Registered Supplier who is not supplying the detachable power supply cord set together with the AC Adaptor must provide written instruction to its customer on the type of approved detachable power cord set to use.	No cord-set supplied.	N/A
<b>Applicable to computer products</b>				
16	CD/DVD ROM (used in personal computer)	Test certificate showing that CD/DVD ROM has complied with IEC 825 must be provided.	Not used.	N/A
17	Modem Card (used in personal computer)	Modem card incorporated in the personal computer must be tested at set level (sub-clauses 5.1 & 6 of IEC 60950) or at component level.	Not used.	N/A



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Clause	Requirement + Test	Result - Remark	Verdict

Applicable to plasma/LCD display monitor				
35	Plasma/LCD display monitor with TV tuner	Plasma/LCD display monitor tested to IEC 60950 would require additional test to clauses 9 (related to antenna only), 10.1, 10.2, 10.3 and 12.5 of IEC 60065.	Not Plasma/LCD display monitor equipemnt.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict

National Differences for JAPAN			
Differences according to.....: J60950-1(H22)			

National Differences - Japan			
1.2.4.1	<p>Add the following new NOTE.</p> <p>NOTE Even if the equipment is designed as Class I, the equipment is regarded as Class 0I equipment when a 2-pin adaptor with an earthing lead wire or a cord set having a 2-pin plug with an earthing lead wire is provided or recommended.</p>	Must be considered before marketed in Japan.	—
1.2.4.3A	<p>Add the following new clause.</p> <p>1.2.4.3A CLASS 0I EQUIPMENT Equipment having attachment plug without earthing blade, where protection against electric shock is achieved by:</p> <ul style="list-style-type: none"> <li>- using BASIC INSULATION, and</li> <li>- providing externally an earth terminal or a lead wire for earthing in order to connect those conductive parts that might assume a HAZARDOUS VOLTAGES in the event of BASIC INSULATION fault to the PROTECTIVE EARTHING CONDUCTOR in the building wiring.</li> </ul> <p>NOTE Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation. circuit.</p>	Must be considered before marketed in Japan.	—
1.3.2	<p>Add the following notes after the first paragraph:</p> <p>NOTE 1 Transportable or similar equipment that is relocated frequently for intended usage should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p> <p>NOTE 2 Considering wiring circumstance in Japan, equipment intended to be installed where the provision for earthing connection is unlikely should not be designed as Class I or Class 0I equipment unless it is intended to be installed by service personnel.</p>	Must be considered before marketed in Japan.	—

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.1	<p>Replace the first paragraph with the following:</p> <p>Where safety is involved, components shall comply either with the requirements of this standard or with the safety aspects of the relevant JIS component standard or IEC component standards in case there is no applicable JIS component standard is available. However, in case a component that falls within the scope of the METI Ministerial ordinance (No. 85:1962) is properly used in accordance with its marked ratings, the requirements of 1.5.4, 2.8.7 and 3.2.5 apply, and in addition, a cord connector of power supply cord set matching with an appliance inlet specified in the standard sheets of IEC 60320-1, shall comply with relevant standard sheet of IEC 60320-1.</p> <p>Replace NOTE 1 with the following:</p> <p>NOTE 1 A JIS or an IEC component standard is considered relevant only if the component in question clearly falls within its scope.</p>	Considered.	<b>P</b>

