

IEC SYSTEM FOR CONFORMITY TESTING  
AND CERTIFICATION OF ELECTRICAL  
EQUIPMENT (IECEE)  
CB SCHEME

SYSTÈME CEI D'ESSAIS DE CONFORMITÉ  
ET DE CERTIFICATION DES EQUIPEMENTS  
ELECTRIQUE (IECEE)  
METHODE OC

## CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product

*Produit*

LCD Monitor

Name and address of the applicant

*Nom et adresse du demandeur*

Compal Electronics, Inc.  
No. 581, Jui-Kuang Rd., Neihu  
TAIPEI 114, TAIWAN, R.O.C.

Name and address of the manufacturer

*Nom et adresse du fabricant*

Compal Electronics, Inc.  
No. 581, Jui-Kuang Rd., Neihu  
TAIPEI 114, TAIWAN, R.O.C.

Name and address of the factory

*Nom et adresse de l'usine*

Compal Electronics (China) Co., Ltd.  
Tong Feng East Road, Kunshan  
Economic Technical Development Zone, KUNSHAN, JIANGSU, P.R.  
CHINA

Rating and principal characteristics

*Valeurs nominales et caractéristiques principales*

Input rating : DC 12V, 5A  
Protection class: III

Trade mark (if any)

*Marque de fabrique (si elle existe)*

1) COMPAL  
2) HITACHI  
3) acer

Model/type Ref.

*Ref. de type*

1) XM9XX  
2) CML190SXW\*  
3) AL922  
X and \* = 0-9, A-Z or blank)

Additional information (if necessary)

*Information complémentaire (si nécessaire)*

For differences between models, refer to the test report

A sample of the product was tested and found  
to be in conformity with

*Un échantillon de ce produit a été essayé et a été  
considéré conforme à la*

**PUBLICATION**

**EDITION**

IEC 60950:1991 + A1 + A2 + A3 + A4  
inclusive CENELEC Common Modifications  
National differences see test report

as shown in the Test Report Ref. No.

which form part of this certificate

*comme indiqué dans le Rapport d'essais numéro  
de référence*

*qui constitue une partie de ce certificat*

12002375 001

This CB Test Certificate is issued by the National Certification Body

*Ce Certificat d'essai OC est établi par l'Organisme National de Certification*



**TÜV Rheinland Japan Ltd.**  
3-19-5 Shin-Yokohama  
222-0033 Japan

Date 10.06.2002

Signature

Dipl.-Ing. M. Lechtermann

**TEST REPORT**

**IEC 950**

**Safety of information technology equipment**

**Report**

Reference No. .... : <12002375 001>

Compiled by (+ signature) ..... : *M. Inoue*

Approved by (+ signature) ..... : *R. Gnatton*

Date of issue..... : June 04, 2002

Contents..... : 73 pages

*M. Inoue*  
.....  
*R. Gnatton*  
.....

This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator (see below).

**Testing laboratory**

Name ..... : TÜ V Rheinland Japan Ltd., Yokohama Laboratories

Address..... : Festo Bldg. 5F, 1-26-10 Hayabuchi, Tsuzuki-Ku,  
Yokohama 224-0025, Japan

Testing location..... : TÜ V Rheinland Japan Ltd., Yokohama Laboratories

**Client**

Name ..... : Compal Electronics, Inc.

Address..... : No. 581, Jui-Kuang Rd., Neihu, Taipei 114, Taiwan, R.O.C.

**Test specification**

Standard..... : IEC 60950:1991 + A1:1992 + A2:1993 + A3:1995 + A4:1996  
EN 60950:1992 + A1:1993 + A2:1993 + A3:1995 + A4:1997 + A11:1997  
EMKO-TSE(74-SEC)207/94, UL 1950, C22.2 No. 950, AS 3260,  
GB 4943

Test procedure ..... : CB-scheme

Procedure deviation..... : Argentina, Australia, Austria, Belgium, Brazil, Canada, China, The  
Czech Republic, Denmark, Finland, France, Germany, Greece,  
Hungary, India, Ireland, Israel, Italy, Japan, Rep. of Korea, The  
Netherlands, Norway, Poland, Portugal, Russian Fed., Singapore,  
Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland,  
United Kingdom, USA

Non-standard test method..... : N.A.



**Test Report Form/blank test report**

Test Report Form No. .... : I950\_\_D/97-06

TRF originator. .... : FIMKO

Master TRF ..... : reference No. I950 D, dated 97-02

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**Test item**

Description ..... : LCD Monitor

Trademark ..... : 1). COMPAL, 2). HITACHI, 3). acer

Model and/or type reference ..... : 1). XM9XX, 2). CML190SXW\*, 3). AL922  
(X and \* = 0-9, A-Z or blank)

Manufacturer ..... : Same as client

Rating(s) ..... : 12V, 5A

..... :

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

Equipment mobility ..... : Movable

Operating condition ..... : Continuous

Tested for IT power systems ..... : No direct mains connection

IT testing, phase-phase voltage (V)..... : N.A.

Class of equipment ..... : Class III

Mass of equipment (kg) ..... : 6.6kg

Protection against ingress of water..... : IPX0

**Test case verdicts**

Test case does not apply to the test object ..... : N(A.)

Test item does meet the requirement ..... : P(ass)

Test item does not meet the requirement ..... : F(ail)

..... :

**Testing**

Date of receipt of test item ..... : May, 2002

Date(s) of performance of test ..... : May, 2002

..... :

**General remarks**

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

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

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

Factory:

Compal Electronics (China) Co., Ltd.

Tong Feng East Road, Kunshan Economic Technical Development Zone Kunshan Jiangsu P.R.  
China

Comments:

*Brief description of the test sample:*

This equipment model XM9XX, where X can be 0-9, A-Z or blank for marketing purpose, is an 19" LCD monitor for general office use.

The models AL922 (acer) and CML190SXW\* (Hitachi) are identical to basic model XM9XX except for type designation and trade mark.

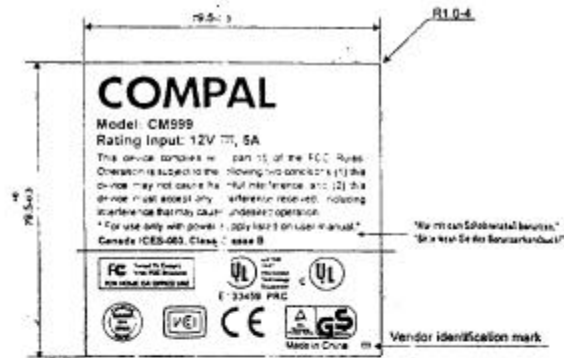
The external power adapters (SPS) are approved products, which were CB scheme tested according to IEC 60950: 1991 + A1 + A2 + A3 + A4, see appended table 1.5.1 for detail information.

This report contains all national deviation as the class III equipment itself is subject of this CB report, but CB countries using for external power adapter should investigate while the equipment under test is submitted for national approval.

Unless otherwise specified, all tests were performed on model XM9XX to represent the other similar models.

The test samples were pre-production sample without serial numbers.

Copy of the marking plate :





IEC 950			
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Clause	Requirement – Test	Result – Remark	Verdict
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1	GENERAL		<b>P</b>
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1.5	Components		<b>P</b>
1.5.1	Comply with IEC 950 or relevant component standard	Components that were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appended tables)	<b>P</b>
1.5.2	Evaluation and testing components	Components that are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	<b>P</b>
	Dimensions (mm) of mains plug for direct plug-in .....	The equipment is not direct plug-in type.	<b>N</b>
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		<b>N</b>
1.5.3	Transformers	Transformers used are suitable for their intended application and comply with the relevant requirements of the standard.	<b>P</b>
1.5.4	High voltage components (component; manufacturer; flammability) .....	No high voltage components used.	<b>N</b>
1.5.5	Interconnecting cables	No interconnecting cable.	<b>N</b>
1.5.6	Mains Capacitors	Class III equipment.	<b>N</b>

1.6	Power interface <i>Class III equipment.</i>		<b>N</b>
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IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
1.6.1	Steady state input current	No direct connection to the mains supply. However the definition for normal load according to 1.2.2.1 for this equipment is the unit operated under full brightness and contrast of the LCD backlight circuit.	<b>N</b>
	Current deviation during normal operating cycle		<b>N</b>
1.6.2	Voltage limit of hand-held equipment		<b>N</b>
1.6.3	Neutral conductor insulated from earth and body		<b>N</b>
1.6.4	Components in equipment intended for IT power system		<b>N</b>
1.6.5	Mains supply tolerance (V) .....		<b>N</b>

1.7	Marking and instructions		<b>P</b>
1.7.1	Rated voltage (V) .....	12V (no direct connection to the mains)	<b>N</b>
	Symbol of nature of supply for d.c. ....	Three dashes under a horizontal bar. (no direct connection to the mains)	<b>N</b>
	Rated frequency (Hz) .....	No direct connection to the mains.	<b>N</b>
	Rated current (A) .....	5A (no direct connection to the mains)	<b>N</b>
	Manufacturer .....	Not shown	<b>N</b>
	Trademark .....	1). COMPAL 2). acer 3). HITACHI	<b>P</b>
	Type/model .....	1). XM9XX 2). AL922 3). CML190SXW*  (X and * can be 0-9, A-Z or blank)	<b>P</b>



IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
	Symbol of Class II .....	Class III equipment	<b>N</b>
	Certification marks .....	TÜV Rheinland GS mark, see copy of the marking plate for the others certification marks.	<b>N</b>
1.7.2	Safety instructions	The users manual provided.	<b>P</b>
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	<b>N</b>
1.7.4	Marking for voltage setting/frequency setting ...	Class III equipment.	<b>N</b>
1.7.5	Marking at power outlets .....	No outlet.	<b>N</b>
1.7.6	Marking at fuseholders .....	No fuseholder.	<b>N</b>
1.7.7.1	Protective earthing terminals	Class III equipment.	<b>N</b>
1.7.7.2	Terminal for external primary power supply conductors	Class III equipment.	<b>N</b>
1.7.8.1	Identification and location of switches and controls .....	No safety relevant switch or control.	<b>N</b>
1.7.8.2	Colours of controls and indicators .....	No safety relevant control or indicator.	<b>N</b>
1.7.8.3	Symbols according to IEC 417 .....	Marking for stand-by switch according IEC 60417, No. 5009 (line half inside circle).	<b>P</b>
1.7.8.4	Figures used for marking .....	No indicators for different positions.	<b>N</b>
1.7.8.5	Location of markings and indications for switches and controls .....	The marking of the switch is located on the switch knob.	<b>P</b>
1.7.9	Isolation of multiple power sources .....	Class III equipment.	<b>N</b>
1.7.10	Instructions for installation to IT power system	Class III equipment.	<b>N</b>
1.7.11	Instructions when protection relies on building installation	Class III equipment.	<b>N</b>
1.7.12	Marking when leakage current exceeds 3,5 mA	Class III equipment.	<b>N</b>
1.7.13	Indication at thermostats and regulating devices	No adjustable thermostats.	<b>N</b>
1.7.14	Language of safety markings/instructions	User manual and marking label are in English. Version in other languages will be provided when national approval.	<b>P</b>





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Clause	Requirement – Test	Result – Remark	Verdict
	Language .....	English	—
1.7.15	Durability and legibility	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15s and then again for 15s with the cloth soaked with petroleum spirit.  After this test there was no damage to the label. The marking on the label did not fade. There was neither curling nor lifting of the label edge.	<b>P</b>
1.7.16	Removable parts	No required markings placed on removable parts.	<b>P</b>
1.7.17	Warning text for replaceable lithium batteries	No lithium battery	<b>N</b>
	Language .....		—
1.7.18	Operator access with a tool .....	Only SELV and LCC inside.	<b>N</b>
1.7.19	Equipment for restricted access locations .....	No restricted access location.	<b>N</b>

<b>2</b>	PROTECTION FROM HAZARDS		<b>P</b>
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2.1	Protection against electric shock and energy hazards <i>The unit is supplied from an approved power supply adapter that provides SELV. Only SELV and limited current circuits inside the unit @ no electrical shock or energy hazards.</i>		<b>N</b>
2.1.1	Access to energized parts		<b>N</b>
2.1.2	Protection in operator access areas		<b>N</b>
	Test by inspection .....		<b>N</b>
	Test with test finger .....		<b>N</b>
	Test with test pin .....		<b>N</b>
2.1.3.1	Insulation of internal wiring in an ELV circuit accessible to operator		<b>N</b>
	Working voltage (V); distance (mm) through insulation .....		<b>N</b>



IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.1.3.2	Operator accessible insulation of internal wiring at hazardous voltage		N
2.1.4.1	Protection in service access areas		N
2.1.4.2	Protection in restricted access locations		N
2.1.5	Energy hazard in operator access area		N
2.1.6	Clearances behind conductive enclosures		N
2.1.7	Shafts of manual controls		N
2.1.8	Isolation of manual controls		N
2.1.9	Conductive casings of capacitors		N
2.1.10	Risk of electric shock from stored charge on capacitors connected to mains circuit		N
	Time-constant (s); measured voltage (V) ..... :		—

2.2	Insulation <i>The unit is supplied from an approved power supply adapter that provides SELV. Only SELV and limited current circuits inside the unit @ no requirement on insulation. (See also sub clause 5.4.4)</i>		N
2.2.1	Methods of insulation		N
2.2.2	Properties of insulating materials		N
2.2.3	Humidity treatment		N
	Humidity (%) ..... :		—
	Temperature (°C) ..... :		—
2.2.4	Requirements for insulation		N
2.2.5	Insulation parameters		N
2.2.6	Categories of insulation		N
2.2.7.1	General rules for working voltages		N
2.2.7.2	Clearances in primary circuits		N
2.2.7.3	Clearances in secondary circuits		N
2.2.7.4	Creepage distances		N
2.2.7.5	Electric strength tests		N
2.2.8.1	Bridging capacitors		N
2.2.8.2	Bridging resistors		N

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.8.3	Accessible parts		<b>N</b>

2.3	Safety extra-low voltage (SELV) circuits		<b>P</b>
2.3.1	Voltage (V) of SELV circuits under normal operating conditions and after a single fault .... :	42.4V peak or 60VDC are not exceeded in SELV circuit under normal operation or single fault condition	—
2.3.2	Voltage (V) between any two conductors of SELV circuit(s) and for Class I equipment between any conductor of SELV circuit and equipment protective earthing terminal under normal operating conditions .....	Between any SELV circuits 42.4V peak or 60VDC are not exceeded	<b>P</b>
2.3.3	Voltage (V) of SELV in the event of a single failure of basic or supplementary insulation or of a component .....	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC do not exceed and SELV limits not for longer than 0.2 seconds, see abnormal results 5.4.6.	—
	Method used for separation .....	Class III equipment.	<b>N</b>
2.3.4	Additional constructional requirements	IEC 60083 and IEC 60320 connectors are not used in SELV.	<b>P</b>
2.3.5	Connection of SELV circuits to other circuits	See 2.3.2 and 2.3.3. No direct connection between SELV and any primary circuits.	<b>N</b>
2.3.8	Construction of SELV circuits		<b>N</b>
2.3.9	SELV circuits connected to other circuits		<b>N</b>

2.4	Limited current circuits		<b>P</b>
2.4.2	Frequency (Hz) .....	The peak drop voltage was measured with a scope at a 2kΩ non-inductive resistor. Results see appended table.	¾
	Measured current (mA) .....	See above.	<b>P</b>
2.4.3	Measured voltage (V) .....		¾

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Clause	Requirement – Test	Result – Remark	Verdict
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	Measured capacitance (µF) .....		<b>N</b>
2.4.4	Measured voltage (V) .....	450V < U < 15kV	$\frac{3}{4}$
	Measured charge (µC) .....	< 45µC	<b>P</b>
2.4.5	Measured voltage (V) .....		$\frac{3}{4}$
	Measured energy (mJ) .....		<b>N</b>
2.4.6	Limited current circuit supplied from or connected to other circuits .....		<b>P</b>

2.5	Provisions for earthing <i>Class III equipment.</i>		<b>N</b>
2.5.1	Class I equipment		<b>N</b>
	Warning label for service personnel		<b>N</b>
2.5.2	Protective earthing in Class II equipment		<b>N</b>
2.5.3	Switches/fuses in earthing conductors		<b>N</b>
2.5.4	Assured earthing connection for Class I equipment in systems comprising Class I and Class II equipment		<b>N</b>
2.5.5	Green/yellow insulation		<b>N</b>
2.5.6	Continuity of earth connections		<b>N</b>
2.5.7	Making and breaking of protective earthing connections		<b>N</b>
2.5.8	Disconnection protective earthing connections		<b>N</b>
2.5.9	Protective earthing terminals for fixed supply conductors or for non-detachable power supply cords		<b>N</b>
2.5.10	Corrosion resistance		<b>N</b>
2.5.11	Resistance (Ω) of protective earthing conductors ≤ 0,1 Ω		<b>N</b>
	Test current (A) .....		—

2.6	Disconnection from primary power <i>Class III equipment.</i>		<b>N</b>
2.6.1	General requirements		<b>N</b>
2.6.2	Type of disconnect device .....		<b>N</b>

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.3	Disconnect device in permanently connected equipment		N
2.6.4	Parts of disconnect device which remain energized		N
2.6.5	Switches in flexible cords		N
2.6.6	Disconnection of both poles simultaneously for single-phase equipment		N
2.6.7	Disconnection of all phase conductors of supply in three-phase equipment		N
2.6.8	Marking of switch acting as disconnect device		N
2.6.9	Installation instructions if plug on power supply cord acts as disconnect device		N
	Language .....		—
2.6.11	Interconnected equipment		N
2.6.12	Multiple power sources		N
2.7	Overcurrent and earth fault protection in primary circuits <i>Class III equipment.</i>		N
2.7.1	Basic requirements		N
2.7.2	Protection against faults not covered in 5.4		N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices .....		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel		N
2.8	Safety interlock <i>No operator accessible areas which presents hazards in the meaning of this standard.</i>		N
2.8.2	Design		N
2.8.3	Protection against inadvertent reactivation		N
2.8.4	Reliability		N
2.8.5	Overriding an interlock		N
2.8.6.1	Contact gap (m) .....		N

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Clause	Requirement – Test	Result – Remark	Verdict
2.8.6.2	Switch performing 50 cycles		N
2.8.6.3	Electric strength test: test voltage (V) .....		N
2.8.7	Protection against overstress		N

2.9	Clearances, creepage distances and distances through insulation <i>The unit is supplied from an approved AC adapter that provides SELV. Only SELV and limited current circuits inside the unit @ no requirement on insulation.(See also sub clause 5.4.4)</i>		N
	Nominal voltage (V) .....		—
	General		N
2.9.2	Clearances		N
2.9.2.1	Clearances in primary circuits		N
2.9.2.2	Clearances in secondary circuits		N
2.9.3	Creepage distances		N
	CTI tests .....		—
2.9.4.1	Minimum distances through insulation		N
2.9.4.2	Thin sheet material		N
	Number of layers (pcs) .....		N
	Electrical strength test: test voltage (V) .....		N
2.9.4.3	Printed boards		N
	Distance through insulation .....		N
	Electric strength test at voltage (V) for thin sheet insulating material .....		N
	Number of layers (pcs) .....		N
2.9.4.4	Wound components without interleaved insulation		N
	Number of layers (pcs) .....		N
	Two wires in contact inside component; angle between 45° and 90°		N
	Routine testing for finished component		N
2.9.5	Distances (mm) on coated printed boards .....		N
	Routine testing for electric strength		N
2.9.6	Enclosed and sealed parts		N



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Clause	Requirement – Test	Result – Remark	Verdict
	Temperature T1 (°C) .....		<b>N</b>
	Humidity % .....		<b>N</b>
2.9.7	Spacings filled by insulating compound		<b>N</b>
	Temperature T1 (°C) .....		<b>N</b>
	Humidity % .....		<b>N</b>
2.9.8	Component external terminations		<b>N</b>
2.9.9	Insulation with varying dimensions		<b>N</b>

2.10	Interconnection of equipment		<b>P</b>
2.10.1	General requirements	See below.	<b>P</b>
2.10.2	Type of interconnection circuits .....	Interconnection circuits of SELV through sec o/p cable. No ELV interconnection circuits.	<b>P</b>
2.10.3	ELV circuits as interconnection circuits	No ELV interconnection.	<b>N</b>

2.11	Limited power source		<b>P</b>
	Use of limited power source .....	The power adaptor was tested with limited power source, during the approval of SPS.	<b>P</b>

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		<b>P</b>
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3.1	General		<b>P</b>
3.1.1	Cross-sectional area of internal wiring/interconnecting cables	All internal wires are UL recognized wiring that is PVC insulated, rated VW-1, min. 80° C, 30V. Internal wiring gauge is suitable for current intended to be carried.	<b>P</b>
	Protection of internal wiring and interconnecting cables	No internal wire for primary power distribution.	<b>N</b>
3.1.2	Wireways	Wires do not touch sharp edges could damage the insulation.	<b>P</b>

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Clause	Requirement – Test	Result – Remark	Verdict
3.1.3	Fixing of internal wiring	The wires are secured by solder pins and quick connect terminals so that a loosening of the terminal connection is unlikely.	P
3.1.4	Fixing of uninsulated conductors	Securely held on PCB. No hazard.	P
3.1.5	Insulation of internal wiring	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.6	Wires coloured green/yellow only for protective earth connection		N
3.1.7	Fixing of beads and similar ceramic insulators	Not used.	N
3.1.8	Required electrical contact pressure		N
3.1.9	Reliable electrical connections	All current carrying connections are metal to metal.	P
3.1.10	End of stranded conductor	No risk of stranded conductors coming loose.	P
3.1.11	Use of spaced thread screws/thread-cutting screws	No self tapping screws are used.	P

3.2	Connection to primary power <i>Class III equipment.</i>		N
3.2.1	Type of connection .....		N
	Design of product with more than one supply connection .....		N
3.2.2	Provision for permanent connection .....		N
	Size (mm) of cables and conduits .....		N
3.2.3	Appliance inlet		N
3.2.4	Type and cross-sectional area (mm <sup>2</sup> ) of power supply cord .....		N
3.2.5	Cord anchorage		N
	Test: 25 times; 1 s; pull (N) .....		—



IEC 950

Clause	Requirement – Test	Result – Remark	Verdict
	Longitudinal displacement $\leq 2$ mm .....		N
3.2.6	Protection of power supply cord		N
3.2.7	Cord guard		N
	D (mm) .....		—
	Test: mass (g) .....		—
	Radius of curvature of the cord $\leq 1,5 D$		N
3.2.8	Supply wiring space		N

3.3	Wiring terminals for external power supply conductors <i>Class III equipment.</i>		N
3.3.1	Terminals		N
3.3.2	Special non-detachable cord		N
	Type of connection .....		—
	Pull test at 5 N		N
3.3.3	Screws and nuts		N
3.3.4	Fixing of conductors		N
3.3.5	Connection of connectors		N
3.3.6	Size of terminals		N
	Nominal thread diameter (mm) .....		N
3.3.7	Protection against damage of conductors		N
3.3.8	Terminal location		N
3.3.9	Test with 8 mm stranded wire		N

4	PHYSICAL REQUIREMENTS		P
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4.1	Stability and mechanical hazards		P
4.1.1	Stability tests		P
	Angle of 10°	This appliance is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal upright position.	P



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Clause	Requirement – Test	Result – Remark	Verdict
	Test: force (N) .....	Equipment is not a floorstanding unit.	<b>N</b>
4.1.2	Protection against personal injury	No hazardous moving part.	<b>P</b>
4.1.3	Warning and means provided for stopping the moving part .....	No hazardous moving part.	<b>N</b>
4.1.4	Edges and corners	Edges and corners of the enclosure are rounded.	<b>P</b>
4.1.5	Enclosure of a high pressure lamp	No lamp with cold pressure of 0.2MPa or hot pressure of 0.4MPa.	<b>N</b>

4.2	Mechanical strength and stress relief <i>As there are no hazardous voltages present in the unit or other hazards foreseeable, the tests of these clauses were not performed but replaced by a construction review only.</i>		<b>P</b>
4.2.1	General		<b>N</b>
4.2.2	Internal enclosures 30 N ± 3 N; 5 s		<b>N</b>
4.2.3	External enclosures 250 N ± 10 N; 5 s		<b>N</b>
4.2.4	Steel ball tests		<b>N</b>
	Fall test		<b>N</b>
	Swing test		<b>N</b>
4.2.5	Drop test		<b>N</b>
4.2.6	Heat test for enclosures of moulded or formed thermoplastic materials: 7 h; T (°C) .....		<b>N</b>
4.2.7	Compliance criteria		<b>N</b>
4.2.8	Mechanical strength of cathode ray tubes		<b>N</b>

