

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*

Name and address of the applicant

*Nom et adresse du demandeur*

Name and address of the manufacturer

*Nom et adresse du fabricant*

Name and address of the factory

*Nom et adresse de l'usine*

Rating and principal characteristics

*Valeurs nominales et caractéristiques principales*

Trade mark (if any)

*Marque de fabrique (si elle existe)*

Model/type Ref.

*Ref. de type*

Additional information (if necessary)

*Information complémentaire (si nécessaire)*

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*

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*

This CB Test Certificate is issued by the National Certification Body

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

Color Monitor

Acer Inc.  
21F, 88, Sec. 1, Hsin Tai Wu Rd.  
HSICHIH, TAIPEI HSIEN TP 221, TAIWAN, R.O.C.

Acer Inc.  
21F, 88, Sec. 1, Hsin Tai Wu Rd.  
HSICHIH, TAIPEI HSIEN TP 221, TAIWAN, R.O.C.

(See appendix for factories information)

Input Rating : AC 100-240V, 60/50Hz, 0.8A  
Protection Class : I

acer

- 1) AL512
- 2) AL513

For differences between the models, refer to the test report

**PUBLICATION**

**EDITION**

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

12002897 001



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

Date 08.08.2002

Signature

Dipl.-Ing. M. Lechtermann

Appendix to CB Certificate JPTUV-004680  
Report Number: 12002897 001

Name and address of the manufacturer

Acer Inc.  
21F, 88, Sec. 1, Hsin Tai Wu Rd.  
Hsichih, Taipei Hsien TP 221  
Taiwan, R.O.C.

Name and address of the factory(ies)

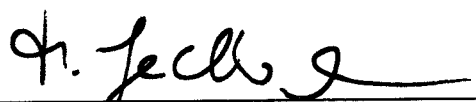
Jean (M) Sdn. Bhd.

Lot 181723, Kawasan Perindustrian  
Taman Bandar Baru, 31900 Kampar  
Perak Darul Ridzuan  
Malaysia

K Tronics (Suzhou) Technology Co., Ltd.

No.338, Zhongshang North Road  
Wu Jiang, Jiangsu  
P.R. China

Date: 08.08.2002

  
Dipl.-Ing. M. Lechtermann

# TEST REPORT

## IEC 950

### Safety of information technology equipment

#### Report

Reference No.....: <12002897 001 >

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

Approved by (+ signature).....: *P. Petschnig*

Date of issue .....: Aug. 07, 2002

Contents .....: 93 pages

.....:  
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.....: TÜV Rheinland Japan Ltd., Yokohama Laboratories

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

Testing location .....: TÜV Rheinland Japan Ltd., Yokohama Laboratories

#### Client

Name.....: ACER Incorporated

Address .....: 21F., 88, Sec. 1, Hsin Tai WuRd, Hsichih, Taipei Hsien 221,  
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, AS 3260, UL 1950, C22.2 No. 950

Test procedure .....: CB-scheme

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

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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<p><b>Test item</b></p> <p>Description.....: Color Monitor</p> <p>Trademark .....: acer</p> <p>Model and/or type reference .....: AL512, AL513</p> <p>Manufacturer.....: Same as client</p> <p>Rating(s).....: AC 100-240V, 60/50Hz, 0.8A</p> <p>.....:</p>
<p><b>Particulars: test item vs. test requirements</b></p> <p>Equipment mobility..... : Movable equipment</p> <p>Operating condition ..... : Continuous</p> <p>Tested for IT power systems ..... : Yes (for Norway)</p> <p>IT testing, phase-phase voltage (V)..... : IT, 230V for Norway</p> <p>Class of equipment ..... : Class I</p> <p>Mass of equipment (kg) ..... : 6.0kg</p> <p>Protection against ingress of water..... : IPX0</p>
<p><b>Test case verdicts</b></p> <p>Test case does not apply to the test object ..... : N(.A.)</p> <p>Test item does meet the requirement..... : P(ass)</p> <p>Test item does not meet the requirement ..... : F(ail)</p> <p>..... :</p>
<p><b>Testing</b></p> <p>Date of receipt of test item ..... : --</p> <p>Date(s) of performance of test..... : --</p> <p>..... :</p>
<p><b>General remarks</b></p> <p>This test report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>The test results presented in this report relate only to the item tested.</p> <p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma (or point) is used as the decimal separator.</p> <p><u>Factory:</u></p> <p>1. Jean (M) SDN. BHD. Lot 181723 Kawasan Perindustrian, Taman Bandar Baru, 31900, Kampar, Perak Darul Ridzuan, Malaysia.</p> <p>2. K Tronics (Suzhou) Technology Co., Ltd. No. 338, Zhongshang North Road, Wu Jiang, Jiangsu, P. R. China</p>

Comments:

*Brief description of the test sample:*

The equipment models AL512 and AL513 are LCD monitor with the open frame building-in type power supply and five enclosure shapes (type A, B, C, D and E) while for general office use.

Both models are similar except for model designation.

The all internal switching power supply module are similar except for PCB secondary circuit and layout.

PCB P/N: L51BPBA, L51BPBB and L51BH.

Unless otherwise specified, all tests were performed on internal switching power supply module (PCB P/N: L51BPBA and L51BH) and type A enclosure to represent others.

The tested samples were pre-production models without serial numbers.

Copy of the marking plate :

**acer**  
**MODEL NAME:AL512**  
Type No.: L51B  
Rating: 100-240V - 60/50Hz 0.8A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID: AMPL512  
Date of Mfg.:  
Serial No.:

As an ENERGY STAR<sup>®</sup> Partner, ACER COMPUTER INTERNATIONAL LTD. has determined that this product meets the ENERGY STAR<sup>®</sup> guidelines for energy efficiency.  
This device complies with the LOW EMISSIONS requirements of MPR 1990: 8 (MPRH).

Made in China

**acer**  
**MODEL NAME:AL513**  
Type No.: L51B  
Rating: 100-240V - 60/50Hz 0.8A

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC ID: AMPL51B  
Date of Mfg.:  
Serial No.:

As an ENERGY STAR<sup>®</sup> Partner, ACER COMPUTER INTERNATIONAL LTD. has determined that this product meets the ENERGY STAR<sup>®</sup> guidelines for energy efficiency.  
This device complies with the LOW EMISSIONS requirements of MPR 1990: 8 (MPRH).

Made in China

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict

1	GENERAL		P
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1.5	Components		P
1.5.1	Comply with IEC 60950 or relevant component standard	Components which 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)	P
1.5.2	Evaluation and testing components	Components which 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.	P
	Dimensions (mm) of mains plug for direct plug-in .....	The equipment is not plug-in type.	N
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		N
1.5.3	Transformers	Transformer used are suitable for their intended application and comply with the relevant requirements of the standard and particularly Annex C.	P
1.5.4	High voltage components (component; manufacturer; flammability) .....	No high voltage components used.	N
1.5.5	Interconnecting cables	Interconnection cable for signal output to other devices and signal input from accessories are carrying only SELV voltages on an energy level below 240VA.  → Except for the insulation material, there are no further requirements to the interconnection cable.	P

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
1.5.6	Mains Capacitors	X2 capacitor according to IEC 60384-14:1993 with 21 days damp heat test.	<b>P</b>

1.6	Power interface		<b>P</b>
1.6.1	Steady state input current	Highest load according to 1.2.2.1 for this equipment is the operation with the max. horizontal frequency, full white pattern, max. brightness and contrast, 1kHz pink noise input to loudspeakers.  (Results see appended table)	<b>P</b>
	Current deviation during normal operating cycle	< + 10%	<b>P</b>
1.6.2	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	<b>N</b>
1.6.3	Neutral conductor insulated from earth and body	The neutral is not identified in the equipment. Basic insulation for rated voltage between earthed parts and primary phases.	<b>P</b>
1.6.4	Components in equipment intended for IT power system	Phase to earth designed in according to phase-to-phase working voltage. The Y2 type capacitor used between phase-to-earth.	<b>P</b>
1.6.5	Mains supply tolerance (V) .....	+ 6%, -10%  Documentation specifies a rating of AC 100-240V at 60/50Hz. Relevant tests were done with the range of 90-254V at 60/50Hz.	<b>P</b>

1.7	Marking and instructions		<b>P</b>
1.7.1	Rated voltage (V) .....	100-240V ~	<b>P</b>
	Symbol of nature of supply for d.c. ....	Mains from AC source	<b>N</b>
	Rated frequency (Hz) .....	60/50Hz	<b>P</b>
	Rated current (A) .....	0.8A	<b>P</b>
	Manufacturer .....	Not shown	<b>N</b>