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Clause	Requirement + Test	Result - Remark	Verdict
1.5.2	<p>Replace the first sentence in the first dashed paragraph with the following:</p> <ul style="list-style-type: none"> <li>- a component that has been demonstrated to comply with a JIS component standard harmonized with the relevant IEC component standard, or where such JIS component standard is not available, a component that has been demonstrated to comply with the relevant IEC component standard shall be checked for correct application and use in accordance with its rating.</li> </ul> <p>Add a NOTE after the first dashed paragraph as follows:</p> <p>NOTE 1 See 1.7.5A when Type C.14 appliance coupler rated 10 A per IEC 60320-1 is used with an equipment rated not more than 125 V and rated more than 10 A.</p> <p>Replace the first sentence in the third dashed paragraph as follows:</p> <ul style="list-style-type: none"> <li>- where no relevant IEC component standard or JIS component standard harmonized with the relevant IEC component standard exists, or where components are used in circuits not in accordance with their specified rating, the components shall be tested under the conditions occurring in the equipment.</li> </ul>	Considered.	<b>P</b>
1.5.6	In this sub-clause, add "JIS C 5101-14:1998 or" before the reference number, IEC 60384-14:1993.	Considered.	<b>P</b>
1.5.7.2	In this sub-clause, add "JIS C 5101-14:1998 or" before the reference number, IEC 60384-14:1993.	Considered.	<b>P</b>
1.5.8	In the first paragraph, add "JIS C 5101-14:1998 or" before the reference number, IEC 60384-14:1993.	Considered.	<b>P</b>
1.7.1	<p>Replace the fifth dashed paragraph with the following:</p> <ul style="list-style-type: none"> <li>- manufacturer's or responsible company's name or trade-mark or identification mark;</li> </ul>	Must be considered when marketing into Japan.	—
1.7.5	In the second paragraph, add "or JIS C 8303:2007" after the reference number, IEC/TR 60083:1997".	No such parts.	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.5A	<p>Add the following new clause after 1.7.5</p> <p>1.7.5A Appliance Couplers</p> <p>If an appliance coupler according to IEC 60320-1, C.14(rated current: 10 A) is used in equipment whose rated voltage is less than 125 V and the rated current is over 10 A, the following instruction or equivalent shall be described in the user instruction.</p> <p>“ Use only designated cord set attached in this equipment”</p>	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	N/A
1.7.12	<p>Replace first sentence with the following:</p> <p>Instructions and equipment marking related to safety shall be in Japanese.</p>	Must be considered before marketed in Japan.	—
1.7.17A	<p>Add the following new clause after 1.7.17</p> <p>1.7.17A Marking for CLASS 0I EQUIPMENT</p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be marked on the visible place of the mains plug or the main body:</p> <p>必ず接地接続を行って下さい “Provide an earthing connection”</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following or equivalent instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>接地接続は必ず、電源プラグを電源につなぐ前に行ってください。又、接地接続を外す場合は、必ず電源プラグを電源から切り離してから行って下さい。 “Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p>	Must be considered before marketed in Japan.	—
2.1.1.1	In item b) of this sub-clause, replace “IEC 60083” with “JIS C 8303:2007 or Article 1 of the Ministerial Ordinance (No. 85:1962)”	Considered.	P
2.6.3.2	<p>Add the following after the first paragraph.</p> <p>This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.</p>	Must be considered before marketed in Japan.	—




IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	<p>Replace the first paragraph with the following.</p> <p>Equipment required to have protective earthing shall have a main protective earthing terminal. For equipment with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal except for CLASS 0I EQUIPMENT providing separate main protective earthing terminal other than appliance inlet.</p>	Considered.	P
2.6.5.4	<p>Replace the first sentence with the following.</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p>	Considered.	P
2.6.5.8A	<p>Add the following new clause after 2.6.5.8</p> <p>2.6.5.8A Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150 V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or a lead wire for earthing in the external location where easily visible.</p>	Must be considered before marketed in Japan.	—
2.10.3.1	In this sub-clause, replace IEC 60664-1 with JIS C 0664:2003.	Considered	P
2.10.3.2	In the second paragraph, replace IEC 60664-1 with JIS C 0664:2003.	Considered	P
3.2.3	<p>Add the following after Table 3A:</p> <p>Table 3A applies when cables complying with JIS C 3662 or JIS C 3663 are used. In case of other cables, the cable entries shall be so designed that a conduit suitable for the cable used can be fitted.</p>	The equipment is not intended for permanent connection to the mains.	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5.1	<p>Add the following to the last of first dashed paragraph.</p> <p>Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance (No. 85:1962) on stipulating technical requirements for the Electrical Appliance.</p> <p>Add the following to the last of second dashed paragraph.</p> <p>Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance (No. 85:1962) on stipulating technical requirements for the Electrical Appliance.</p> <p>Delete 1) in Table 3B.</p>	No power supply cord is supplied. Refer to Summary Of Testing in main test report.	<b>N/A</b>
3.3.4	<p>Add the following note to Table 3D:</p> <p>NOTE For cables other than those complying with JIS C 3662 or JIS C 3663, terminals shall be suitable for the size of the intended cables.</p>	The equipment is provided with an appliance inlet.	<b>N/A</b>
3.3.7	<p>Add the following after the first sentence:</p> <p>This requirement is not applicable to the external earthing terminal of Class 0I equipment.</p>	The equipment is provided with an appliance inlet.	<b>N/A</b>
4.3.4	<p>Add the following after the first sentence:</p> <p>This requirement also applies to those connections in Class 0I equipment, where CLEARANCE or CREEPAGE DISTANCES over BASIC INSULATION would be reduced to less than the values specified in 2.10.</p>	Considered	<b>P</b>
4.3.13.5	<p>Replace the first paragraph with the following:</p> <p>Except as permitted below, equipment shall be classified and labelled according to JIS C 6802:2005, and JIS C 6803:2006 or IEC 60825-2:2000, as applicable.</p> <p>Replace IEC 60825-1 in the second and the last paragraph with JIS C 6802:2005.</p>	No laser, LED is diffusive type.	<b>P</b>