4.3	Construction details		<b>P</b>
4.3.1	Changing of setting for different power supply voltages		<b>N</b>
4.3.2	Adjustment of accessible control devices	None that would cause hazard.	<b>P</b>
4.3.4	Prevention of dangerous concentration of dust, powder, liquid and gas	Equipment in intended use not considered to be exposed to these.	<b>N</b>

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Clause	Requirement – Test	Result – Remark	Verdict
4.3.5	Fixing of knobs, grips, handles, levers		<b>N</b>
	Test: force (N) .....		<b>N</b>
4.3.6	Driving belts/couplings shall not ensure electrical insulation	Not used for insulation.	<b>N</b>
4.3.7	Retaining of sleeves	No sleeves used as supplementary insulation.	<b>N</b>
4.3.9	Protection of loosening parts	Class III equipment.	<b>N</b>
4.3.11	Resistance to oil and grease	Insulation not in contact with oil or grease.	<b>N</b>
4.3.12	Protection against harmful concentration of ionizing radiation, ultraviolet light, laser or flammable gases (for laser see IEC 825-1)	No ionizing radiation or laser or flammable liquids presents. LED power is far below LED class 1 limit.	<b>P</b>
4.3.13	Securing of screwed connections	No connection likely to be exposed to mechanical stress is provided in unit.	<b>P</b>
4.3.15	Openings in the top of enclosure	No electric and fire enclosure required.	<b>N</b>
	Dimensions (mm) .....		—
4.3.16	Openings in the sides of enclosure	No electric and fire enclosure required.	<b>N</b>
	Dimensions (mm) .....		—
4.3.17	Interchangeable plugs and sockets		<b>N</b>
4.3.18	Torque test for direct plug-in equipment		<b>N</b>
	Additional torque (Nm) .....		<b>N</b>
4.3.19	Protection against excessive pressure		<b>N</b>
4.3.20	Protection of heating elements in Class I equipment	Class III equipment.	<b>N</b>
4.3.21	Protection of lithium batteries		<b>N</b>
	Construction of protection circuit .....	No lithium battery.	<b>N</b>
4.3.22	Ageing of barrier/screen secured with adhesive		<b>N</b>
	Day 1: temperature (°C); time (weeks) .....		<b>N</b>
	Day 8/22/57: a) temperature (°C) for 1 h b) temperature (°C) for 4 h c) temperature (°C) over 8 h .....		<b>N</b>

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
	Day 9/23/58: a) relative humidity (%) for 72 h b) temperature (°C) for 1 h c) temperature (°C) for 4 h d) temperature (°C) over 8 h .....		<b>N</b>

4.4	Resistance to fire		<b>P</b>
4.4.1	Methods of achieving resistance to fire	Use of materials with the required flammability classes.	<b>P</b>
4.4.2	Minimizing the risk of ignition	Electrical parts are not likely to ignite nearby materials. Parts not protected against overheating under fault conditions.  Temperatures see 5.1.	<b>P</b>
	Printed board: manufacturer; type; flammability :	See 1.5.1 appended table.	<b>P</b>
4.4.3	Flammability of materials and components		
4.4.3.2	Material and component: manufacturer; type; flammability .....	Internal components except small parts are V-2 or better.	<b>P</b>
4.4.3.3	Exemptions .....		<b>N</b>
4.4.3.4	Wiring harnesses: manufacturer; flammability ...	Insulating material consists of PVC.	<b>P</b>
4.4.3.5	Cord anchorage bushings: manufacturer; flammability .....	No cord anchorage.	<b>N</b>
4.4.3.6	Air filter assemblies: manufacturer; flammability :	No air filter assemblies	<b>N</b>
4.4.4	Enclosures and decorative parts: manufacturer; flammability .....	As for the appliance no fire enclosure required (refer to 2.11 limited power source), the enclosure material of HB (min. HB) was acceptable.	<b>P</b>
4.4.5	Conditions for fire enclosures	See 4.4.5.2	<b>P</b>
4.4.5.1	Components which require fire enclosure: manufacturer; flammability .....	See 4.4.5.2.	<b>N</b>



IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict
4.4.5.2	Components not requiring fire enclosure .....	The appliance with: - supply of components in the secondary circuit by a limited power source. Details refer 2.11, and the components are mounted on PCB material of flammability rating V-1 min., the fire enclosure construction is not required.	<b>P</b>
4.4.6	Fire enclosure construction	See 4.4.5.2.	<b>N</b>
4.4.7	Doors or covers in fire enclosures		<b>N</b>
4.4.8	Flammable liquids	No flammable liquids in this unit.	<b>N</b>

5	THERMAL AND ELECTRICAL REQUIREMENTS	<b>P</b>
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5.1	Heating	<b>P</b>
	Heating tests	(see appended table) <b>P</b>

5.2	Earth leakage current <i>Class III equipment.</i>	<b>N</b>
5.2.1	General	<b>N</b>
5.2.2	Leakage current	<b>N</b>
5.2.3	Single-phase equipment	<b>N</b>
	Test voltage (V) .....	¾
	Measured current (mA) .....	¾
	Max. allowed current (mA) .....	¾
5.2.4	Three-phase equipment	<b>N</b>
	Test voltage (V) .....	¾
	Measured current (mA) .....	¾
	Max. allowed current (mA) .....	¾
5.2.5	Equipment with earth leakage current exceeding 3,5 mA	<b>N</b>
	Test voltage (V) .....	¾



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Clause	Requirement – Test	Result – Remark	Verdict
	Measured current (mA) .....		¾
	Max. allowed current (mA) .....		¾
	Cross-sectional area (mm <sup>2</sup> ) of internal protective earthing conductor .....		¾
	Warning label		N

5.3	Electric strength <i>Class III equipment.</i>		N
5.3.1	General		N
5.3.2	Test procedure		N

5.4	Abnormal operating and fault conditions		P
5.4.2	Motors	No motor.	N
5.4.3	Transformers	No safety isolation transformer except in approved switching power supply adapter.	N
5.4.4	Compliance of operational insulation <i>AC/DC adapter is approved component, the over-current protection of the adapter make sure that there is no hazard caused by e.g. fire inside the adapter.</i>		P
	Method used .....	Method c) considered. Due to <ul style="list-style-type: none"> <li>• all components are mounted on PCB of flammability V-1</li> <li>• wiring is insulated by PVC</li> <li>• no risk of electrical shock</li> </ul> no test had been performed.	N
5.4.5	Electromechanical components in secondary circuits	No electromechanical components.	N
5.4.6	Other components and circuits	Faults in primary and secondary components and operational insulation were already considered during the approval of the SPS.  No other abnormal tests necessary.	N



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Clause	Requirement – Test	Result – Remark	Verdict
5.4.7	Test in any expected condition and foreseeable misuse	Ventilation openings blocked test: Results see appended table, no hazards  Beside this, there is no other foreseeable misuse likely to happen.	<b>P</b>
5.4.8	Unattended use of equipment having thermostats, temperature limiters etc.	None of them are used.	<b>N</b>
5.4.9	Compliance	No hazards.	<b>P</b>
5.4.10	Ball-pressure test of thermoplastic parts; impression shall not exceed 2 mm		<b>N</b>

6	CONNECTION TO TELECOMMUNICATION NETWORKS <i>Equipment is not intended to be connected to TNV.</i>		<b>N</b>
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6.1	General		<b>N</b>
6.2	TNV circuits		<b>N</b>
6.2.1.1	Limits of the TNV circuits		<b>N</b>
6.2.1.1 a)	TNV-1 circuits		<b>N</b>
6.2.1.1 b)	TNV-2 and TNV-3 circuits		<b>N</b>
6.2.1.2	Separation from other circuits and from accessible parts		<b>N</b>
	Voltage (V) in SELV circuits, TNV-1 circuits and accessible conductive parts in event of single insulation fault or component failure .....		<b>N</b>
6.2.1.3	Operating voltages generated externally		<b>N</b>
	Voltage (V) in SELV circuit, TNV-1 circuit or accessible conductive part .....		<b>N</b>
6.2.1.4	Separation from hazardous voltages .....		<b>N</b>
	Insulation between TNV circuit and circuit at hazardous voltage		<b>N</b>
	Method used .....		<b>N</b>
6.2.1.5	Connection of TNV circuits to other circuits		<b>N</b>
	Insulation (mm) between TNV circuit supplied conductively from secondary circuit and hazardous voltage circuit .....		<b>N</b>



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Clause	Requirement – Test	Result – Remark	Verdict
6.2.2.1	Protection against contact with bare conductive parts of TNV-2 and TNV-3 circuits		N
	Test with test finger		N
	Test with test probe		N
6.2.2.2	Battery compartments		N
	Marking next to door/on door		N

6.3	Protection of telecommunication network service personnel, and users of other equipment connected to the telecommunication network, from hazards in the equipment		N
6.3.1	Protection from hazardous voltages		N
6.3.2	Use of protective earthing		N
	Language of installation instructions .....		N
6.3.3.1	Insulation between TNV circuit and parts or circuitry that may be earthed		N
6.3.3.2	Exclusions .....		N
6.3.4.1	Limitation of leakage current (mA) to telecommunication network .....		N
6.3.4.2	Summation of leakage currents from telecommunication network .....		N

6.4	Protection of equipment users from voltages on the telecommunication networks		N
6.4.1	Separation requirements		N
6.4.2	Test procedure		N
6.4.2.1	Impulse test: separation between TNV-1 circuits/TNV-3 circuits and:		N
6.4.2.1 a)	unearthed conductive parts/non-conductive parts of the equipment expected to be held or touched during normal use; test at 2,5 kV		N
6.4.2.1 b)	parts and circuitry that can be touched by the test finger except contacts of connectors that cannot be touched by test probe; test at 1,5 kV		N
6.4.2.1 c)	circuitry which is provided for connection of other equipment; test at 1,5 kV		N
6.4.2.2	Electric strength test: separation between TNV-1 circuits/TNV-3 circuits and:		N





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Clause	Requirement – Test	Result – Remark	Verdict
6.4.2.2 a)	unearthed conductive parts/non-conductive parts of the equipment expected to be held or touched during normal use; test at 1,5 kV		N
6.4.2.2 b)	parts and circuitry that can be touched by the test finger except contacts of connectors that cannot be touched by test probe; test at 1,0 kV		N
6.4.2.2 c)	circuitry which is provided for connection of other equipment; test at 1,0 kV		N
6.4.2.3	Compliance criteria		N

6.5	Protection of telecommunication wiring system from overheating		N
	Maximum continuous output current (A) .....		N

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
A.1	Flammability test for fire enclosures of moveable equipment having a total mass exceeding 18 kg, and of stationary equipment		N
A.2	Flammability test for fire enclosures of moveable equipment having a total mass not exceeding 18 kg, and for materials located within fire enclosures		N
A.3	High current arcing ignition test		N
A.3.6	Number of arcs .....		N
A.4	Hot wire ignition test		N
A.4.6	Ignition time (s) .....		N
A.5	Hot flaming oil test		N
A.6	Flammability test for classifying materials V-0, V-1 or V-2		N
A.7	Flammability test for classifying foamed materials HF-1, HF-2 or HBF		N
A.8	Flammability test for classifying materials HB		N
A.9	Flammability test for classifying materials 5V		N
A	Tested material		N
	Preconditioning: 7 days (168 h); temperature (°C) .....		¾
	Mounting of samples during test .....		¾
	Wall thickness .....		¾
	Sample 1 burning time .....		N

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Clause	Requirement – Test	Result – Remark	Verdict
	Sample 2 burning time .....		N
	Sample 3 burning time .....		N
	Material: compliance with the requirements		N
	Manufacturer of tested material .....		¾
	Type of tested material .....		¾
	Additional information .....		¾

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS		N
B.1	General requirements		N
	Position .....		¾
	Manufacturer .....		¾
	Type .....		¾
	Rated voltage (V) or current (A) .....		¾
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) .....		¾
	Electric strength test: test voltage (V) .....		¾
B.6	Running overload test for DC motor in secondary circuits		N
B.7	Locked-rotor overload test for DC motor in secondary circuits		N
B.7.2	Test time (h) .....		N
B.7.3	Test time (h) .....		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Test voltage (V) .....		¾