IEC 950

Clause	Requirement – Test	Result - Remark	Verdict
	Trademark .....	acer	<b>P</b>
	Type/model .....	AL512, AL513	<b>P</b>
	Symbol of Class II .....	Class I equipment.	<b>N</b>
	Certification marks .....	TÜV Rheinland GS mark, UL, C-UL, B	<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 ....	Full voltage range.	<b>N</b>
1.7.5	Marking at power outlets .....	No outlet.	<b>N</b>
1.7.6	Marking at fuseholders .....	F801 T2.5A/250V.	<b>P</b>
1.7.7.1	Protective earthing terminals	Main earth connection for supply wiring is marked on metal chassis by symbol IEC 60417, No. 5019.	<b>P</b>
1.7.7.2	Terminal for external primary power supply conductors	The equipment with appliance inlet is intended to be used with the detachable type power supply cord.	<b>N</b>
1.7.8.1	Identification and location of switches and controls .....	Indicator not affecting safety.	<b>N</b>
1.7.8.2	Colours of controls and indicators .....	No safety involve indicator used.	<b>N</b>
1.7.8.3	Symbols according to IEC 417 .....	Marking for push-push button type functional switch according IEC 60 417, No. 5009 ( line inside half 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 .....		<b>N</b>
1.7.9	Isolation of multiple power sources .....	Only one supply from the mains.	<b>N</b>
1.7.10	Instructions for installation to IT power system	The instructions will be provided when national approval.	<b>N</b>
1.7.11	Instructions when protection relies on building installation	Connected to the mains by pluggable type A.	<b>N</b>
1.7.12	Marking when leakage current exceeds 3,5 mA	Leakage current does not exceed 3.5mA.	<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
1.7.13	Indication at thermostats and regulating devices	No adjustable thermostats.	<b>N</b>
1.7.14	Language of safety markings/instructions	User's manual provided in English and German. Rating marking in English. Version in other languages will be provided when national approval.	<b>P</b>
	Language .....	German and 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 15 sec. and then again for 15 sec. 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 no curling nor lifting of the label edge.	<b>P</b>
1.7.16	Removable parts	No marking placed on removable part.	<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 .....	No operator access area with tool.	<b>N</b>
1.7.19	Equipment for restricted access locations .....	No restricted access location.	<b>N</b>

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>	<b>P</b>
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2.1	Protection against electric shock and energy hazards		<b>P</b>
2.1.1	Access to energized parts	See below	<b>P</b>
2.1.2	Protection in operator access areas	No access with test finger to any parts with only basic insulation to ELV or hazardous voltage.  The test pin can not touch hazardous voltage through any openings within the appliance.	<b>P</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
	Test by inspection .....	dto	<b>P</b>
	Test with test finger .....	dto	<b>P</b>
	Test with test pin .....	dto	<b>P</b>
2.1.3.1	Insulation of internal wiring in an ELV circuit accessible to operator	No ELV wiring in operator accessible area.	<b>N</b>
	Working voltage (V); distance (mm) through insulation .....		<b>N</b>
2.1.3.2	Operator accessible insulation of internal wiring at hazardous voltage	No hazardous voltage wiring in operator accessible area.	<b>N</b>
2.1.4.1	Protection in service access areas	No maintenance work in operation mode necessary.	<b>N</b>
2.1.4.2	Protection in restricted access locations	The unit is not intended to be used in restricted locations	<b>N</b>
2.1.5	Energy hazard in operator access area	No energy hazard in operator area.	<b>P</b>
2.1.6	Clearances behind conductive enclosures	No conductive enclosure.	<b>N</b>
2.1.7	Shafts of manual controls	None at ELV or hazardous voltage.	<b>N</b>
2.1.8	Isolation of manual controls		<b>N</b>
2.1.9	Conductive casings of capacitors		<b>N</b>
2.1.10	Risk of electric shock from stored charge on capacitors connected to mains circuit	No risk of electric shock, see below.	<b>P</b>
	Time-constant (s); measured voltage (V) .....	< 1s (see appended table)	—

2.2	Insulation		<b>P</b>
2.2.1	Methods of insulation	The insulation materials provided in the equipment with adequate thickness and adequate creepage distance over their surface and clearance distance through air.	<b>P</b>
2.2.2	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used	<b>P</b>
2.2.3	Humidity treatment	Total time elapsed: 48 hours	<b>P</b>
	Humidity (%) .....	93% R.H.	—
	Temperature (°C) .....	25°C	—

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
2.2.4	Requirements for insulation	Please refer to 5.3, 2.9 and 5.1.	<b>P</b>
2.2.5	Insulation parameters	Both parameters were considered.	<b>P</b>
2.2.6	Categories of insulation	The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard.	<b>P</b>
2.2.7.1	General rules for working voltages	The unit was connected to a 240V TN power system and secondary ground was maintained during measurement. Results see appended table.	<b>P</b>
2.2.7.2	Clearances in primary circuits	Considered	<b>P</b>
2.2.7.3	Clearances in secondary circuits	See 5.4.4.	<b>N</b>
2.2.7.4	Creepage distances	Considered	<b>P</b>
2.2.7.5	Electric strength tests	Considered	<b>P</b>
2.2.8.1	Bridging capacitors	Neither resistor nor capacitor bridged reinforced or double insulation.	<b>N</b>
2.2.8.2	Bridging resistors		<b>N</b>
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>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
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 were not exceed and SELV limits not for longer than 0.2 seconds, see abnormal results 5.4.6.	—
	Method used for separation .....	Method 1, 2	<b>P</b>
2.3.4	Additional constructional requirements	In multiway connectors and other cable ties prevent contact to hazardous parts in case of loosening of connection or conductor breakage.	<b>N</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 resistor for built-in DC/AC inverter. Results see appended table.	—
	Measured current (mA) .....	See above.	<b>P</b>
2.4.3	Measured voltage (V) .....	> 450Vpeak	—
	Measured capacitance (μF) .....		<b>N</b>
2.4.4	Measured voltage (V) .....		—
	Measured charge (μC) .....	< 45μC	<b>P</b>
2.4.5	Measured voltage (V) .....	< 15000V	—
	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		<b>P</b>
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IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
2.5.1	Class I equipment	Basic insulated conductive parts touchable in operator area are earthed reliable.	<b>P</b>
	Warning label for service personnel		<b>N</b>
2.5.2	Protective earthing in Class II equipment	Class I equipment	<b>N</b>
2.5.3	Switches/fuses in earthing conductors	No switches or fuses in earthing conductor.	<b>P</b>
2.5.4	Assured earthing connection for Class I equipment in systems comprising Class I and Class II equipment	This LCD monitor has its own earthing connection. The equipment does not comprise class I and class II.	<b>P</b>
2.5.5	Green/yellow insulation	Green/yellow wire from appliance inlet to metal chassis.	<b>P</b>
2.5.6	Continuity of earth connections	It is not possible to disconnect earth without disconnecting mains as an appliance inlet is used.	<b>P</b>
2.5.7	Making and breaking of protective earthing connections	Plug or inlet, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.	<b>P</b>
2.5.8	Disconnection protective earthing connections	It is not necessary to disconnect earthing except for the removing of the earthed parts itself.	<b>P</b>
2.5.9	Protective earthing terminals for fixed supply conductors or for non-detachable power supply cords	Pluggable equipment type A.	<b>N</b>
2.5.10	Corrosion resistance	All safety earthing connections in compliance with Annex J.	<b>P</b>
2.5.11	Resistance ( $\Omega$ ) of protective earthing conductors $\leq 0,1 \Omega$	$\leq 0,1 \Omega$ , see below.	<b>P</b>
	Test current (A) .....	(see appended table)	—
2.6	Disconnection form primary power		<b>P</b>
2.6.1	General requirements	The appliance inlet is considered to be the disconnect device.	<b>P</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
2.6.2	Type of disconnect device .....	Appliance inlet.	<b>P</b>
2.6.3	Disconnect device in permanently connected equipment	Pluggable equipment type A.	<b>N</b>
2.6.4	Parts of disconnect device which remain energized	When inlet or plug is disconnected no remaining parts with hazardous voltage in the equipment.	<b>P</b>
2.6.5	Switches in flexible cords	No isolation switch provided.	<b>N</b>
2.6.6	Disconnection of both poles simultaneously for single-phase equipment	The appliance inlet or power cord plug disconnects both poles simultaneously.	<b>P</b>
2.6.7	Disconnection of all phase conductors of supply in three-phase equipment	Single phase.	<b>N</b>
2.6.8	Marking of switch acting as disconnect device	See 1.7.8.	<b>N</b>
2.6.9	Installation instructions if plug on power supply cord acts as disconnect device		<b>N</b>
	Language .....		—
2.6.11	Interconnected equipment		<b>N</b>
2.6.12	Multiple power sources	Only one supply connection provided.	<b>N</b>