IEC 60950-1:2001																																
Clause	Requirement + Test	Result - Remark	Verdict																													
4.5	Add the following NOTE to Table 4B, 3):  NOTE: In case no data for the material is available, Appendix 4, 4. (1). b. 3 of the Interpretation on the Ministerial Ordinance stipulating Technical Specifications for Electrical Appliances (Commerce and Distribution Policy Group No. 3:2008/06/19) may apply.	Considered.	<b>P</b>																													
5.1.3	Add a note after the first paragraph as follows:  NOTE Attention should be drawn to that majority of three-phase power system in Japan is of delta connection, and therefore, in that case, the test is conducted using the test circuit from IEC 60990, figure 13.	Single phase only.	<b>N/A</b>																													
5.1.6	Replace Table 5A as follows: <table border="1" data-bbox="424 1059 1337 1780" style="margin-left: 40px;"> <thead> <tr> <th>Type of equipment</th> <th>Terminal A of measuring instrument connected to:</th> <th>Maximum TOUCH CURRENT mA r.m.s. <sup>1)</sup></th> <th>Maximum PROTECTIVE CONDUCTOR CURRENT</th> </tr> </thead> <tbody> <tr> <td>All equipment</td> <td>Accessible parts and circuits not connected to protective earth</td> <td>0,25</td> <td>-</td> </tr> <tr> <td>HAND-HELD</td> <td rowspan="3">Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT</td> <td>0,75</td> <td>-</td> </tr> <tr> <td>MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT</td> <td>3,5</td> <td>-</td> </tr> <tr> <td>STATIONARY, PLUGGABLE TYPE A</td> <td>3,5</td> <td>-</td> </tr> <tr> <td>All other STATIONARY EQUIPMENT - not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7</td> <td></td> <td>3,5 -</td> <td>- 5 % of input current</td> </tr> <tr> <td>HAND-HELD</td> <td rowspan="2">Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT</td> <td>0,5</td> <td>-</td> </tr> <tr> <td>Others</td> <td>1,0</td> <td>-</td> </tr> </tbody> </table> <p><sup>1)</sup> If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.</p>	Type of equipment	Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. <sup>1)</sup>	Maximum PROTECTIVE CONDUCTOR CURRENT	All equipment	Accessible parts and circuits not connected to protective earth	0,25	-	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0,75	-	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT	3,5	-	STATIONARY, PLUGGABLE TYPE A	3,5	-	All other STATIONARY EQUIPMENT - not subject to the conditions of 5.1.7 - subject to the conditions of 5.1.7		3,5 -	- 5 % of input current	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-	Others	1,0	-		<b>P</b>
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Others		1,0	-																													
6	Replace IEC 60664-1 in NOTE 4 with JIS C 0664.	No such parts.	<b>N/A</b>																													
7	Replace IEC 60664-1 in NOTE 3 with JIS C 0664:2003.	Not connected to cable distribution systems.	<b>N/A</b>																													