C	ANNEX C, TRANSFORMERS		N
	Position .....		—
	Manufacturer .....		—



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Clause	Requirement – Test	Result – Remark	Verdict
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	Type .....		—
	Rated values .....		—
	Temperatures		N
	Thermal cut-out		N
C.1	Overload test		N
	Conventional transformer		N
C.2	Insulation		N
	Precautions .....		N
	Retaining of end turns of all windings		N
	Earthing test at 25 A		N
C.3	Electric strength test		N

H	ANNEX H, IONIZING RADIATION		N
	Ionizing radiation		N
	Measured radiation .....		—
	Measured high-voltage (kV) .....		—
	Measured focus voltage (kV) .....		—
	CRT markings .....		—
	Certified by .....		—
	Standard used .....		—

U	ANNEX U, INSULATED WINDING WIRES FOR USE AS MULTIPLE LAYER INSULATION		N
	See separate test report		N

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

1.5.1	TABLE: list of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity <sup>1)</sup>	
LCD Panel	Fujitsu	FLC48SXC8V	19", TFT type	--	--	
DC/AC Inverter	Ambit	PK07V000100	i/p: 12.6Vdc max., 2.3A max.; o/p: 700Vrms, 8mA	--	--	
- Transformer in DC/AC Inverter (T1, T2)	TMP	SIT08133-1935	Class 130° C	--	--	
Power Adapter	Li Shin	LSE9901B1260	i/p: 100-240Vac, 50/60Hz, 1.5A, Class I o/p: 12Vdc, 5.0A	IEC 60950 (comply with limited power source)	TÜV, UL, CUL, N, S, D, FI, CB (issued by NEMKO)	
	Linearity	LAD6019AB5	i/p: 100-240Vac, 50-60Hz, 1.5A max., Class I o/p: 12Vdc, 5.0A	IEC 60950 (comply with limited power source)	TÜV, UL, CSA, CB (issued by TÜV Rheinland)	
Plastic Enclosure Material	--	--	HB or better	UL 94	UL	
PCB material	--	--	V-1, min. 105° C	UL 94	UL	
<sup>1)</sup> an asterisk indicates a mark which assures the agreed level of surveillance						

1.6	TABLE: electrical data (in normal conditions)					N
fuse #	Irated (A)	U (V)/F(Hz)	P (W)	I (A)	Ifuse (A)	condition/status
For model: Li Shin: LSE9901B1260						

IEC 950				
Clause	Requirement – Test		Result – Remark	Verdict

F1	--	90/ 50Hz	42.6	0.71	0.71	Max normal load
F1	--	90/ 60Hz	42.4	0.70	0.70	dto
F1	1.5	100/ 50Hz	42.0	0.63	0.63	dto
F1	1.5	100/ 60Hz	42.0	0.63	0.63	dto
F1	1.5	240/ 50Hz	41.6	0.32	0.32	dto
F1	1.5	240/ 60Hz	41.6	0.32	0.32	dto
F1	--	264/ 50Hz	41.7	0.30	0.30	dto
F1	--	264/ 60Hz	41.7	0.30	0.30	dto
--	5	11.74	40.50	3.45	--	(measured at LCD monitor)

For model: Linearity: LAD6019AB5

F1	--	90/ 50Hz	43.2	0.76	0.76	Max normal load
F1	--	90/ 60Hz	43.2	0.76	0.76	dto
F1	1.5	100/ 50Hz	42.4	0.70	0.70	dto
F1	1.5	100/ 60Hz	42.4	0.70	0.70	dto
F1	1.5	240/ 50Hz	41.7	0.32	0.32	dto
F1	1.5	240/ 60Hz	41.7	0.32	0.32	dto
F1	--	264/ 50Hz	41.5	0.30	0.30	dto
F1	--	264/ 60Hz	41.5	0.30	0.30	dto
--	5	11.78	41.0	3.48	--	(measured at LCD monitor)

2.1.5	TABLE: energy hazard				<b>N</b>
Voltage (Rated) (V)	Current (Rated) (A)	Voltage (Max) (V)	Current (Max.) (A)	VA (Max.) (VA)	

2.1.10	TABLE: discharge test				<b>N</b>
Condition	$\tau$ calculated (s)	$\tau$ measured (s)	t u→ 0V (s)	comments	

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

2.2.7	TABLE: working voltage measurement			N
Location	TRMS Voltage (V)	Peak Voltage (V)	Comments	

2.3.2	TABLE: Hazardous voltage measurement				N
Transformer	Location	Max. Voltage		Voltage Limitation Components	
		Peak	DC		

2.3.2	TABLE: SEL voltage measurement		N
Location	Voltage measured (V)	Comments	

2.4	TABLE: limited current circuit measurement					P
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments	
normal condition						
J2 pin 1 – J2 pin 3	0	0	--	--	Unit shut down, no hazards	
J2 pin 1 – Earth	0	0	--	--	Unit shut down, no hazards	
J2 pin 3 – Earth	3.48	1.74	52.45	36.7		
T1 pin 7 – T1 pin 10	0	0	--	--	Unit shut down, no hazards	
T1 pin 7 – Earth	0	0	--	--	Unit shut down, no hazards	
T1 pin 10 – Earth	9.0	4.5	52.76	36.9		
single fault condition (C30 short)						
J2 pin 1 – J2 pin 3	0	0	--	--	Unit shut down, no hazards	
J2 pin 1 – Earth	0	0	--	--	Unit shut down, no hazards	

IEC 950						
Clause	Requirement – Test			Result – Remark		Verdict

J2 pin 3 – Earth	0	0	--	--	Unit shut down, no hazards
T1 pin 7 – T1 pin 10	0	0	--	--	Unit shut down, no hazards
T1 pin 7 – Earth	0	0	--	--	Unit shut down, no hazards
T1 pin 10 – Earth	0	0	--	--	Unit shut down, no hazards
single fault condition (L2 short)					
J2 pin 1 – J2 pin 3	0	0	--	--	Unit shut down, no hazards
J2 pin 1 – Earth	0	0	--	--	Unit shut down, no hazards
J2 pin 3 – Earth	5.08	2.54	10.06	7.0	
T1 pin 7 – T1 pin 10	0	0	--	--	Unit shut down, no hazards
T1 pin 7 – Earth	0	0	--	--	Unit shut down, no hazards
T1 pin 10 – Earth	8.3	4.15	136.5	70	
single fault condition (O8 pin 3 – 8 short)					
J2 pin 1 – J2 pin 3	0	0	--	--	Unit shut down, no hazards
J2 pin 1 – Earth	0	0	--	--	Unit shut down, no hazards
J2 pin 3 – Earth	4.68	2.34	49.70	34.8	
T1 pin 7 – T1 pin 10	0	0	--	--	Unit shut down, no hazards
T1 pin 7 – Earth	0	0	--	--	Unit shut down, no hazards
T1 pin 10 – Earth	12.9	6.45	49.75	34.8	

Note:

1. Output measured with a 2kΩ non-inductive resistor as load.

2.9.2 and 2.9.3	TABLE: clearance and creepage distance measurements					<b>N</b>
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)

2.9.4.1	TABLE: distance through insulation measurements				<b>N</b>
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)	

IEC 950			
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Clause	Requirement – Test	Result – Remark	Verdict
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2.11	TABLE: limited power source measurement	<b>N</b>
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	Limits	Measured	Verdict

4.3.15/16 & 4.4.6	Table: enclosure openings	<b>N</b>
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Location	Size (mm)	Comments
Top	0.7mm x 25mm	numerous rectangular openings
Rear	1.4mm x 25mm	17 openings
	0.7mm x 25mm	33 openings
	0.7mm x 18mm	11 openings
Side	none	
Bottom	0.7mm x 23mm	11 openings

5.1	TABLE: temperature rise measurements	<b>P</b>
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	test voltage (V) .....	a) 100-10%	—
		b) 240+ 10%	
	t1 (°C) .....		—
	t2 (°C) .....		—

temperature rise dT of part/at:	dT (K)		required dT (K)
	a)	b)	
Test voltage			
U4 body	39.1	39.3	--
U6 body	27.6	27.6	--
L802 coil	57.5	57.6	65
L30 coil	23.2	23.3	65
T1 core	42.4	42.4	90





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Clause	Requirement – Test	Result – Remark	Verdict
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T1 coil	45.1	46.6	90
T2 coil	37.3	37.4	90
T2 core	27.8	27.9	90
L31 coil	9.4	9.5	65
PCB near T1	28.4	28.5	65
Enclosure	21.5	21.5	55

For adapter: Linearity, type LA6019AB5

T01 coil	48.5	40.6	65
T02 coil	52.9	41.4	65
C01 body	35.0	33.0	45
T03 coil	43.6	44.5	50
T03 core	43.3	45.0	50
T04 coil	34.2	34.7	65
PCB near T03	47.0	47.7	65
Enclosure	32.0	31.4	55
Ambient	24.2°C	24.3°C	--

temperature rise dT of winding:	R <sub>1</sub> (Ω)	R <sub>2</sub> (Ω)	dT (K)	required dT (K)	insulation class

IEC 950			
Clause	Requirement – Test	Result – Remark	Verdict

Comments:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.1 at voltages as described in 1.6.5.

With maximum of 40°C ambient temperature specified the max. temperature rise is calculated as follows:

Winding components:

- class A → dTmax = 75K - 10K - (40-25)K = 50K

Electrolyte capacitor or components with:

- max. absolute temp. of 85°C → dTmax = (85-40) K = 45K
- max. absolute temp. of 105°C → dTmax = (105-40) K = 65K
- max. absolute temp. of 130°C → dTmax = (130-40) K = 90K

Surface of equipment which may be touched:

- plastic → dTmax = 70 - (40-25) K = 55K

5.2	TABLE: leakage current measurement			<b>N</b>
Condition	current L→PE (mA)	current N→PE (mA)	comments	



5.3	TABLE: electric strength measurements		<b>N</b>
test voltage applied between:		test voltage (V)	breakdown

5.4	TABLE: fault condition tests						<b>P</b>
ambient temperature (°C) .....		28.7°C				—	
model/type of power supply .....		See appended table 1.5.1				—	
manufacturer of power supply .....		See appended table 1.5.1				—	
rated markings of power supply .....		See appended table 1.5.1				—	
No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result

IEC 950							
Clause	Requirement – Test					Result – Remark	Verdict
1	all ventilation openings	blocked	240	1.4 hrs	--	--	Temperature of all parts stabled at T1 core (130°C) = 69.3°C, T1 coil (130°C) = 76.4°C, T03 coil (class A) = 67.5°C, T03 core (class A) = 67.5°C, enclosure (70°C) = 54.9°C, ambient = 22.6°C, no hazards

5.4.10	TABLE: ball pressure test of thermoplastics		N
	required impression diameter (mm) .....	≤ 2 mm	—
part		test temperature (°C)	impression diameter (mm)