2.7	Overcurrent and earth fault protection in primary circuits		<b>P</b>
2.7.1	Basic requirements	Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Overcurrent protection is provided by the built-in device fuse.	<b>P</b>
2.7.2	Protection against faults not covered in 5.4	The protection devices are well dimensioned and mounted.	<b>P</b>
2.7.3	Short-circuit backup protection	Pluggable equipment type A, the building installation is considered as providing short circuit backup protection.	<b>P</b>
2.7.4	Number and location of protective devices .....	Overcurrent backup protection by one built-in fuse.	<b>P</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
2.7.5	Protection by several devices	Only one fuse.	<b>N</b>
2.7.6	Warning to service personnel	With reversible plug to the mains, hazardous voltage may be still presented in the equipment after the internal fuse opens. However, as it is considered that the plug to the mains will be disconnected during service work, no marking were requested.	<b>P</b>

2.8	Safety interlock		<b>N</b>
2.8.2	Design		<b>N</b>
2.8.3	Protection against inadvertent reactivation		<b>N</b>
2.8.4	Reliability		<b>N</b>
2.8.5	Overriding an interlock		<b>N</b>
2.8.6.1	Contact gap (mm) .....		<b>N</b>
2.8.6.2	Switch performing 50 cycles		<b>N</b>
2.8.6.3	Electric strength test: test voltage (V) .....		<b>N</b>
2.8.7	Protection against overstress		<b>N</b>

2.9	Clearances, creepage distances and distances through insulation		<b>P</b>
	Nominal voltage (V) .....	AC 240V	—
	General		<b>P</b>
2.9.2	Clearances	See below.	<b>P</b>
2.9.2.1	Clearances in primary circuits	(see appended table 2.9.2 and 2.9.3)	<b>P</b>
2.9.2.2	Clearances in secondary circuits	See 5.4.4.	<b>N</b>
2.9.3	Creepage distances	(see appended table 2.9.2 and 2.9.3)	<b>P</b>
	CTI tests .....	CTI rating for all materials of min. 100.	—
2.9.4.1	Minimum distances through insulation	(see appended table 2.9.4)	<b>P</b>
2.9.4.2	Thin sheet material	The thin sheet materials of polyester tape used in transformer T801.	<b>P</b>
	Number of layers (pcs) .....	3 layers	<b>P</b>



IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
	Electrical strength test: test voltage (V) .....	3000V ac applied on any combination of two layers	<b>P</b>
2.9.4.3	Printed boards		<b>N</b>
	Distance through insulation .....		<b>N</b>
	Electric strength test at voltage (V) for thin sheet insulating material .....		<b>N</b>
	Number of layers (pcs) .....		<b>N</b>
2.9.4.4	Wound components without interleaved insulation		<b>N</b>
	Number of layers (pcs) .....		<b>N</b>
	Two wires in contact inside component; angle between 45° and 90°		<b>N</b>
	Routine testing for finished component		<b>N</b>
2.9.5	Distances (mm) on coated printed boards .....	No coated printed wiring boards.	<b>N</b>
	Routine testing for electric strength		<b>N</b>
2.9.6	Enclosed and sealed parts	No hermetically sealed components.	<b>N</b>
	Temperature T1 (°C) .....		<b>N</b>
	Humidity % .....		<b>N</b>
2.9.7	Spacings filled by insulating compound	Photo couplers is approved components. Other components not applied for.	<b>P</b>
	Temperature T1 (°C) .....		<b>N</b>
	Humidity % .....		<b>N</b>
2.9.8	Component external terminations	The distance of external terminations for photo couplers are bigger than 5.0mm. See appended table of 2.9.2 and 2.9.3	<b>P</b>
2.9.9	Insulation with varying dimensions	Insulation kept homogenous.	<b>N</b>
2.10	Interconnection of equipment		<b>P</b>
2.10.1	General requirements	The unit is not considered for connection to TNV.	<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
2.10.2	Type of interconnection circuits .....	Interconnection circuits of SELV through the connector. 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>N</b>
	Use of limited power source .....		<b>N</b>

3	WIRING, CONNECTIONS AND SUPPLY		<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, 300V. 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 and heatsinks which could damage the insulation and cause hazard.	<b>P</b>
3.1.3	Fixing of internal wiring	Internal wires with only basic isolation are routed so that they are not close to any live bare components. The wires are secured by solder pins, cable tie and quick connect terminals so that a loosening of the terminal connection is unlikely.	<b>P</b>
3.1.4	Fixing of uninsulated conductors	Securely held on PCB. No hazard.	<b>P</b>
3.1.5	Insulation of internal wiring	The insulation of the individual conductors are suitable for the application and the working voltage. For the insulation material see 3.1.1.	<b>P</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
3.1.6	Wires coloured green/yellow only for protective earth connection	See 2.5.5.	<b>P</b>
3.1.7	Fixing of beads and similar ceramic insulators	Not used.	<b>N</b>
3.1.8	Required electrical contact pressure	Electrical or earthing connections screwed two or more complete threads into metal. No screws of insulating material for electrical or earthing connections, or where supplementary or reinforced insulation could be impaired by a metal replacement.	<b>P</b>
3.1.9	Reliable electrical connections	All current carrying and safety earthing connections are metal to metal.	<b>P</b>
3.1.10	End of stranded conductor	No risk of stranded conductors coming loose.	<b>P</b>
3.1.11	Use of spaced thread screws/thread-cutting screws	No self tapping screws are used.	<b>P</b>

3.2	Connection to primary power		<b>P</b>
3.2.1	Type of connection .....	Appliance inlet.	<b>P</b>
	Design of product with more than one supply connection .....	Only one supply connection.	<b>N</b>
3.2.2	Provision for permanent connection .....	See clause 3.2.1.	<b>N</b>
	Size (mm) of cables and conduits .....		<b>N</b>
3.2.3	Appliance inlet	The appliance inlet complies with IEC 60 320 and is located at the rear of the unit. The power cord can be inserted without difficulties and does not support the unit.	<b>P</b>
3.2.4	Type and cross-sectional area (mm <sup>2</sup> ) of power supply cord .....	No power cord provide.	<b>N</b>
3.2.5	Cord anchorage		<b>N</b>
	Test: 25 times; 1 s; pull (N) .....		—
	Longitudinal displacement ≤ 2 mm .....		<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
3.2.6	Protection of power supply cord	No parts under this unit likely to damage the power supply cord. No sharp edges	<b>P</b>
3.2.7	Cord guard		<b>N</b>
	D (mm) .....		—
	Test: mass (g) .....		—
	Radius of curvature of the cord $\leq 1,5 D$		<b>N</b>
3.2.8	Supply wiring space		<b>N</b>