<b>IEC 60950-1:2001</b>			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	<p>Add the following after the paragraph:</p> <p>However, the separation requirements and tests of 6.2.1 a), b) and c) do not apply to a CABLE DISTRIBUTION SYSTEM if all of the following apply:</p> <ul style="list-style-type: none"> <li>- the circuit under consideration is a TNV-1 CIRCUIT; and</li> <li>- the common or earthed side of the circuit is connected to the screen of the coaxial cable and to all accessible parts and circuits (SELV, accessible metal parts and LIMITED CURRENT CIRCUITS, if any); and</li> <li>- the screen of the coaxial cable is intended to be connected to earth in the building installation.</li> </ul>	<p>Not connected to cable distribution systems.</p>	<b>N/A</b>
W.1	<p>Replace the second and the third sentence in the first paragraph with the following:</p> <p>This distinction between earthed and unearthed (floating) circuit is not the same as between CLASS I EQUIPMENT, CLASS 0I EQUIPMENT and CLASS II EQUIPMENT. Floating circuits can exist in CLASS I EQUIPMENT or CLASS 0I EQUIPMENT and earthed circuits in CLASS II EQUIPMENT.</p>	<p>Not connected to a telecommunication network.</p>	<b>N/A</b>

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict
Annex JA	<p>Add a new annex JA with the following contents.</p> <p style="text-align: center;">Annex JA (normative)</p> <p style="text-align: center;">Document shredding machines</p> <p>Document shredding machines shall also comply with the requirements of this annex except those of STATIONARY EQUIPMENT used by connecting directly to an AC MAINS SUPPLY of three-phase 200V or more.</p> <p><b>JA.1 Markings and instructions</b></p> <p>The symbol</p>  <p>(JIS S 0101:2000, 6.2.4) and the following precautions for use shall be marked on readily visible part adjacent to document feed opening. The marking shall be clearly legible, permanent, and easily discernible;</p> <ul style="list-style-type: none"> <li>- that use by an infants/children may cause a hazard of injury etc.;</li> <li>- that a hand can be drawn into the mechanical section for shredding when touching the document-slot;</li> <li>- that clothing can be drawn into the mechanical section for shredding when touching the document-slot;</li> <li>- that hairs can be drawn into the mechanical section for shredding when touching the document-slot;</li> <li>- in case of equipment incorporating a commutator motor, that equipment may catch fire or explode by spraying of flammable gas.</li> </ul> <p><b>JA.2 Inadvertent reactivation</b></p> <p>Any safety interlock that can be operated by means of the test finger, Figure JA.1, is considered to be likely to cause inadvertent reactivation of the hazard.</p> <p>Compliance is checked by inspection and, where necessary, by a test with the test finger, Figure JA.1</p> <p><b>JA.3 Disconnection from the mains supply</b></p> <p>Document shredding machines shall incorporate an isolating switch complying with sub-clause 3.4.2 as the device disconnecting the power of hazardous moving parts. For this switch, two-position (single-use) switch or multi-position (multifunction) switch (e.g., slide switch) may be used.</p>	<p>The equipment is not document shredding machines.</p>	<b>N/A</b>

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Clause	Requirement + Test	Result - Remark	Verdict
Annex JA	<p>If two-position switch, the positions for "ON" and "OFF" shall be indicated in accordance with sub-clause 1.7.8. If multi-position switch, the position for "OFF" shall be indicated in accordance with sub-clause 1.7.8 and other positions shall be indicated with proper terms or symbols.</p> <p>Compliance is checked by inspection</p> <p><b>JA.4 Protection against hazardous moving parts</b> Any warning shall not be used instead of the structure for preventing access to hazardous moving parts. Document shredding machines shall comply with the following requirements.</p> <p>Insert the test finger, Figure JA.1, into all openings in MECHANICAL ENCLOSURES without applying appreciable force. It shall not be possible to touch hazardous moving parts with the test finger. This consideration applies to all sides of MECHANICAL ENCLOSURES when the equipment is mounted as intended. Before testing with the test finger, remove the parts detachable without a tool.</p> <p>Insert the wedge-probe, Figure JA.2, into the document-slot. And, against all directions of openings, if straight-cutting type, a force of 45 N shall apply to the probe, and 90 N if cross-cutting type. In this case, the weight of the probe is to be factored into the overall applied force. Before testing with the wedge-probe, remove the parts detachable without a tool. It shall not be possible to touch any hazardous moving parts, including the shredding roller or the mechanical section for shedding, with the probe.</p>	<p>The equipment is not document shredding machines.</p>	N/A