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	EN 60950:1992+ A1:1993:+ A2:1993 + A3:1995 + A4:1997 + A11:1997 TEST REPORT  (IEC Publication 60950 2nd edition, 1991+ Amd.1,1992+ Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)  CENELEC common modification, Special National condition, Nation deviation and other information according to CB Bulletin No. 101A, December 2001		<b>P</b>
<p><b>EXPLANATION FOR ABBREVIATIONS</b></p> <p>C= CENELEC common modification, S= Special National condition, D= National deviation, F= Other information, AT= Austria, GB= Great Britain, CH= Switzerland, DE= Germany, DK= Denmark, FI= Finland, FR= France, NO= Norway, SE= Sweden.</p> <p>P= Pass, F= Fail, N= Not applicable. Place in the column to the right.</p>			
1.2.4.1 S	(DK). Certain types of Class I appliances (see sub-clause 3.2.1) may be provided with a plug not establishing earthing continuity when inserted into Danish socket-outlets.	Class III equipment.	<b>N</b>
1.5.1 D	(SE). Add the following:  NOTE: Switches containing mercury such as thermostats, relay and level controllers are not allowed.	No such switch.	<b>N</b>
1.6.4 S	(NO). Note 2: In Norway, due to the IT power system used, capacitors are required to be rated for the applicable phase-to-phase voltage (230V)	Class III equipment.	<b>N</b>
1.7.2 S	(NO). Note 4: In Norway, if separation between the mains and a communication system/network, other than public telecommunication networks, relies upon connection to safety earth, the equipment shall have a marking stating that it must be connected to an earthed mains socket-outlet.  NOTE: For requirements to be connected to a public telecommunication network, see 6.2.1.4.	Class III equipment.	<b>N</b>
1.7.2 S	(SE). If the separation between the mains and a SELV terminal relies upon connection to the safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet when a SELV circuit is connected to network passing both unearthed and earthed electrical environment. The marking text shall be in Swedish and as follows: "Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk".	Class III equipment.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.2 D	(DK). Supply cords of Class I appliances, which are delivered without a plug, must be provided with a visible tag with the following text: "Vigtigt. Lederen med grøn/gul isolation må Kun tilsluttes en klemme mærket  eller  ". If essential for the safety of the appliance, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning".	Class III equipment.	<b>N</b>
1.7.2 C	Delete note 4.	Deleted.	<b>N</b>
1.7.5 S	(DK). 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.	Class III equipment.	<b>N</b>
1.7.5 D	(DK). Class II appliances shall not be fitted with socket-outlets for providing power to other appliances.	Class III equipment.	<b>N</b>
1.7.14 D	(DE). Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labor equipment, also for imported technical labor equipment shall be written in German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	No technical labor equipment.	<b>N</b>
1.7.17 D	(CH). (Ordinance on environmentally hazardous substances SR 814.013) Annex 4.10 of SR 814.013 applies for batteries.	No battery.	<b>N</b>
2.3.3 C	Delete Method 4 and the line in note 1 relating to this method	Deleted.	<b>N</b>
2.3.6 C	Delete the note.	Deleted.	<b>N</b>
2.3.5 S	(NO). In Norway, marking and insulation requirements according to subclause 1.7.2, Note 4, and 6.2.1.4, Note 2, apply.	No marking required.	<b>N</b>
2.3.6 S	(FR). Method 3 is not acceptable.	Class III equipment.	<b>N</b>
2.3.7 C	Replace the text of this sub-clause by: Void.	Replaced.	<b>N</b>
2.3.9 S	(NO). Marking and insulation requirements according to this annex, subclauses 1.7.02 and 6.2.01.4 b) apply.	No marking required.	<b>N</b>
2.5.2 S	(DK, NO) Add after the first paragraph: "The	Added.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	above exception is not acceptable in pluggable equipment type A "		
2.5.2 C	Delete the note.	Deleted.	<b>N</b>
2.7.1 C	<p>Replace the text of this sub-clause by: Basic requirements</p> <p>To protect against excess current, short-circuits and earth faults in primary circuits, protective devices shall be included either as integral parts of the equipment or as a part of the building installation, subject to all of the following a), b), c) and d):</p> <p>(a) Except as detailed in (b) and (c), protective devices necessary to comply with the requirements of Sub-clause 5.4 shall be included as integral parts of the equipment.</p> <p>(b) For components in series with the mains input to the equipment such as the supply cord, appliance coupler, RFI filter and switch, short circuit and earth fault protection may be provided with protective devices in the installation.</p> <p>(c) It is permitted for equipment with rated current exceeding 16A, which is 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 breaker, is fully specified in the installation instruction</p> <p>(d) If reliance is placed on protection in the building installation, the installation instructions shall comply with Sub-clause 1.7.11 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 and 1.7.11 does not apply.</p>	Replaced.	<b>N</b>
2.7.2 C	Replace the text of this sub-clause by: Void.	Replaced.	<b>N</b>
2.8.4 C	Delete the note.	Deleted.	<b>N</b>
2.9.1 S	(NO). Note 3: In Norway, due to the IT power systems used, the mains supply voltage is considered to be equal to the phase-to-phase voltage.	Class III equipment.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
2.9.4.2 C	<p>Amend the last line on page 117a as follows – Solvent-based enamel coating on winding wire is not considered to be insulation in thin sheet material.</p> <p>Add a new sentence below the text on page 117a as follows – Requirements for wound components are given in 2.9.4.4.</p>	Amended.	<b>N</b>
2.9.4.4 C	<p>Modify the title as follows – 6.4.2.4) Wound components</p> <p>Replace the first paragraph and the two dashed paragraphs as follows –</p> <p>Unless one of the following situations applies, interleaved BASIC, SUPPLEMENTARY or REINFORCED INSULATION complying with 2.9.4.1 or 2.9.4.2 shall be provided between the windings.</p> <ul style="list-style-type: none"> <li>* the insulation on the winding wire complies with 2.9.4.1; or</li> <li>* the winding wire complies with annex U; or</li> <li>* the insulation between the windings is provided for separation between TNV circuits and other parts in compliance with 6.4.1.</li> </ul> <p>Note – Examples of insulation of winding wire complying with annex U are polyamide and FEP.</p>	Modified.	<b>N</b>
2.11 C	Delete notes 1, 2 and 3.	Deleted.	<b>N</b>
3.2.1 S	<p>(DK). Supply cords of single phase appliances having a rated current not exceeding 10A 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 10A is provided with a supply cord with a plug, this plug shall be in accordance with the</p>	No power cord provided.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	Heavy Current Regulations Section 107-1-D1 or EN 60309-2.		
3.2.1 S	(CH). Supply cords of equipment having a rated current not exceeding 10A 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 250/400V, 10A SEV 6533-2,1991 Plug type 11 L+ N 250V, 10A SEV 6534-2,1991 Plug type 12 L+ N+ PE 250V, 10A EN 60 309 applies for plugs for currents exceeding 10A	No power cord provided.	<b>N</b>
3.2.1 S	(GB). Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS1363 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. Note: "standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	No power cord provided.	<b>N</b>
3.2.2 C	Delete the note and in table 10, delete the values in parentheses.	Deleted.	<b>N</b>
3.2.4 S	(GB). A power supply cord with conductor of 1.25mm <sup>2</sup> is allowed for equipment with rated current over 10A and up to and including 13A.	No power cord provided.	<b>N</b>
3.2.4 C	Replace "60245 IEC 53" by "H05 RR-F", "60227 IEC 52" by "H03 VV-F or H03 VVH2-F" and "60227 IEC 53" by "H05 VV-F or H05 VVH2-F". In table 11, replace the first four lines by the	Replaced.	<b>N</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>following:</p> <p>Up to and including 6 0.75<sup>1)</sup></p> <p>Over 6 up to and including 10 1.0 (0.75)<sup>2)</sup></p> <p>Over 10 up to and including 16 1.5 (1.0)<sup>3)</sup></p> <p>In the conditions applicable to table 11, delete the words “in some countries” in condition 1).</p> <p>In the Note delete the second sentence.</p>		
3.3.5 C	<p>In table 13, replace the fourth and the fifth lines by:</p> <p>Over 10 up to and including 16 1.5 to 2.5 1.5 to by 4</p>	Replaced.	<b>N</b>
3.3.5 S	(GB). The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10A and up to and including 13A is: 1.25mm <sup>2</sup> to 1.5mm <sup>2</sup> nominal cross-sectional area.	No power cord provided.	<b>N</b>
4.3.18 S	(GB). This test should be performed using an appropriate socket-outlet with an earthing contact.	Class III equipment.	<b>N</b>
4.4.4 C	Delete note 2.	Deleted.	<b>N</b>
5.4.9 S	(NO). Note: In Norway, the electric strength test includes testing of basic insulation in Class I pluggable equipment type B and permanently connected equipment.	Class III equipment.	<b>N</b>
6.1 S	(CH).Protective means in the equipment shall not prevent transient surge protection in the telecommunication network from operating properly (d.c. spark-over voltage of the surge suppressor installed in the telecommunication network: approx. 245V).	No TNV.	<b>N</b>
6.4.2.2) C 6.2.1.3 C	Add at the end of the sub-clause: This sub-clause only applies to TNV circuits normally operating in excess of the limits of SELV circuits.	No TNV.	<b>N</b>
6.2.1.2 S	(SE). Supplementary insulation for a primary circuit is required between any TNV circuit and any circuit that has a connection to a protective earthing terminal.  In Sweden, this requirement does not apply to	No TNV.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	permanently connected equipment or pluggable equipment Type B.		
6.2.1.2 S	(NO). In Norway, supplementary insulation for a primary circuits is required between any TNV circuit and any circuit that has a connection to a protective earthing terminal.  This requirement does not apply to permanently connected equipment or to pluggable equipment type B, installed in areas where equipotential bonding has been applied, e.g. a telecommunication Central Office.	No TNV.	<b>N</b>
6.2.1.4 C	Delete the notes.	Deleted.	<b>N</b>
6.2.1.4 S	(NO). Note 2: In Norway, method b) is not permitted. Insulation between parts conductively connected to the supply mains and parts connected to a public telecommunication network shall comply with the requirements for double or reinforced insulation.	No TNV.	<b>N</b>
6.2.1.4b) S	(FI). Method b) is permitted only for permanently connected equipment or for pluggable equipment Type B.	No TNV.	<b>N</b>
6.2.1.5 S	(NO). Note 2: In Norway, requirements according to 6.2.1.4, Note 2, apply	No TNV.	<b>N</b>
6.3.3. S	(NO). In Norway, 6.3.3 is applicable for pluggable equipment type A and B and for permanently connected equipment.	No TNV.	<b>N</b>
6.3.3.1 S	(SE). In Sweden, requirements according to this annex ZB, subclause 6.2.1.2 apply.	No TNV.	<b>N</b>
6.3.3.1 S	(NO). In Norway, requirements according to subclause 6.2.1.2, national difference, 6.2.1.4, Note 2, and 6.3.3.2, Note 1, applied.	No TNV.	<b>N</b>
6.3.3.2 S	(NO). Note 1: In Norway, exclusions are applicable for permanently connected equipment and pluggable equipment Type B only.	No TNV.	<b>N</b>
6.4.1 C	Delete note 2.	Deleted.	<b>N</b>
6.4.2.1 C	Delete note 2.	Deleted.	<b>N</b>
6.4.2.1 D	(AT). Equipment shall comply with $U_c = 2.0kV$ in cases b) and c).	No TNV.	<b>N</b>
Annex H.	(DE)	No CRT.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
D	<p>a) A license is required by those who operate an X-ray emission source.</p> <p>b) A license in accordance with clause 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV, if</p> <p>1) the local dose rate at a distance of 0.1m from the surface does not exceed 1µSv/h and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated and</p> <p>ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>c) A license in accordance with clause 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV, if</p> <p>1)the X-ray emission source has been granted a type approval and</p> <p>2)it is adequately indicated on the X-ray emission source that</p> <p>i) X-ray are generated,</p> <p>ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local does rate in accordance with the type approval is not exceeded and</p> <p>iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>d)Furthermore, a license in accordance with clause 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV, if</p> <p>1) the X-rays are generated only by intrinsically safety CRTs complying with Enclosure III, No.6,</p> <p>2) the values stipulated in accordance with Enclosure III, bi, 6.2 are limited by technical measures and specified in the device and</p> <p>3) it is adequately indicated on the X-ray</p>		