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

4	PHYSICAL REQUIREMENTS		<b>P</b>
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4.1	Stability and mechanical hazards		<b>P</b>
4.1.1	Stability tests		<b>P</b>
	Angle of 10°	This unit is of a stable mechanical construction and does not overbalance when tilted to an angle of 10 degrees from its normal upright position	<b>P</b>
	Test: force (N) .....	Not floor standing.	<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
4.1.2	Protection against personal injury	No moving parts.	<b>P</b>
4.1.3	Warning and means provided for stopping the moving part .....	No moving parts.	<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		<b>P</b>
4.2.1	General	See below.	<b>P</b>
4.2.2	Internal enclosures 30 N ± 3 N; 5 s	No internal enclosure.	<b>N</b>
4.2.3	External enclosures 250 N ± 10 N; 5 s	250N applied to outer enclosure. No energy or other hazards.	<b>P</b>
4.2.4	Steel ball tests		<b>P</b>
	Fall test	No hazard as result from steel sphere ball fall test.	<b>P</b>
	Swing test	No hazard as result from steel sphere ball swung test.	<b>P</b>
4.2.5	Drop test	Not hand-held.	<b>N</b>
4.2.6	Heat test for enclosures of moulded or formed thermoplastic materials: 7 h; T (°C) .....	After 7h at 83°C and cooling down to room temperature, no shrinkage, distortion or loosing of enclosure parts was noticeable on the monitor.	<b>P</b>
4.2.7	Compliance criteria	No safety relevant damages.	<b>P</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	Full voltage circuit, no necessary adjustment.	<b>P</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>
4.3.5	Fixing of knobs, grips, handles, levers		<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
	Test: force (N) .....		<b>N</b>
4.3.6	Driving belts/couplings shall not ensure electrical insulation	Not such components used.	<b>N</b>
4.3.7	Retaining of sleeves	Sleeving on wiring reliable kept in position by the use of heatshrink sleeving or cable tie.	<b>P</b>
4.3.9	Protection of loosening parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. For the protection, solder pins, cable ties and heatshrink tubing are used.	<b>P</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)	The energy of LED is far less than the limited value of LED class 1.	<b>P</b>
4.3.13	Securing of screwed connections	No connection likely to be exposed to mechanical stress are provided in unit.	<b>P</b>
4.3.15	Openings in the top of enclosure	<ul style="list-style-type: none"> <li>- For type A and B: &lt; 5mm in any dimension</li> <li>- For type C and D: some openings exceed 5mm and located above internal barrier which be considered as individual fire enclosure (the material flammability class V-1 of mylar sheet with diameter 2.5mm of numerous circle openings). Therefore, the access area does not resulted hazards consideration.</li> <li>- For type E: no openings.</li> </ul>	<b>P</b>
	Dimensions (mm) .....	(see appended table)	—
4.3.16	Openings in the sides of enclosure	< 5mm in any dimension	<b>P</b>
	Dimensions (mm) .....	(see appended table)	—
4.3.17	Interchangeable plugs and sockets		<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
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	No heating elements.	<b>N</b>
4.3.21	Protection of lithium batteries		<b>N</b>
	Construction of protection circuit .....		<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>
	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	Internal components except small parts are V-2 or better.	<b>P</b>
4.4.3.2	Material and component: manufacturer; type; flammability .....	Considered.	<b>P</b>
4.4.3.3	Exemptions .....	Considered.	<b>P</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
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 .....	Protective enclosure with decorative swivel base. Enclosure of this unit with flammability class V-0 or better.	<b>P</b>
4.4.5	Conditions for fire enclosures	With having the following components: <ul style="list-style-type: none"> <li>- components with windings</li> <li>- wiring</li> <li>- semiconductor devices, transistors, diodes, integrated circuits</li> <li>- resistors, capacitors, inductors</li> </ul> the fire enclosure is required.	<b>P</b>
4.4.5.1	Components which require fire enclosure: manufacturer; flammability .....	See above.	<b>P</b>
4.4.5.2	Components not requiring fire enclosure .....	See 4.4.4.	<b>N</b>
4.4.6	Fire enclosure construction	Protection against emission of flame, molten metal, flaming or glowing particles or drops by the fire enclosure.  Numerous openings in bottom of the enclosure under the metal chassis and PVC wires.  Measured size of these openings: see appended table	<b>P</b>
4.4.7	Doors or covers in fire enclosure	No door or cover within fire enclosure.	<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>
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IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
	Heating tests	(see appended table)	<b>P</b>

5.2	Earth leakage current		<b>P</b>
5.2.1	General	The leakage current was measured from primary to PE.	<b>P</b>
5.2.2	Leakage current	(see appended table)	<b>P</b>
	Test voltage (V) .....	(see appended table)	—
	Measured current (mA) .....	(see appended table)	—
	Max. allowed current (mA) .....	3.5mA	—
5.2.3	Single-phase equipment	See 5.2.2	<b>P</b>
	Test voltage (V) .....		—
	Measured current (mA) .....		—
	Max. allowed current (mA) .....		—
5.2.4	Three-phase equipment	Single phase equipment	<b>N</b>
	Test voltage (V) .....		—
	Measured current (mA) .....		—
	Max. allowed current (mA) .....		—
5.2.5	Equipment with earth leakage current exceeding 3,5 mA	Leakage current does not exceed 3.5mA.	<b>N</b>
	Test voltage (V) .....		—
	Measured current (mA) .....		—
	Max. allowed current (mA) .....		—
	Cross-sectional area (mm <sup>2</sup> ) of internal protective earthing conductor .....		—
	Warning label		<b>N</b>

5.3	Electric strength		<b>P</b>
5.3.1	General	All tests voltages were applied for 1 minute in the chamber after the humidity test of 2.2.3 and in warm conditions after the heating test of 5.1.  No isolation breakdown was observed (results see appended table).	<b>P</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
5.3.2	Test procedure	(see appended table)	<b>P</b>
5.4	Abnormal operating and fault conditions		<b>P</b>
5.4.2	Motors	No motors.	<b>N</b>
5.4.3	Transformers	For power supply with the shorted o/p of the transformer, the unit shut down.  No high temp. of the transformer are to be expected or to be observed.  Result of the short circuit tests see 5.4 appended table.	<b>P</b>
5.4.4	Compliance of operational insulation		<b>P</b>
	Method used .....	Method c) used.  Results of short circuit test, see 5.4 appended table.	<b>P</b>
5.4.5	Electromechanical components in secondary circuits	No electromechanical components.	<b>N</b>
5.4.6	Other components and circuits	Results see appended table.	<b>P</b>
5.4.7	Test in any expected condition and foreseeable misuse	Ventilation openings covered test: Results see appended table. No hazards.  Beside this, no other foreseeable misuse considered.	<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 fire propagated beyond the equipment. No molten metal was emitted. Electric strength test primary → user accessible area and primary → PE were passed. (Results see appended table)	<b>P</b>
5.4.10	Ball-pressure test of thermoplastic parts; impression shall not exceed 2 mm	Phenolic bobbin material used for T801 accepted without test. Others, see appended table 5.4.10.	<b>P</b>

IEC 950

Clause	Requirement – Test	Result - Remark	Verdict
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6	CONNECTION TO TELECOMMUNICATION NETWORKS <i>Equipment is not intended 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>
6.2.2.1	Protection against contact with bare conductive parts of TNV-2 and TNV-3 circuits		<b>N</b>
	Test with test finger		<b>N</b>
	Test with test probe		<b>N</b>
6.2.2.2	Battery compartments		<b>N</b>
	Marking next to door/on door		<b>N</b>

6.3	Protection of telecommunication network service personnel, and users of other equipment connected to the telecommunication network, from hazards in the equipment		<b>N</b>
6.3.1	Protection from hazardous voltages		<b>N</b>
6.3.2	Use of protective earthing		<b>N</b>

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
	Language of installation instructions .....		<b>N</b>
6.3.3.1	Insulation between TNV circuit and parts or circuitry that may be earthed		<b>N</b>
6.3.3.2	Exclusions .....		<b>N</b>
6.3.4.1	Limitation of leakage current (mA) to telecommunication network .....		<b>N</b>
6.3.4.2	Summation of leakage currents from telecommunication network .....		<b>N</b>

6.4	Protection of the equipment users from voltages on the telecommunication networks		<b>N</b>
6.4.1	Separation requirements		<b>N</b>
6.4.2	Test procedure		<b>N</b>
6.4.2.1	Impulse test: separation between TNV-1 circuits/TNV-3 circuits and:		<b>N</b>
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		<b>N</b>
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		<b>N</b>
6.4.2.1 c)	circuitry which is provided for connection of other equipment; test at 1,5 kV		<b>N</b>
6.4.2.2	Electric strength test: separation between TNV-1 circuits/TNV-3 circuits and:		<b>N</b>
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		<b>N</b>
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		<b>N</b>
6.4.2.2 c)	circuitry which is provided for connection of other equipment; test at 1,0 kV		<b>N</b>
6.4.2.3	Compliance criteria		<b>N</b>

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

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		<b>P</b>
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IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
A.1	Flammability test for fire enclosures of moveable equipment having a total mass exceeding 18 kg, and of stationary equipment		<b>N</b>
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		<b>P</b>
A.3	High current arcing ignition test		<b>N</b>
A.3.6	Number of arcs .....		<b>N</b>
A.4	Hot wire ignition test		<b>N</b>
A.4.6	Ignition time (s) .....		<b>N</b>
A.5	Hot flaming oil test		<b>N</b>
A.6	Flammability test for classifying materials V-0, V-1 or V-2		<b>N</b>
A.7	Flammability test for classifying foamed materials HF-1, HF-2 or HBF		<b>N</b>
A.8	Flammability test for classifying materials HB		<b>N</b>
A.9	Flammability test for classifying materials 5V		<b>N</b>
A	Tested material		<b>N</b>
	Preconditioning: 7 days (168 h); temperature (°C) .....		—
	Mounting of samples during test .....		—
	Wall thickness .....		—
	Sample 1 burning time .....		<b>N</b>
	Sample 2 burning time .....		<b>N</b>
	Sample 3 burning time .....		<b>N</b>
	Material: compliance with the requirements		<b>N</b>
	Manufacturer of tested material .....		—
	Type of tested material .....		—
	Additional information .....		—