IEC 60950-1:2001			
Clause	Requirement + Test	Result - Remark	Verdict

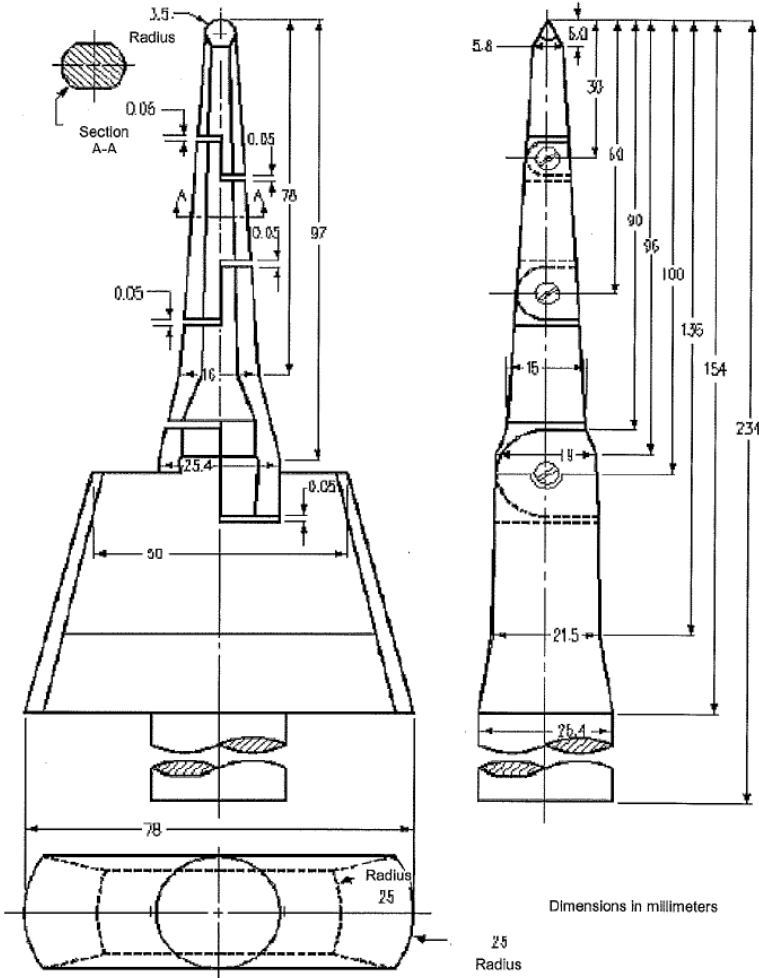
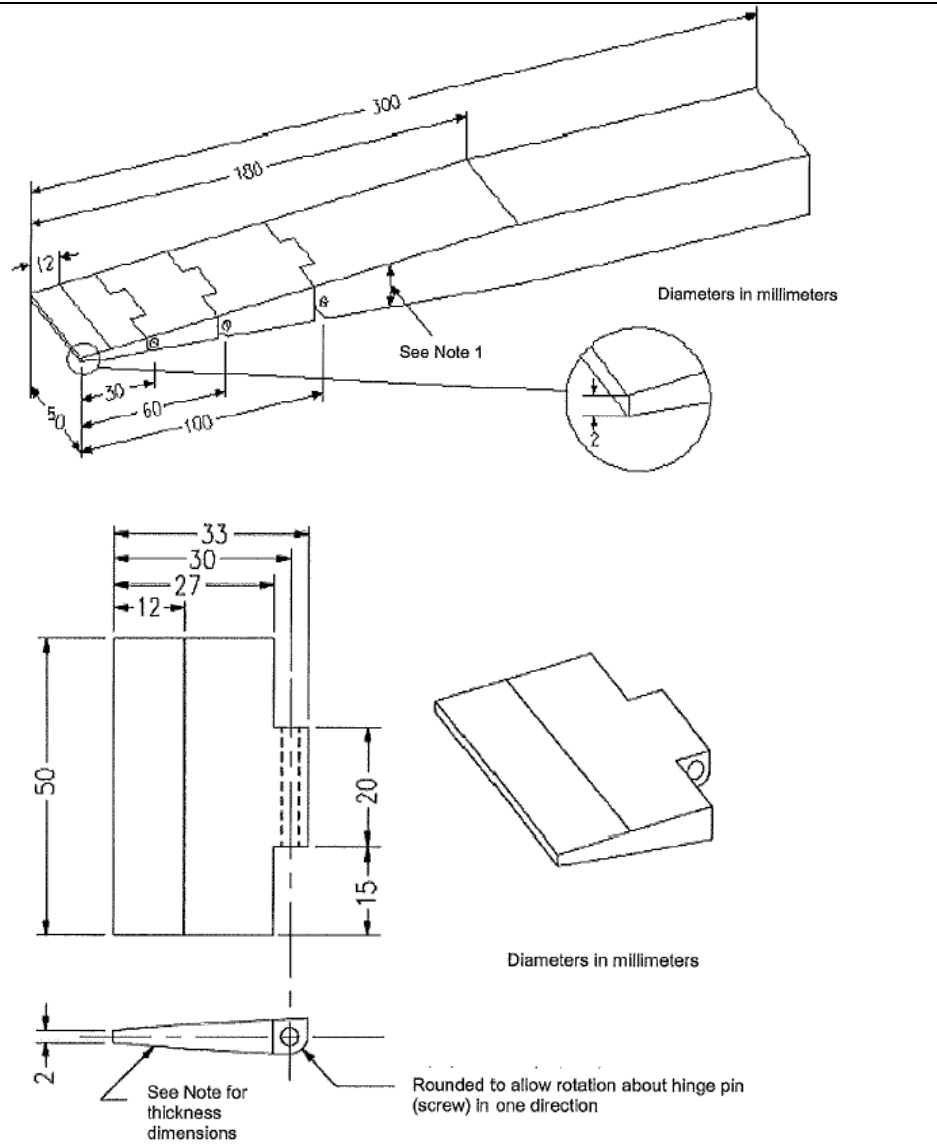
<p>Annex JA</p>	 <p style="text-align: center;">Dimensions in millimeters</p>	<p>N/A</p>
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Figure JA.1 Test finger