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.		
Annex P C	Replace the text of this annex by: See annex ZA.	Replaced.	<b>N</b>
Annex Q C	Add for IEC 60529: Note: Endorsed by EN 60529:1991 (not modified) Add for IEC 60707 Note: Endorsed by HD441:1983 (not modified) Add for IEC 61058-1: Note: Endorsed by EN 61058:1992 (not modified).	Added.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	EMKO-TSE(74-SEC)207/94 TO EN 60950:1992+ A1:1993+ A2:1993+ A3:1995+ A4:1997+ A11:1997 TEST REPORT  (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)  Nordic Explanations, and other information not covered by Appendix EN 60950:1992, + A1:1993 + A2:1993 + A3:1995 + A4:1997+ A11:1997.		<b>P</b>
<p>EXPLANATION FOR ABBREVIATIONS</p> <p>NF= Nordic Explanations and other information. DK= Denmark, FI= Finland, NO= Norway, SE= Sweden.</p> <p>P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.</p>			
1.2.02.01 NF	(DK,FI,NO,SE). The heating test of separate power supplies of personal computers is carried out according to their rated output values marked on the power supplies.	Not separate power supply of personal computer.	<b>N</b>
1.5.01 NF	(DK,FI,NO,SE). The following capacitors are accepted across the mains:  1) X1 capacitor which complies with Publication IEC 60 384-14.  2) X2 capacitor which complies with Publication IEC 60 384-14 and which has been subjected to a pulse test according to § 12.11.2, except the value of the voltage is reduced to 2.5 kV.  3) X2 capacitor which complies with Publication IEC 60 384-14 in case the endurance test of § 12.11.2 has been modified so that the resistor of 220Ω through which the voltage of 1000 V rms is applied to the capacitor under test, is short circuited.  4) Capacitor which complies with Publication HD 195 S6, § 14.2.	Class III equipment.	<b>N</b>
1.5.02 NF	(DK,FI,NO,SE). Transient protection components shall be installed in such a way that insulation for protection against electric shock will not be bridge. This means that transient protection components must not be connected to safety earthed parts in pluggable equipment or to other accessible parts.	Class III equipment.	<b>N</b>
	-3.2.3 (DK,FI,NO,SE). Interconnection couplers in accordance with EN 60 320-2-2 are accepted. Outlets of non-standard types are not accepted.	Class III equipment.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.01 NF	-1st dash (DK). When supplied in Denmark the appliances shall be set to 230 V .	Class III equipment.	<b>N</b>
	-5th dash (DK). The equipment may instead be provided with a marking indicating name, trade-mark or identify of the responsible vendor.	See copy of the marking plate of IEC 60950 report.	<b>P</b>
2.1.04 NF	(DK,FI,NO,SE). For monitors, warning label is not required for repairing area, neither the partial shielding against contact although the voltage is > 42.4 V peak or > 60 V d.c.	No monitor.	<b>N</b>
2.5.11 NF	(DK,FI,NO,SE). Due to installation fuses of 16A, the earth resistance shall always be controlled at 25 A.	Class III equipment.	<b>N</b>
2.6.06 NF	(DK,FI,NO,SE). The plug is regarded to be a disconnect device and therefore a single pole mains switch is acceptable (TC 74-WG 8's recommendation).	Class III equipment.	<b>N</b>
2.6.11 NF	(DK,FI,NO). The warning label on an appliance with two or several supply connections shall be in the official language of the country in question.	Class III equipment.	<b>N</b>
	(DK,FI,NO). UPS-appliances can be fitted with a signal lamp instead of a warning label, under the condition that the function and location of the signal lamp is correct. Audible signal is not acceptable as warning.	No UPS.	<b>N</b>
2.7.03 NF	(DK,FI,NO,SE). A single-pole protective device is acceptable.	Class III equipment.	<b>N</b>
2.9.01 NF	(DK,FI,NO,SE). Pollution Degree 3 is considered applicable for the following equipment which is within the scope of this standard: Document Shredder Machines.	No shredding machine.	<b>N</b>
4.2.07 NF	(DK,FI,NO,SE). If there are visible cracks on the apparatus after the mechanical strength test, the apparatus is not rejected, if it still complies with the other requirements of subclause 4.2.7.	Class III equipment.	<b>N</b>
4.4.04 NF	(DK,FI). Fire enclosure is required if the available power exceeds the values of a limited power source. The limited power source shall incorporate an isolating transformer and shall comply with the following:  * The open-circuit voltage shall not exceed 42.4 V peak or d.c. and shall not generate	Not required.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	voltages above the value and * The current which may be drawn for more than two minutes at any load, including short-circuit, shall not exceed 0.2 A.		
	(NO). A fire enclosure is not required in spots of the equipment where the available power does not exceeded 50 VA and the available voltage 42.4 V (peak) or 60 V d.c.	No fire enclosure provided.	<b>N</b>
5.4.06 NF	(DK,FI,NO,SE). Faults need not to be carried out in circuits which are supplied by an isolating transformer and which comply with the following: * The open-circuit voltage shall not exceed 42.4 V peak or d.c. and shall not generate voltages above the value and * The current which may be drawn for more than two minutes at any load, including short-circuit, shall not exceed 0.2 A.		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	China National Differences according to CB Bulletin, No. 101A, December 2001 REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
1.4.5, 1.6.5	The minimum supply tolerance is –10%, + 6%; GB4943 sub-clause 1.4.5 and 1.6.5: The minimum supply tolerance is –10%, + 10% according to Chinese situation.	No direct connection to mains.	<b>N</b>
	IEC standard for plug is IEC 60083. The Chinese National standard for Plugs is GB1002-1996, which is not equivalent with IEC60083.	Class III equipment.	<b>N</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Japanese National Differences according to CB Bulletin No. 101A, December 2001 REPORT (IEC Publication 60950 : 1991 + A1 + A2 + A3 + A4)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
2.9.2.1	Delete entire column headed by [Nominal mains supply voltage ≤150V (Transient rating 1500V)] in Table 3.  Delete > 150V from column headed by “Nominal mains supply voltage > 150V, ≤300V (Transient rating 2500V)” in Table 3.	Class III equipment.	<b>N</b>
2.9.2.2	Delete entire column headed by “Nominal mains supply voltage ≤150V (Maximum transient in secondary circuit 800V see condition 6)” in Table 5	Class III equipment.	<b>N</b>
2.9.4.4	Replacement: The following shall replace the entire existing paragraphs:  Title: Wounded components  BASIC, SUPPLEMENTARY, DOUBLE or REINFORCED INSULATION is permitted in a wounded component using one of the following a), b), or c) constructions or the wounded component must use interleaved insulation which complies with 2.9.4.1 or 2.9.4.2:  a) the winding wire is insulated with insulation complying with 2.9.4.1 other than solution based type enamel coatings.  b) the winding wire is insulated with extruded multi-layers or wrapped layers of tape (each layer can be tested for electric strength) which complies with 2.9.4.1 and complies with annex U.  c) the winding wire is insulated with extruded multi layers or wrapped layers of tape (test can be only performed on finished winding wire) and complies with annex U.  Note 1 – see also 6.4.1.  As to c), the number of constructional layers applied to the conductor to determine the grade of insulation of the winding wire shall not be less than as follows:  * if BASIC INSULATION is required, a minimum	Different Japanese standard text considered.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>of two layers or one extruded layer</p> <p>* if SUPPLEMENTARY INSULATION is required, a minimum of two layers or two extruded layers</p> <p>* if REINFORCED INSULATION is required, a minimum of three layers or three extruded layers</p> <p>As to b) and c), in case the CREEPAGE DISTANCES between wrapped layers of tape are less than Table 6 under Pollution degree 1, the distance between layers must be reliably cement together with insulation compound complying with 2.9.7 and with the test voltage in annex U.2 (Type tests) increased to 1.6 times.</p> <p>Note 2 – In case one layer of material is wrapped 50% or more, it is considered as two layers</p> <p>Where two insulated wires or one bare wire and one insulated wire are contacted inside the component and cross each other at an angle between 45° and 90°, physical separation shall be provided, for example in the form of insulating sleeving or sheet material, or by applying two times of the specified insulating layer(s), to relieve mechanical stress at the crossover point.</p> <p>The finished component shall pass ROUTINE TESTING for electric strength using the value of test voltage in 5.3.</p> <p>Compliance is checked by visual inspection and measurement, and as specified in annex U. However, the tests are not repeated if the material data sheets confirm compliance with annex U.</p>		
5.1	<p>Addition:</p> <p>Add the following to 5) as specified in Conditions applicable to table 16, parts 1 and 2</p> <p>With regards to 1), insulating materials complying with Japanese requirement (Refer to Japanese difference for current IEC 60335-1 (3<sup>rd</sup> Edition) in CB Bulletin 94B), can be taken of data for that material to determine the appropriate maximum temperature rise.</p>	For other than those complied with IEC standards, refer to added condition 8) below.	<b>P</b>
Annex U	Replacement:	Replaced, no insulated	<b>N</b>

National Deviation											
Clause	Requirement – Test	Result – Remark	Verdict								
	<p>ANNEX U (normative)</p> <p>Insulated winding wires for use without interleaved insulation (see 2.9.4.4)</p> <p>This annex specifies winding wire whose insulation may be used to provide BASIC, SUPPLEMENTARY or REINFORCED INSULATION in wound components without interleaved insulation.</p> <p>This annex applies to round winding wire whose diameter is between 0.2mm and 1.00mm. With regard to other size, refer to IEC 60851.</p>	winding wires for use without interleaved insulation.									
	<p>U.1 Wire construction</p> <p>If the wire is insulated with two or more spirally wrapped layers of tape, the overlap of layers shall be adequate to ensure continued overlap during manufacture of the wound component. In order to maintain the overlap of layers, wire insulation layer of wrapped layers of tape must be adequately secured.</p>		<b>N</b>								
	<p>U.2 Type tests</p> <p>Unless it specifies, the wire shall pass the following six TYPE TESTS U.2.1 to U.2.4, carried out at a temperature between 15°C and 35°C and a relative humidity between 45% and 75%. Refer to the IEC 60851 first edition.</p>		<b>N</b>								
	<p>U.2.1 Electric strength</p> <p>Test 13 of IEC 60851-5 (1988), 4.3.1 (test for twisted wire pairs), with a test voltage 2 times of appropriate voltage in Table 18 of this standard or 6kVr.m.s. whichever is the greater.</p>		<b>N</b>								
	<p>U.2.2 Adherence and flexibility</p> <p>Test 8 of IEC 60851-3, with a test voltage not less than the appropriate voltage in Table 18 of this standard or 3kVr.m.s. whichever is the greater.</p> <p>Table U.2.2.2 – Mandrel</p> <table border="0"> <tr> <td>Nominal diameter of conductor (mm)</td> <td>Mandrel diameter (mm±0.2mm)</td> </tr> <tr> <td>(20) – 0.34</td> <td>4.0</td> </tr> <tr> <td>(21) – 0.49</td> <td>6.0</td> </tr> <tr> <td>(22) – 0.74</td> <td>8.0</td> </tr> </table>	Nominal diameter of conductor (mm)	Mandrel diameter (mm±0.2mm)	(20) – 0.34	4.0	(21) – 0.49	6.0	(22) – 0.74	8.0		<b>N</b>
Nominal diameter of conductor (mm)	Mandrel diameter (mm±0.2mm)										
(20) – 0.34	4.0										
(21) – 0.49	6.0										
(22) – 0.74	8.0										