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS</b>		<b>N</b>
B.1	General requirements		<b>N</b>
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated voltage (V) or current (A) .....		—

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
B.2	Test conditions		<b>N</b>
B.3	Maximum temperatures		<b>N</b>
B.4	Running overload test		<b>N</b>
B.5	Locked-rotor overload test		<b>N</b>
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for DC motor in secondary circuits		<b>N</b>
B.7	Locked-rotor overload test for DC motor in secondary circuits		<b>N</b>
B.7.2	Test time (h) .....		<b>N</b>
B.7.3	Test time (h) .....		<b>N</b>
B.8	Test for motors with capacitors		<b>N</b>
B.9	Test for three-phase motors		<b>N</b>
B.10	Test for series motors		<b>N</b>
	Test voltage (V) .....		—

<b>C</b>	<b>ANNEX C, TRANSFORMERS</b>		<b>P</b>
	Position .....	T801 on SPS board	—
	Manufacturer .....	(see appended table 1.5.1)	—
	Type .....	(see appended table 1.5.1)	—
	Rated values .....	(see appended table 1.5.1)	—
	Temperatures	(see appended table 5.4)	<b>P</b>
	Thermal cut-out		<b>N</b>
C.1	Overload test	(see 5.4.3)	<b>P</b>
	Conventional transformer		<b>N</b>
C.2	Insulation		<b>P</b>
	Precautions .....	(see transformer construction check)	<b>P</b>
	Retaining of end turns of all windings	dto	<b>P</b>
	Earthing test at 25 A		<b>N</b>
C.3	Electric strength test	(see 5.3)	<b>P</b>

<b>H</b>	<b>ANNEX H, IONIZING RADIATION</b>	<b>N</b>
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IEC 950			
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Clause	Requirement – Test	Result - Remark	Verdict
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	Ionizing radiation		<b>N</b>
	Measured radiation .....		—
	Measured high-voltage (kV) .....		—
	Measured focus voltage (kV) .....		—
	CRT markings .....		—
	Certified by .....		—
	Standard used .....		—

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

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict

C.2	Safety isolation transformer		P
Construction details:			
Transformer T801 (in PCB P/N : L51BPBA, L51BPBB)			
Mfr.: see appended table 1.5.1.			
Type : see appended table 1.5.1.			
All of source are similar except for manufacture.			
Recurring peak voltage		488V 0-p	
Required clearance for reinforced insulation (from table 3 and 4)		4.0 + 0.2mm	
Effective voltage rms		274V	
Required creepage distance for reinforced insulation (from table 6 with condition 7)		5.8mm	
Measured min. creepages			
Location		inside (mm)	outside (mm)
prim-sec		6.4	14.0
prim-core		3.2	7.0
sec-core		3.2	7.0
prim-prim		%	%
Measured min. clearances			
Location		inside (mm)	outside (mm)
prim-sec		6.4	14.0
prim-core		3.2	7.0
sec-core		3.2	7.0
prim-prim		%	%
Construction:			
Concentric windings on ERL-28 type bobbin, three layers insulation between primary and secondary windings. Distance tape is at least 3.2mm at both side of transformer, endings additionally tubing and leaded above the distance tape. Winding ends additionally fixed with tape, outer winding is primary.			



IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
Pin numbers			
Prim.		1→2→3, 6→5	
Sec.		8→10, 11→12, 7→9	
Bobbin			
Material		<ul style="list-style-type: none"> <li>- Taiwan Industrial Development, phenolic, DC 2035, V-0</li> <li>- Chang Chun, phenolic, T355J, T373J, T375J, V-0</li> </ul>	
Thickness		min. 1.0mm	
Electric strength test			
With AC 3000V after humidity treatment			
Result		pass	

C.2	Safety isolation transformer	P	
Construction details:			
Transformer T801 (in PCB P/N : L51BH)			
Mfr.: see appended table 1.5.1			
Type : see appended table 1.5.1			
All of source are similar except for manufacture.			
Recurring peak voltage		512V 0-p	
Required clearance for reinforced insulation (from table 3 and 4)		4.0mm + 0.4mm	
Effective voltage rms		278V	
Required creepage for reinforced insulation (from table 6 with condition 7)		5.8mm	
Measured min. creepages			
Location		inside (mm)	outside (mm)
prim-sec		6.4	12.4
prim-core		3.2	6.2

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
sec-core		3.2	6.2
prim-prim		%	%
Measured min. clearances			
Location		inside (mm)	outside (mm)
prim-sec		6.4	12.4
prim-core		3.2	6.2
sec-core		3.2	6.2
prim-prim		%	%
Construction:			
Concentric windings on ERL-28 type bobbin, three layers insulation between primary and secondary windings. Distance tape is at least 3.2mm at both side of transformer, endings additionally tubing and leaded above the distance tape. Winding ends additionally fixed with tape, outer winding is primary.			
Pin numbers			
Prim.		1-4-3, 6-5	
Sec.		9-10, 11-8, 12-7	
Bobbin			
Material		Chang Chun Plastic; phenolic type T375J, T357; V-0	
Thickness		min. 0.8mm	
Electric strength test			
With AC 3000V after humidity treatment			
Result		pass	

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>	
Enclosure	Cheil	VH0810 +, NH-1000	Min. 94V0	UL94	UL	
	LG	AF-312, AF342, GN5001TF	Min. 94V0	UL94	UL	

IEC 950					
Clause	Requirement – Test		Result - Remark		Verdict
	Grand Pacific	D-1000	Min. 94V0	UL94	UL
	GE	SEA2X, C2800, C6200	Min. 94V0	UL94	UL
	Bayer	FR-2000	Min. 94V0	UL94	UL
	Dow Chemical	5200HF	Min. 94V0	UL94	UL
	LG	GN5008HF	Min. 94V0	UL94	UL
	GE	CU6800	Min. 94-5V	UL94	UL
P.C.B.	---	---	Min. 94V-1, 105°C min.	UL94	UL
AC Inlet (S801)	Rong Feng	SS-7B-1	250V/10A	IEC 60320	VDE
	ZhangJiagang	SA-4S	250V/10A	IEC 60320	VDE
	Supercom	SC-9R	250V/10A	IEC 60320	VDE
	Inalways	0714	250V/10A	IEC 60320	VDE
	Inalways	0707	250V/10A	IEC 60320	VDE
	Delta	SK-1019	250V/10A	IEC 60320	VDE
	Taishing	ACR-301	250V/10A	IEC 60320	VDE
	I Sheng	7014	250V/10A	IEC 60320	VDE
	Zhang Jia Gang Hua Feng	HF-301	250V/10A	IEC 60320	VDE
	LCD Panel	Chunghwa	CLAA150XA03	15", TFT type	---
Chunghwa		CLAA150XG	15", TFT type	---	---
D/A Inverter	Chi Sam	CDA-039F	I/P: 10.8-13.2Vdc, 0.9-1.28A O/P: Max. 1680Vrms 7.9mA	---	---
-Transformer (T1, T2)	Chi Sam	STC-258B11G2	Class 130°C		
D/A Inverter	Chi Sam	CDA-2103H01	I/P: 12Vdc, 0.9A O/P: 600Vrms, 7.0mA	---	---
-Transformer (T1, T2)	Chi sam	TRUI-25	Class 150°C	---	---
D/A Inverter	SAMPO	DIVTL0020-D22	I/P: 12Vdc, 1.4A O/P: Max. 1850Vrms 8.5mA	---	---