IEC 60950-1:2001

Clause	Requirement + Test	Result - Remark	Verdict
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<p>Annex JA</p>	 <p style="text-align: right;">Diameters in millimeters</p> <p style="text-align: center;">See Note 1</p> <p style="text-align: center;">Diameters in millimeters</p> <p style="text-align: center;">See Note for thickness dimensions</p> <p style="text-align: center;">Rounded to allow rotation about hinge pin (screw) in one direction</p> <p><b>Details of the tip of wedge</b></p> <table border="1" data-bbox="399 1668 1316 1803"> <thead> <tr> <th>Distance from the tip (mm)</th> <th>Thickness of probe (mm)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>2</td> </tr> <tr> <td>12</td> <td>4</td> </tr> <tr> <td>180</td> <td>24</td> </tr> </tbody> </table> <p>NOTE 1 The thickness of the probe varies linearly, with slope changes at the respective points shown in the table.</p> <p>NOTE2 The allowable dimensional tolerance of the probe is +/- 0.127 mm.</p> <p style="text-align: center;"><b>Figure JA.2 Wedge-probe</b></p>	Distance from the tip (mm)	Thickness of probe (mm)	0	2	12	4	180	24	<p>N/A</p>
Distance from the tip (mm)	Thickness of probe (mm)									
0	2									
12	4									
180	24									