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	(23) – 1.00 10.0 The tension of winding wire while wire is wrapped around the mandrel, should be calculated so that it is equivalent to 118Mpa± 10% (118N/mm <sup>2</sup> ±10%) from winding wire radial.		
	U.2.3 Heat shock Test 9 of IEC 60851-6, 3.1 and IEC 60851-3, 5.1.1.1, with a test voltage not less than the appropriate voltage in Table 18 of this standard or 3kVr.m.s. whichever is the greater. The temperature of oven is specified in the following Table U.2.3. Table U.2.2 shows and explains required mandrel diameter and tension. Test must be performed at room ambient after taking out from oven. Table U.2.3 – Oven Temperature Class A E B F H (105) (120) (130) (155) (180) Oven Temp. 200 215 225 240 260 (° C±2° C)		<b>N</b>
	U.2.4 Retention of electric strength after bending Test 13 of IEC 60851-5 (1988), 4.6.1 c, with a test voltage not less than the appropriate voltage in Table 18 of this standard or 3kVr.m.s. whichever is the greater. Table U.2.2 shows and explains required mandrel diameter and tension.		<b>N</b>
	U.3 Routine test Winding wire is subjected to electric strength test during the production in accordance with U.3.1 and U.3.2 by wire manufacturer.		<b>N</b>
	U.3.1 Full-length test Winding wire is subjected to electric strength test during the production for full wire length, with a test voltage not less than the appropriate voltage in Table 18 of this standard or 3kVr.m.s. or 4.2kV peak minimum.		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	U.3.2 Audit test Test must be carried out according to IEC 60851-5 (1988) for twisted wire pairs. Electric strength test, with a test voltage 2 times of appropriate voltage in Table 18 of this standard or 6kVr.m.s. or 8.4kV peak minimum.		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Korean National Differences according to CB Bulletin, No. 101A, December 2001  REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
General	LIMITATIONS - Voltage ratings  As national supply voltage is subject to be increased to 220V, an appliance rated 220V is to be allowed to obtain type approval in Korea. Either an appliance rated 110V or 220/110V is not allowed. When an appliance is supplied in Korea, it shall be set to and marked with 220V.  But free voltage appliance by SMPS (Switching Mode Power Supply) is allowed and it shall be marked with "100-220V".	Class III equipment.	<b>N</b>
General	LIMITATIONS – Frequency  Only appliances having supply frequency of 60Hz or a frequency range including 60Hz are accepted. When an appliance is supplied in Korea, it shall be set to and marked with 60Hz.	Class III equipment.	<b>N</b>
General	LIMITATIONS - Instruction  Instruction manuals and appliance markings related to safety, including nameplate shall be in Korean or graphical symbols in IEC Publication 60417.	Instruction manual will be in Korean.	<b>N</b>
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirements (KSC 8305).	No power cord provided.	<b>N</b>
7	Addition:  Radio frequency interference  The apparatus shall comply with the relevant CISPR requirements.	The CISPR requirements have to be evaluated when submitted for national approval.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Singapore National Differences according to CB Bulletin, No. 101A, December 2001  REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
General	IT Power Systems are not allowed in the Republic of Singapore and all clauses related to IT Power Systems are not applicable.	Class III equipment.	<b>N</b>
2.2.3	(a) After the first paragraph, insert the following:  Conditions described in IEC Publication 60068-2-3: Test Ca: Damp Heat, Steady State (temperature: 40± 2°C, relative humidity: 90% to 95%) shall apply to insulation to be used under tropical conditions. The duration of the humidity conditioning is 5 days (120h) under tropical conditions.  (b) At the end of the last paragraph, insert the following note:  NOTE: The additional requirement on humidity conditioning is drawn from Clause 10.2 of IEC 60065:1985.	Class III equipment.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Israel National Differences according to CB Bulletin, No. 101A, December 2001  REPORT (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
1.2.12.1	TN Power Distribution:  The mains system in Israel is TN-S or TN-C or TN-C-S.	Class III equipment.	<b>N</b>
1.7	Marking and Instructions:  The package of the equipment shall be marked in Hebrew, and shall include: (a) The name of the manufacturer (b) The country of production (c) The year of production (d) The name and the address of the importer (e) The marking shall be on a rectangular label (of at least 50mm X 24mm) (f) The letters height should be at least 2mm (g) The color of the label shall be in contrast to the color of the package.	Shall be evaluated in national mark approval.	<b>N</b>
1.7.14	Language:  All instructions and warnings concerning safety should be in the Hebrew language	Shall be evaluated in national mark approval.	<b>N</b>
2.101	EMC:  The equipment shall comply with SI 961 part 6 (CISPR 22 + 24)	Shall be provided and evaluated in national mark approval.	<b>N</b>
3.2.2	Permanently connected equipment:  Additional note below table 10:  In Israel the diameter of the conduit shall comply with the Electricity Law.		<b>N</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Australian National Differences according to CB Bulletin No. 101A, December 2001 (AS/NZS 3260-1993) REPORT (IEC Publication 60950 2 <sup>nd</sup> edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
1.2.12.2	Add: "TT power systems are not permitted in Australia or New Zealand."	Class III equipment.	<b>N</b>
1.2.12.3	Add: "IT power systems are not permitted in Australia or New Zealand."  Note: Australia and New Zealand principally use multiple-earthed neutral (MEN) systems but allow TN-C for installations using metal-sheathed cables.	Class III equipment.	<b>N</b>
1.5.1	Add to paragraph 1: "or the other relevant Australian or New Zealand Standard."	Added.	<b>P</b>
1.5.2	Add to the first and third dashed items after the words "IEC component standard": "or the other relevant Australian or New Zealand Standard."	Added.	<b>P</b>
1.7.14	Add to paragraph 1: "In Australia and New Zealand all safety instructions shall be in English."	Installation instruction is in English.	<b>P</b>
2	Add after clause 2: "For the limit of direct current from a.c. appliances, refer to AS/NZS Appendix 3."	See Appendix 3.	<b>N</b>
3.2.2	Substitute for table 10: "For sizes of cables and conduits in Australia, refer to AS 3000."	No power cord provided.	<b>N</b>
3.2.4	Substitute for table 11: "For sizes of conductors in power supply cords use following Table 11:  <b>Table 11</b> <b>Sizes of conductors in power supply cords</b> Rated current (A)    Cross-section area (mm <sup>2</sup> ) > 0.2 ≤ 3                      0.5* > 3 ≤ 7.5                        0.75 > 7.5 ≤ 10                        1 > 10 ≤ 16                        1.5 > 16 ≤ 25                        2.5 > 25 ≤ 32                        4	dto	<b>N</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>- in case (b) and (c) 1.5kV.</p> <p>The voltage is gradually raised from zero to the prescribed voltage and then held at that value for 60s.</p> <p>NOTE:</p> <p>1. Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</p> <p>2. The 3 kV and 1.5kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>		
Annex A	<p>Add. after Annex title:</p> <p>Alternative resistance to fire test-determination if ignitability and combustion propagation</p>	Not applied for this Appendix.	<b>N</b>
Appendix 2	<p>Add. Appendix</p> <p>ALTERNATE RESISTANCE TO FIRE TEST DETERMINATION OF IGNITABILITY AND COMBUSTION PROPAGATION</p>	Not applied for this Appendix.	<b>N</b>
X2.0	<p>GENERAL</p> <p>This test is an alternative to the testes in Annex A to allow approval of equipment which has inadequate documentation to verify having been tested to Annex A.</p>		<b>N</b>
X2.1	<p>SOLID INSULATION MATERIALS AND NON-METALLIC ENCLOSURES</p>		<b>N</b>
X2.1.1	<p>GENERAL REQUIREMENTS 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 wiring insulation and other parts not likely to be ignited or to propagate flames from inside the equipment.</p> <p>Compliance is checked by the tests of Clauses X2.1.2, X2.1.3 and X2.1.4 as applicable and if necessary by the test of X2.2</p>		<b>N</b>
X2.1.2	<p>NON-METALLIC MATERIAL</p> <p>Relevant parts of non-metallic material are subjected to the glow-wire test of AS/NZS 3350.1, the test being made at a temperature of 550° C.</p> <p>The 550° C glow-wire test need not be carried</p>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>out on parts which are made of material classified as FH 3-40 mm/min or better according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be thicker than the relevant part.</p> <p>Insulating material of winding bobbins and formers are subject to the glow-wire test of AS/NZS 3350.1, the test being made a temperature of 650° C.</p> <p>Base material of printed circuit boards with any coating or encapsulation to the needle-flame test of AS/NZS 3350.1, however, flames shall have extinguished with 15s of removal of the test flame. The flame shall be applied to an edge of the board having the lowest heat sink effect, with the board orientated in its normal position of use and at a point, if possible, not less than 10mm from a corner.</p> <p>The needle-flame test is not carried out on base material which is made of material classified as FV-0 according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be no thicker than that of the relevant printed circuit board.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. The test is not carried out on printed circuit boards contained in a metal enclosure that prevents flames or burning droplets from escaping.</li> <li>2. If the printed circuit board is tested with components mounted and a component ignites during the test, this would not constitute a failure of the printed circuit board material unless it is ignited by the component.</li> </ol>		
X2.1.3	<p><b>ATTENDED EQUIPMENT</b></p> <p>For equipment which is operated while attended, parts of insulating material supporting, in contact with or in close proximity to current carrying connections, other than those in SELV circuits are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 650° C. However parts of insulating material supporting, in contact with or in close proximity to screw connections which carry a current exceeding 0.5A during normal operation and which are likely to be made or</p>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>remade during installation, user maintenance or when replacing a supply cord assembled with the appliance by Type X attachment, are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 750° C.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. The test is not carried out on parts supporting welded connections.</li> <li>2. 'In close proximity' is considered to be a distance not exceeding 3mm.</li> </ol>		
X2.1.4	<p><b>UNATTENDED EQUIPMENT</b></p> <p>For equipment which is operated while unattended, parts of insulating material supporting, in contact with or in close proximity to current carrying connections, other than those in SELV circuits are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 750° C. However parts of insulating material supporting, in contact with or in close proximity to screw connections which carry a current exceeding 0.5A during normal operation and which are likely to be made or remade during installation, user maintenance or when replacing a supply cord assembled with the appliance by Type X attachment, are subject to the glow-wire test AS/NZS 3350.1, the test being made at a temperature of 850° C.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. The test is not carried out on parts supporting welded connections.</li> <li>2. 'In close proximity' is considered to be a distance not exceeding 3mm.</li> </ol> <p>During the application of glow-wire, the height and duration of flames are measured.</p> <p>In addition, for parts which withstand the glow-wire test but which flame during the application of the glow-wire, the surrounding parts are subject to the needle-flame test of AS/NZS 3350.1 for the measured duration of the flame after or 30s, whichever is the least if -</p> <ol style="list-style-type: none"> <li>a) They are positioned within a distance equal to the height of the flame; and</li> <li>b) they are likely to be impinged upon by the flame</li> </ol>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>However, surrounding parts shielded by a separate barrier which meets the needle-flame test are not tested.</p> <p>The needle-flame test is not carried out on parts which are made of material classified as FV-0 or FV-1 according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be no thicker than the relevant part.</p> <p>Note: 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 10mm and a height equal to the height of flame, positioned above the point of the material supporting, in contact with or in close proximity to connections.</p>		
X2.2	<p><b>ADDITIONAL TEST REQUIREMENTS</b></p> <p>If parts, other than enclosures, do not withstand the test of clauses X2.1.3 or X2.1.4, by failure to extinguish within 30s after removal of the glow wire tip, the needle-flame test of AS/NZS 3350.1 is made on all parts of non-metallic material which are within a distance of 50mm or which are likely to be impinged upon by flame during the test of clauses X2.1.3 or X2.1.4. Parts shielded by a separate barrier which meets the flame-needle test are not tested.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. If the enclosure does not withstand the glow-wire test the appliance is considered to have failed to meet the requirement of Appendix 2 without the need for consequential testing.</li> <li>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 appliance, the appliance is considered to have failed to meet the requirement of Appendix 2 without the need for consequential testing.</li> <li>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 10mm 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.</li> </ol>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	The needle-flame test need not be carried out on parts which are made of classified as FV-0 or FV-1 according to IEC 60707. The sample of material submitted to the test of IEC 60707 shall be no thicker than the relevant part.		
Appendix 3	<p>Add Appendix:</p> <p>D.C. COMPONENTS FROM A.C. EQUIPMENT</p> <p>Equipment shall be designed so that in normal use the value of any direct current in the equipment neutral will not contribute unduly to the failure of the installation earth electrode by corrosion.</p> <p>Any device such as isolating transformer intended to prevent direct current in the supply shall be an integral part of the equipment.</p> <p>Compliance is checked by inspection and by operating the equipment</p> <p>(a) at the rated voltage under the conditions specified in Clause 5.1;</p> <p>(b) on a supply free from any d.c. component; and</p> <p>(c) in the maximum d.c. producing mode, if any, but not exceeding normal load;</p> <p>and measuring the d.c. component in the supply neutral caused by the equipment as described below.</p> <p>If it is evident from the design of the equipment that there will be no d.c. component, e.g. equipment provided with a full-wave mains power supply or a mains isolating transformer, this test is not conducted.</p> <p>The permissible direct current in the equipment neutral shall not exceed</p> <p>(i) for equipment considered as operating continuously ..... 5 mA; or</p> <p>(ii) for other than continuously operated equipment where t is the assessed daily average operating time, in hours .....(5*24)/t mA</p> <p>For equipment which is not continuously operated but includes a component or a device which is continuously energized, e.g. stand-by</p>	Class III equipment.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>control or remote switching device, the summation of the product of the direct current from the control device over 24h and the direct current from the equipment for its assessed daily average operating time in hours shall not exceed 120mAh per day.</p> <p>The maximum value of direct current permitted in the neutral is 1.44A which could be applicable to equipment with an assessed average daily operating time of 5 min. or less.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. When determining the assessed daily average operating time the approvals authority may accept evidence supplied by the manufacturer.</li> <li>2. The d.c. peak value due to transient starting effects is ignored.</li> </ol> <p>The measuring system used to measure any direct current produced shall have a sufficiently high normal (series) mode rejection ratio, by the use of a low pass filter if necessary, to ensure that an overall uncertainty of less than 10% can be achieved.</p>		



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	Canadian National Differences according to CB Bulletin No. 101A, December 2001  (IEC Publication 60950 2nd edition, 1991 + Amd.1, 1992 + Amd.2, 1993 + Amd.3, 1995 + Amd.4, 1996)		<b>P</b>
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**EXPLANATION FOR ABBREVIATIONS**

P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.