IEC 950					
Clause	Requirement – Test		Result - Remark		Verdict
-Transformer (PT1, PT2)	SAMPO	RCVT-20101D-Z	Class 105°C		
D/A Inverter	SAMPO	DIVTL0070-D21	I/P: 12Vdc, 1100mA O/P:600Vrms, 7.5mA	---	---
-Transformer (PT1)	YAO Sheng	YST-1207	Class 105°C	---	---
	Taipei Multipower	TMP-1207	Class 130°C	---	---
D/A Inverter	Emax	PLCD1015202	I/P: 12Vdc, 960mA O/P: 615Vrms, 7.7mA	---	---
-Transformer (T1)	Emax	EST0029	Class 130°C	---	---
DC/AC Inverter	Lien Chang	LI-1026	I/P: 10.8-13.5Vdc, 0.9-1.2A O/P: Max. 1700Vrms 8.0mA	---	---
-Transformer (T1)	Lien Chang	IT-0086	Class 105°C	---	---
Speaker (optional)	---	---	Max. 3W, 8Ω	---	---
Power supply module (PCB P/N: L51BPBA, L51BPBB)					
Primary Connector (P801)	LEOCO	3951 series 3950 series	250V, 7A	VDE 0627	TÜV, UL, CSA
	Chayo Shiunn	JS-1120, JS-1121	250V, 7A	VDE 0627	TÜV, UL
	Sin Sheng	24183BS	250V, 7A	VDE 0627	TÜV, UL
	Weli Sheng	PX-I39606	250V, 7A	VDE 0627	TÜV, UL
Fuse (F801)	Bel	5ST	T2.5A, 250V	IEC 60127-2	VDE
	Bel	5HT	T2.5A, 250V	IEC 60127-2	VDE
	Littelfuse	215	T2.5A, 250V	IEC 60127-2	VDE
	Littelfuse	218	T2.5A, 250V	IEC 60127-2	VDE
	Bussmann	S505	T2.5A, 250V	IEC 60127-2	VDE
	SkyGate	SG5013	T2.5A, 250V	IEC 60127-2	VDE

IEC 950					
Clause	Requirement – Test			Result - Remark	Verdict
X-Capacitor (C801,C824) (Optional use)	Iskra	KNB153X	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Epcos	B3292X	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Teapo	XG-VS, XG-VP	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Sun Il	436D	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Siemens Matsushita Components	B 81130 Series	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Hua Jung	MKP	Max. 0.22µF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Philips	MKP 3362	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Okaya	PA	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Prestige Electronics Corp.(PTG)	MPX	Max. 0.22µF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
	Y Capacitor (C802, C803, C823) (Optional use)	Iskra	KNB252...	Max. 4700pF, 275V	IEC 60384- 14/1993
VISHAY		WYO	Max. 4700pF, 275V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
Welson		KL	Max. 4700pF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
SUCCESS		SF, SB	Max. 4700pF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
Murata		KC, KH	Max. 4700pF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
TDK		CS	Max. 4700pF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
Matsushita		TS	Max. 4700pF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S
Pan Oversea		AC	Max. 4700pF, 250V	IEC 60384- 14/1993	VDE, CSA, UL, FI, S

IEC 950					
Clause	Requirement – Test		Result - Remark		Verdict
	JYA-NAY	JN	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	TDK	CD	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Pan Overseas	AH	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Success	SE	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
Electrolytic Cap. (C812)	---	---	100 $\mu$ F, 400V, 105 $^{\circ}$ C	---	---
Switching Transistor (I801)	---	---	Min. 7A, 650V	---	---
Bridge Diode (D801)	---	---	Min. 4A, 600V	---	---
Bleeder Resister (R801, R802 series used)	---	---	Max. 1M $\Omega$ , 1/4W	---	---
or (R801 used only) (optional)	---	---	Max. 1.3M $\Omega$ , 1/4W	---	---
Thermistor (R840)	---	---	Min. 3A, 10 $\Omega$ at 25 $^{\circ}$ C	---	---
Inductor (L801, L803)	Mylee (ML)	2371110400	Class 105 $^{\circ}$ C	---	---
	Hua Jung (HJC)	2371110400	Class 105 $^{\circ}$ C	---	---
	Li Shin (LSE)	2371110400	Class 105 $^{\circ}$ C	---	---
	Tai Chang	2371110400	Class 105 $^{\circ}$ C	---	---
Line Chock (L805)	Hua Jnng (HJC)	2371156300	Class 130 $^{\circ}$ C	---	---
	Mylee	2371156300	Class 130 $^{\circ}$ C	---	---
	Li Shin	2371156300	Class 130 $^{\circ}$ C	---	---
	Linearity	2371156300	Class 130 $^{\circ}$ C	---	---
	Tai Chang	2371156300	Class 130 $^{\circ}$ C	---	---
	Hua Jnng (HJC)	2371157700	Class 130 $^{\circ}$ C	---	---
	Li Shin	2371157700	Class 130 $^{\circ}$ C	---	---
	Linearity	2371157700	Class 130 $^{\circ}$ C	---	---

IEC 950					
Clause	Requirement – Test		Result - Remark		Verdict
Power Transformer (T801)	Hua Jung	2374208200	Class B	Applicable part in IEC 60950 and evaluated according to IEC 60085	Accepted by TÜV Rheinland
	Mylee	2374208200	Class B	Applicable part in IEC 60950 and evaluated according to IEC 60085	Accepted by TÜV Rheinland
	Li Shin	2374208200	Class B	Applicable part in IEC 60950 and evaluated according to IEC 60085	Accepted by TÜV Rheinland
Photo Coupler (I802)	Sharp	PC817 Series	Isolation distance > 0.4mm	VDE 0884	VDE, UL, FI
	Toshiba	TLP621	Isolation distance = 0.8mm	VDE 0884	VDE, UL, FI
	Toshiba	TLP721F(D4-GR)	Isolation distance = 0.8mm	VDE 0884	VDE, UL, FI
	Vishay (Telefunken)	TCET1103G	Isolation distance = 0.7mm	VDE 0884	VDE, UL, FI
Power supply module (PCB P/N: L51BH)					
Primary Connector (P801)	LEOCO	3951 series 3950 series	250, 7A	VDE 0627	TÜV, UL
	Chayo Shiunn	JS-1120 JS-1121	250, 7A	VDE 0627	TÜV, UL
	Sin Sheng	24183BS	250, 7A	VDE 0627	TÜV, UL
	Weli Sheng	PX-139606	250, 7A	VDE 0627	TÜV, UL
P.C.B.	---	---	Min. 94V-1, 105°C	UL94	UL
Fuse (F801)	Bel	5ST	T2.5A, 250V	IEC 60127-2	VDE
	Littelfuse	215	T2.5A, 250V	IEC 60127-2	VDE
	Littelfuse	218	T2.5A, 250V	IEC 60127-2	VDE
	Bel	5HT	T2.5A, 250V	IEC 60127-2	VDE
	Bussmann	S505	T2.5A, 250V	IEC 60127-2	VDE
	Bussmann	S506	T2.5A, 250V	IEC 60127-2	VDE
	Sky Gate	SG5013	T2.5A, 250V	IEC 60127-2	VDE

IEC 950					
Clause	Requirement – Test			Result - Remark	Verdict
X-Capacitor (C801, C824) (Optional)	Iskra	KNB153X	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Teapo	XG-VS, XG-VP	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Siemens Matsushita Components	B 81130 Series	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Hua Jung	MKP	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Philips	MKP 3362	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Okaya	PA	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Prestige Electronics Corp.(PTG)	MPX	Max. 0.22µF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
Y Capacitor (C802, C803, C804, C823, C825, C856) (Optional) (Y2 type)	Iskra	KNB252...	Max. 10000pF, 275V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Welson	KL	Max. 10000pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	SUCCESS	SF, SB	Max. 10000pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Murata	KC, KH	Max. 10000pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	TDK	CS	Max. 10000pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Matsushita	TS	Max. 10000pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Pan Oversea	AC	Max. 10000pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
(Y1 type)	JYA-NAY	JN	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	TDK	CD	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI



IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict

	Pan Overseas	AH	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
	Success	SE	Max. 4700pF, 250V	IEC 60384-14/1993	VDE, UL, CSA, S, FI
Electrolytic Cap. (C812)	---	---	120-100µF, 400V, 105°C	---	---
Bridge Diode (D801)	---	---	Min. 4A, 600V	---	---
Bleeder Resistor (R801, R819)	---	---	Max. 680KΩ, 1/4W	---	---
Thermistor (R840)	---	---	Min. 3A, 10Ω at 25°C	---	---
Line Chock (L805)	Mylar (ML)	2371158200	Class 105°C	---	---
	Hua Jung (HJC)	2371158200	Class 105°C	---	---
	Li Tai	2371158200	Class 105°C	---	---
Power Transformer (T801)	Hua Jung	2374209600	Class B	Applicable part in IEC 60950 and evaluated according to IEC 60085	Accepted by TÜV Rheinland
	Mylar	2374209600	Class B	dto	dto
	Li Tai	2374209600	Class B	dto	dto
	Delta	2374209600	Class B	dto	dto
Photo Coupler (I802)	Sharp	PC817 Series	Isolation distance > 0.4mm	VDE 0884	VDE, UL, FI
	Toshiba	TLP621	Isolation distance > 0.4mm	VDE 0884	VDE, UL, FI
	Toshiba	TLP721F(D4-GR)	Isolation distance > 0.4mm	VDE 0884	VDE, UL, FI
	Vishay (Telefunken)	TCET1103G	Isolation distance > 0.4mm	VDE 0884	VDE, UL, FI

<sup>1)</sup> an asterisk indicates a mark which assures the agreed level of surveillance

1.6	TABLE: electrical data					P
fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	condition/status

IEC 950				
Clause	Requirement – Test		Result - Remark	Verdict

Power supply module (PCB P/N: L51BPBA)						
F801	--	90/50Hz	20.1	0.40	0.40	Max. brightness and contrast with full white pattern.
F801	--	90/60Hz	20.1	0.36	0.36	dto
F801	0.8	100/50Hz	20.2	0.36	0.36	dto
F801	0.8	100/60Hz	20.2	0.19	0.19	dto
F801	0.8	240/50Hz	21.5	0.19	0.19	dto
F801	0.8	240/60Hz	21.6	0.19	0.19	dto
F801	--	254/50HZ	21.8	0.19	0.19	dto
F801	--	254/60Hz	21.8	0.19	0.19	dto
F801	--	264/50HZ	21.8	0.19	0.19	dto
F801	--	264/60Hz	21.8	0.19	0.19	dto
Power supply module (PCB P/N: L51BH)						
F801	--	90/ 50Hz	25.5	0.46	0.46	Max. brightness and contrast with full white pattern.
F801	--	90/ 60Hz	25.5	0.45	0.45	dto
F801	0.8	100/ 50Hz	26.2	0.43	0.43	dto
F801	0.8	100/ 60Hz	26.2	0.43	0.43	dto
F801	0.8	240/ 50Hz	27.5	0.22	0.22	dto
F801	0.8	240/ 60Hz	27.6	0.22	0.22	dto
F801	--	254/ 50Hz	27.2	0.22	0.22	dto
F801	--	254/ 60Hz	27.3	0.22	0.22	dto
F801	--	264/ 50Hz	28.1	0.22	0.22	dto
F801	--	264/ 60Hz	28.1	0.22	0.22	dto

2.1.10	TABLE: discharge test				P
Condition	$\tau$ calculated (s)	$\tau$ measured (s)	t u→ 0V (s)	comments	
Power supply module (PCB P/N: L51BPBA)					
switch on	0.88	0.23	--	$V_{PK} = 376V, V_{37\%} = 140V$	
switch off	0.88	0.4	--	$V_{PK} = 372V, V_{37\%} = 138V$	

IEC 950					
Clause	Requirement – Test			Result - Remark	Verdict
Overall capacity: 0.44µF (C801 = C824 = 0.22µF)					
Discharge resistor: 2MΩ (R801 = R802 = 1MΩ)					
Power supply module (PCB P/N: L51BH)					
Switch on, fuse in	0.6	0.35	--	V <sub>PK</sub> = 376V, V <sub>37%</sub> = 140V	
Switch off, fuse in	0.6	0.48	--	V <sub>PK</sub> = 376V, V <sub>37%</sub> = 140V	
Fuse out	--	0.01	--	V <sub>PK</sub> = 376V, V <sub>37%</sub> = 140V	
Overall capacity: 0.44µF (C801 = C824 = 0.22µF)					
Discharge resistor: 1.36MΩ (R801 = R819 = 680kΩ)					

2.2.7	Table: working voltage measurement			P
Location	RMS Voltage (V)	Peak Voltage (V)	Comments <sup>1)</sup>	
Power supply module (PCB P/N: L51BPBA)				
T801 pin 3 – 10	<b>488</b>	<b>274</b>	Highest rms and peak	
I802 pin 2 – 3	356	226		
Power supply module (PCB P/N: L51BH)				
T801 pin 7 – 1	218	356		
pin 7 – 3	272	504		
pin 7 – 4	236	424		
pin 7 – 5	210	352		
pin 7 – 6	210	344		
pin 9 – 1	213	332		
pin 9 – 3	<b>278</b>	<b>512</b>	Highest value	
pin 9 – 4	235	434		
pin 9 – 5	215	376		
pin 9 – 6	214	344		
pin 10 – 1	214	356		
pin 10 – 3	270	496		
pin 10 – 4	231	408		
pin 10 – 5	214	352		

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
	pin 10 – 6	214	344
	pin 11 – 1	218	336
	pin 11 – 3	278	512
	pin 11 – 4	238	432
	pin 11 – 5	211	376
	pin 11 – 6	210	336
Input voltage: 240V/60Hz			

2.3.2	TABLE: Hazardous voltage measurement			P
Transformer	Location	Max. Voltage		Voltage Limitation
		Peak	DC	Components
Power supply module (PCB P/N: L51BPBA)				
T801	Pin 7 – 10	24.2	--	--
	Pin 11 – 12	25.2	--	--
Power supply module (PCB P/N: L51BH)				
T801	Pin 10 - 11	23.6	--	--
	Pin 7 – 11	22.0	--	--

2.4	TABLE: limited current circuit measurement					P
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments	
<b>For Model: Sampo, type: DIVTL0020-D22</b>						
CON2 pin 1 to Earth	31.2	15.6	45.8	32.1	Normal condition	
CON2 pin 1 to Earth	69.6	34.8	108.4	70	C14 shorted	
CON2 pin 1 to Earth	58.4	29.2	44	30.8	L1 shorted	
CON3 pin 1 to Earth	31.4	15.7	45.8	32.1	Normal condition	
CON3 pin 1 to Earth	69.3	34.7	108.4	70	C15 shorted	
CON3 pin 1 to Earth	58.2	29.1	44	30.8	L2 shorted	
PT1 pin 7-10	33.8	16.9	48.5	33.95	Normal condition	
PT1 pin 7-Earth	8.8	4.4	45.5	31.85	Normal condition	

IEC 950						
Clause	Requirement – Test			Result - Remark		Verdict
PT1 pin 10-Earth	0	0	--	--	Normal condition, unit shut down	
PT1 pin 7-Earth	8.5	4.25	108.5	70	L1 shorted	
PT1 pin 7-Earth	8.7	4.35	50.5	35.35	Q4 shorted	
<b>For Model: Sampo, type: DIVTL0070-D21</b>						
CON2 pin 1 to 2	31	16	43.0	30.1	Normal condition	
CON2 pin 1 to 2	48	24	42.8	29.9	L1 shorted	
CON2 pin 1 to 2	0	0	--	--	with Q7 G – D shorted, unit shut down	
CON2 pin 1 to Earth	0	0	--	--	with normal condition, unit shut down	
CON2 pin 1 to Earth	0	0	--	--	with L1 shorted, unit shut down	
CON2 pin 1 to Earth	0	0	--	--	with Q7 G – D shorted, unit shut down	
CON2 pin 2 to Earth	9	4.5	43.8	30.6	Normal condition	
CON2 pin 2 to Earth	9	4.5	44.7	31.2	L1 shorted	
CON2 pin 2 to Earth	0	0	--	--	with Q7 G – D shorted, unit shut down	
PT1 pin 7-10	32.2	16.1	45.5	31.85	Normal condition	
PT1 pin 7-Earth	9	4.5	44.8	31.36	Normal condition	
PT1 pin 10-Earth	0	0	--	--	Normal condition, unit shut down	
PT1 pin 7-10	52.1	26.05	42.1	29.47	L1 shorted	
PT1 pin 7-10	0	0	--	--	Q4 pin D-S shorted, unit shut down	
PT1 pin 7-Earth	9	4.5	43.9	30.73	L1 shorted	
<b>For Model: Chi Sam, type: CDA-039F</b>						
JP2 pin 1 to Earth	0	0	--	--	with normal condition, unit shut down	
JP2 pin 1 to Earth	0	0	--	--	with C6 shorted, unit shut down	
JP2 pin 1 to Earth	0	0	--	--	with L1 shorted, unit shut down	
JP3 pin 1 to Earth	0	0	--	--	with normal condition, unit shut down	