**Special National Conditions**

1.1.1	All equipment installations are required to be in accordance with the Canadian Electrical Code (CEC). Part 1, CAN/CSA C22.1, and with National Electrical Code (NEC), ANSI/NFPA 70, and, unless marked or otherwise identified, the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Considered.	<b>P</b>
1.7.1	Equipment for use on 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.  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 extended into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than specified "Normal Operating Condition," unless it is part of a range that extends into the "Normal Operating Conditions."	Class III equipment.	<b>N</b>
2.5.9	Terminals for permanent wiring are required to be suitable for U.S./Canadian wire gauge sizes and be rated 125 percent of the equipment rating.	Class III equipment.	<b>N</b>
2.5.11	When subject to impedance testing, protective earthing and bonding are required to be tested to the additional test conditions that originate in CAN/CSA C22.2 No. 0.4.	Class III equipment.	<b>N</b>
2.6.2	Motor control devices are required for cord-connected equipment with a motor if the motor (a) has a nominal voltage rating greater than 120V, (b) in rated more than 12 A, or <sup>®</sup> is rated more than 1/3 hp (locked rotor current over 43 A).	No motor control device.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.8	Vertically-mounted disconnect switches and circuit breakers are required to have the “on” position indicated by the handle in the up position.	No vertically mounted disconnect switch or circuit breaker.	<b>N</b>
2.6.11	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.	<b>N</b>
2.7.1	Suitable NEC/CEC branch circuit protection is required for all standard supply outlets and medium-base or smaller lampholders if the supply branch circuit protection is not suitable.  Power distribution transformers distributing power at 100 volts or more, and rated 10KVA or more, required transformer overcurrent protection.  Panelboards provided as part of information technology equipment are required to have suitable overcurrent protection.	No standard supply outlets or medium-base or smaller lampholders.	<b>N</b>
2.7.6	Fuses provided in the earthed circuit conductor (neutral) are only permitted for equipment rated 125V, 15A.	Class III equipment.	<b>N</b>
2.11	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.		<b>N</b>
3.1.12	For lengths exceeding 2 m, external interconnecting flexible cord and cable assemblies are required to be suitable cable type (e.g. DP, CL2) described in the NEC.  For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies which are not types specified in the CEC/NEC are required to have special construction features and identification markings.	Class III equipment.	<b>N</b>
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the CEC/NEC.	Class III equipment.	<b>N</b>
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 cord provided.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.2	Permanent connection of equipment to the mains by a power supply cord is not permitted. except for certain equipment, such as ATMs.	Dto	N
3.2.4	Power supply cords are required to be not longer than 4.5 m in length. Flexible power supply cords are required to be compatible with article 400 of the NEC	Dto	N
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wiring bending space.	Class III equipment.	N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CAN/CSA No. 0.	Class III equipment.	N
3.3.3	Wiring binding screws are not permitted to attach conductors larger than 10 AWG (5.3mm <sup>2</sup> ).	No wire binding screws.	N
4.3.12	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C1370, as applicable.	No laser.	N
4.4.1	For computer room application, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No automated information storage system.	N
4.4.4	For computer room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> or a single dimension greater than 1.8 m, are required to have flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.	Enclosure is far smaller than 0.9m <sup>2</sup> or 1.8m in a single dimension.	N
4.4.8	The maximum quantity of flammable liquid stored in equipment is required to meet NFPA 30.	No liquid.	N
Annex H	Equipment that produces ionizing radiation is required to comply with Code of Federal Regulations, 21 CFR 1020 and/or Canadian Radiation Emitting Devices Act, REDR C1370, as applicable.		N
<b>Other Differences</b>			

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
1.5.1	<p>Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the Canadian or U.S. components standards, as far as they may apply.</p> <p>The acceptance will be based on the following:</p> <p>A) A component certified by a Canadian or U.S. NCB to a Canadian or U.S. component standard will be checked for correct application and use in accordance with its specified rating. Where necessary, it will also be subjected to the applicable tests of the equipment standard.</p> <p>B) A component which has a CB Test Certificate for compliance with a relevant IEC component standard will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be subjected to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and U.S. component standard, under the conditions occurring in the equipment.</p> <p>C) A component which has no approval as in A) or B) above or which is used not in accordance its specified ratings, will be subjected to the applicable tests of the equipment standard, and to the applicable tests of the Canadian or U.S. component standard, under the conditions occurring in the equipment.</p> <p>D) Some components may require annual re-testing which may be carried out by the manufacturer, CSA or another laboratory.</p>	Components are UL or CSA approved, see component list 1.5.1.	<b>P</b>
3.4	Equipment connected to a centralized d.c. power system is required to meet special earthing wiring and marking requirements.	No connection to centralized d.c. power system.	<b>N</b>
4.1.6	Wall and ceiling mounted equipment is required to comply with special loading tests.	No wall or ceiling mounted equipment.	<b>N</b>
4.1.7	Equipment with handles is required to comply with special loading tests.	No handles.	<b>N</b>
4.2.9	Enclosures around C.R.T's having a diagonal dimension of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT.	<b>N</b>
6.2.1.1	Under normal operating conditions, the maximum acceptable TNN-2 and TNV-3 circuit	No TNV.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	levels for other than ringing signals are: (Uac/42.4 + Udc/60) < = 1.		
6.2.2.2	Access restrictions to TNV-2 and TNV-3 circuits in battery compartment also apply to TNV-1 circuits.	No TNV.	<b>N</b>
6.3.4.3	Equipment intended to receive telecommunication ringing signals is required to comply with special leakage current measurement tests.	No TNV.	<b>N</b>
6.4.1	Enamel coating on winding wire not considered electrical separation unless subject to special investigation.	No TNV.	<b>N</b>
6.4.3	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against the ear is required to comply with special acoustic pressure tests.	No TNV.	<b>N</b>
6.5	Where a fuse is used to provide current limiting, it shall not be operator-accessible unless it is not interchangeable.	No TNV.	<b>N</b>
6.6	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV.	<b>N</b>
M.2	Continuous ringing signals up to 16 mA only are permitted if subject to special installation and performance restrictions.	No TNV.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	US National Differences according to CB Bulletin No. 101A, December 2001 for IEC 60950 (1991) 2nd Edition, Amendment No.1 (1992), Amendment No. 2 (1993), Amendment No. 3 (1995) and Amendment No. 4 (1996)		<b>P</b>
EXPLANATION FOR ABBREVIATIONS			
P= Pass, F= Fail, N= Not applicable. Placed in the column to the right.			
The following national differences are based on national regulatory requirements.			
1.1.1	All equipment installations are required to be in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for the Protection Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Considered.	<b>P</b>
1.7.1	Equipment for use on supply systems with a neutral and more than one phase conductor (e.g. 120/240V, 3-wire) require a special marking format for electrical rating.  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".	Class III equipment.	<b>N</b>
2.5.9	Terminals for permanent wiring are required to be suitable for U.S./Canadian wire gauge sizes and be rated 125 percent of the equipment rating.	Class III equipment.	<b>N</b>
2.5.11	The capacity of the connection between the earthing terminal and parts required to be earthed is required to comply with CAN/CSA C22.2 No. 0.4.	Class III equipment.	<b>N</b>
2.6.2	Motor control devices are required for cord-connected equipment with a motor if the motor (a) has a nominal voltage rating greater than 120V, (b) is rated more than 12A, or (c) is rated more than 1/3 hp (locked rotor current over 43A).	No motor control device.	<b>N</b>
2.6.8	Vertically mounted disconnect switches and circuit breakers are required to have the "on"	No vertically mounted disconnect switch or circuit	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	position indicated by the handle in the “up” position.	breaker.	
2.6.11	For computer room applications, equipment with battery systems capable of supplying 750VA 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.	<b>N</b>
2.7.1	Suitable NEC/CEC branch circuit protection is required for all standard supply outlets and medium-base or smaller lampholders if the supply branch circuit protection is not suitable.  Power distribution transformers distributing power at 100 volts or more, and rated 10kVA or more, require transformer overcurrent protection.  Panelboards provided as part of information technology equipment are required to have suitable overcurrent protection.	No standard supply outlets or medium-base or smaller lampholders.	<b>N</b>
2.7.6	Fuses provided in the earthed circuit conductor (neutral) are only permitted for equipment rated 125V, 15A.	Class III equipment.	<b>N</b>
2.11	Where a fuse is used to provide current limiting, it shall not be operator-accessible unless it is not interchangeable.		<b>N</b>
3.1.12	For lengths exceeding 3.05m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) described in the NEC.  For length 3.05m or less, external interconnecting flexible cord and cable assemblies which are not types specified in the NEC are required to have special construction features and identical markings.	Class III equipment.	<b>N</b>
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC	Class III equipment.	<b>N</b>
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 cord provided.	<b>N</b>
3.2.2	Permanent connection of equipment to the mains by a power supply cord is not permitted.	Dto	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.4	Power supply cords are required to be no longer than 4.5m in length.  Flexible power supply cords are required to be compatible with Article 400 of the NEC and Table 12 of the CEC.	Dto	<b>N</b>
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wiring bending space.	Class III equipment.	<b>N</b>
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	Class III equipment.	<b>N</b>
3.3.3	Wire binding screws are not permitted to attach supply conductors larger than 10 AWG (5.3mm <sup>2</sup> ).	No wire binding screws.	<b>N</b>
4.3.12	Equipment with lasers is required to meet Code of Federal Regulations 21CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C1370.	No laser.	<b>N</b>
4.4.1	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No automated information storage system.	<b>N</b>
4.4.4	For computer room applications, enclosures with combustible material measuring greater than 0.93m <sup>2</sup> or having a single dimension greater than 1.8m 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.	Enclosure is far smaller than 0.9m <sup>2</sup> or 1.8m in a single dimension.	<b>N</b>
4.4.8	The maximum quantity of flammable liquid stored in equipment is required to meet NFPA 30.	No liquid.	<b>N</b>
The following 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 (U.S. and Canadian)	Components are UL approved, see component list 1.5.1.	<b>P</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>component or material requirements. These components include:</p> <p>attachment plugs, cathode ray tubes, circuit breakers, communication circuit accessories, cord sets and power supply cords, enclosures (outdoor), flexible cords and cables, fuses, fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, lampholders, limit controls, printed wiring, protectors for communication circuits, receptacles, solid state controls, supplementary protectors, surge suppressors, switches, thermal cutoffs, thermostats, tubing, wire connectors, and wire and cables.</p>		
3.4	Equipment connected to a centralized d.c. power system is required to meet special earthing, wiring and marking requirements.	No connection to centralized d.c. power system.	<b>N</b>
4.1.6	Wall and ceiling mounted equipment is required to comply with special loading tests.	No wall or ceiling mounted equipment.	<b>N</b>
4.1.7	Equipment with handles is required to comply with special loading tests.	No handles.	<b>N</b>
4.2.9	Enclosures around CRT's with a face area of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT.	<b>N</b>
6.2.1.1	<p>The maximum acceptable TNV circuit levels for other than ringing signals are:</p> <p>normal condition-</p> $(U_{ac}/42.4 + U_{dc}/42.4 \leq 1 \text{ for } U_{dc} \leq 21.2)$ $(U_{ac}/32.8 + U_{dc}/60) \leq 1 \text{ for } U_{dc} > 21.2$ <p>abnormal conditions-</p> $(U_{ac}/70.7 + U_{dc}/120) \leq 1$	No TNV.	<b>N</b>
6.2.2.2	Access restrictions to TNV-2 and TNV-3 circuits in battery compartments also apply to TNV-1 circuits.	No TNV.	<b>N</b>
6.3.4.3	Equipment intended to receive telecommunication ringing signals is required to comply with special leakage current measurement test.	No TNV.	<b>N</b>
6.4.1	Enamel coating on winding wire are not considered electrical separation unless subjected to special investigation.	No TNV.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
6.4.3	Equipment connected to a telecommunication network and supplied with an earphone intended to be held against the ear is required to comply with special acoustic pressure tests.	No TNV.	<b>N</b>
6.5	Equipment intended to provide power over the telecommunication wiring system is required to limit output current to values which will not damage the telecommunication wiring system.	No TNV.	<b>N</b>
6.6	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage.	No TNV.	<b>N</b>
M.2	Continuous ringing signals up to 16mA only are permitted if subjected to special installation and performance restriction.	No TNV.	<b>N</b>