IEC 950

Clause	Requirement – Test				Result - Remark	Verdict
JP3 pin 1 to Earth	0	0	--	--	with C13 shorted, unit shut down	
JP3 pin 1 to Earth	0	0	--	--	with L2 shorted, unit shut down	
T1 pin 6 – 12	0	0	--	--	Normal condition, unit shut down	
T1 pin 6 – Earth	0	0	--	--	Normal condition, unit shut down	
T1 pin 12 – Earth	0	0	--	--	Normal condition, unit shut down	
<b>For Model: Chi Sam, type: CDA-2103H01</b>						
JP2 pin 1 to 3	0	0	--	--	with normal condition, unit shut down	
JP2 pin 1 to 3	0	0	--	--	with Q4 pin 2 – 3 shorted, unit shut down	
JP2 pin 1 to Earth	0	0	--	--	with normal condition, unit shut down	
JP2 pin 1 to Earth	0	0	--	--	with Q4 pin 2 – 3 shorted, unit shut down	
JP2 pin 3 to Earth	7	3.5	50	35	Normal condition	
JP2 pin 3 to Earth	1.8	0.9	50	35	Q4 pin 2 – 3 shorted	
T1 pin 7 - Earth	0	0	--	--	Normal condition, unit shut down	
<b>For Model: Emax, type: PLCD1015202</b>						
CN2 pin 1 to 2	0	0	--	--	with normal condition, unit shut down	
CN2 pin 1 to 2	0	0	--	--	with L1 shorted, unit shut down	
CN2 pin 1 to 2	0	0	--	--	with Q8 G – D shorted, unit shut down	
CN2 pin 1 to Earth	0	0	--	--	with normal condition, unit shut down	
CN2 pin 1 to Earth	0	0	--	--	with L1 shorted, unit shut down	
CN2 pin 1 to Earth	0	0	--	--	with Q8 G – D shorted, unit shut down	
CN2 pin 2 to Earth	5.8	2.9	44.9	31.4	Normal condition	
CN2 pin 2 to Earth	0	0	--	--	with L1 shorted, unit shut	

IEC 950						
Clause	Requirement – Test				Result - Remark	Verdict
						down
CN2 pin 2 to Earth	0	0	--	--		with Q8 G – D shorted, unit shut down
T1 pin 6 – 12	0	0	--	--		Normal condition, unit shut down
T1 pin 6 – Earth	0	0	--	--		Normal condition, unit shut down
T1 pin 12 – Earth	0	0	--	--		Normal condition, unit shut down
<b>For model: Lien Chang, P/ N: LI-1026</b>						
Normal condition						
T1 pin 10 to Earth	0	0	--	--		Unit shut down immediately, no hazards
CN2 HV to CN2 LV	0	0	--	--		Unit shut down immediately, no hazards
CN2 HV to Earth	0	0	--	--		Unit shut down immediately, no hazards
CN2 LV to Earth	16.0	8.0	56.2	39.34		
Single fault condition						
CN2 HV to CN2 LV	0	0	--	--		With C13 shorted, unit shut down immediately, no hazards
CN2 HV to Earth	0	0	--	--		With C13 shorted, unit shut down immediately, no hazards
CN2 LV to Earth	17.6	8.8	134.2	70		With C13 shorted
CN2 HV to CN2 LV	0	0	--	--		With L1 shorted, unit shut down immediately, no hazards
CN2 HV to Earth	0	0	--	--		With L1 shorted, unit shut down immediately, no hazards
CN2 LV to Earth	15.6	7.8	54.4	38.08		With L1 shorted
CN2 HV to CN2 LV	0	0	--	--		With Q5 pin 1 – 8 shorted, unit shut down immediately, no hazards
CN2 HV to Earth	0	0	--	--		With Q5 pin 1 – 8 shorted, unit shut down immediately, no hazards
CN2 LV to Earth	18.4	9.2	56.6	39.62		With Q5 pin 1 – 8 shorted
Note: Output measured with an 2 kΩ resistor as load.						

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict

2.5.11	TABLE: ground continue test			<b>P</b>
Location	Resistant measured ( $\Omega$ )	Comments		
Power supply module (PCB P/N: L51BPBA)				
Inlet ground pin to chassis	0.06	25A/ 1min		
Inlet ground pin to chassis	0.06	30A/ 2 min		
Inlet ground pin to PE trace (C823)	0.21	25A/ 1min		
Inlet ground pin to PE trace (C823)	0.21	30A/ 2 min		
Power supply module (PCB P/N: L51BH)				
AC inlet earth pin to D-sub	0.028	30A/ 2 min		
Screw hole to C856 secondary	0.010	30A/ 2 min		
Screw hole to C823 secondary	0.015	30A/ 2 min		

2.9.2 and 2.9.3	TABLE: clearance and creepage distance measurements					<b>P</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)
Power supply module (PCB P/N: L51BPBA)						
Primary components (with 10N) → earth	< 420	< 250	2.0	6.0	2.5	6.2
Primary components (with 10N) → secondary components (with 10N) on SPS	< 420	< 250	4.0	7.8	5.0	8.0
Primary trace → earthed trace	< 420	< 250	2.0	↓	2.5	↓
- under C823				7.0		7.0
- under C802, C803				5.0		5.0
- near L801				4.0		4.0
- near L803				4.7		4.7
Primary traces → secondary trace	< 420	< 250	4.0	↓	5.0	↓



IEC 950						
Clause	Requirement – Test			Result - Remark		Verdict

- under I802				7.8		7.8
- under T801	488	274	4.2	7.6	5.8	7.6

Note:

1. Glued components (safety relevant): C812, C810
2. Tubed components (safety relevant): I801
3. One mylar sheet is placed between PCB and bottom metal chassis which size is 172 x 80mm.
4. Two construction shapes of mylar sheet are used:
  - a) There is a mylar sheet (max. dimension: 77 x 170 x 30mm) located round SPS board.
  - b) There is a "L" shape of mylar sheet (max. dimension: 181 x 125 x 20mm) located under SPS board.
5. Operational insulation shorted, see 5.4.4.

Power supply module (PCB P/N: L51BH)

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)
Primary components (with 10N) → earth	< 420	< 250	2.0	6.2	2.5	6.5
Primary components (with 10N) → secondary components (with 10N)	< 420	< 250	4.0	6.2	5.0	6.6
Primary trace → earthed trace	< 420	< 250	2.0	↓	2.5	↓
- under P801				5.3		5.3
- under C804, C802				4.8		4.8
- under C823				4.9		5.1
- under C856				5.2		5.2
- under C825, C803				5.0		5.0
- near L808				5.3		8.0
- under T801				5.5		5.5
Primary traces → secondary trace	< 420	< 250	4.0	↓	5.0	↓
- under I802				5.1		5.1
- near J826				4.6		5.1

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict

Note:

1. Glued components (safety relevant): C812
2. One mylar sheet in placed between PCB and bottom metal chassis which size is 171.5 x 115mm.
3. One slot groove near L808 which size is 27 x 1.0mm.
4. One slot groove under C823 which size is 17 x 1.0mm.
5. One slot groove near J826 which size is 17 x 1.0mm.
6. Operational insulation shorted, see 5.4.4.

2.9.4.1	TABLE: distance through insulation measurements			<b>P</b>
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
photo coupler (reinforced insulation)	250	3000	0.4	certified component
See appended table 1.5.1 for details of distance through insulation.				

4.3.15/16 & 4.4.6	Table: enclosure openings		<b>P</b>
Location	Size (mm)	Comments	
<b>For type A enclosure</b>			
Top	3.4 x 3.4	numerous openings	
Side	3.4 x 3.4	numerous openings	
Bottom	none		
<b>For type B enclosure</b>			
Top	none		
Side	Ø2.0	numerous circular openings	
Bottom	none		
<b>For type C enclosure</b>			
Top	Max. 46 x 1.3	30 openings (see sub-clause 4.3.15)	
Side	none		
Bottom	34 x 0.9	7 openings (see sub-clause 4.4.6)	

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict

<b>For type D enclosure</b>			
Top	Max. 39.2 x 1.0	35 openings (see sub-clause 4.3.15)	
Side	none		
Bottom	Max. 27.8 x 1.0	8 openings (see sub-clause 4.4.6)	
<b>For type E enclosure</b>			
Top	--	No openings.	
Side	Ø2.6	numerous openings	
Bottom	--	No openings.	

5.1	TABLE: temperature rise measurements			<b>P</b>	
	test voltage (V) .....	a) 100V-10%	b) 240V + 10%	c) 240V + 6%	—
	t1 (°C) .....				—
	t2 (°C) .....				—
temperature rise dT of part/at:		dT (K)	required dT (K)		
Power supply module (PCB P/N: L51BPBA)					
<b>For type A enclosure</b>					
Test voltage		a)	b)	--	
T801 coil (S.P.S)		24.5	29.5	70	
T801 core (S.P.S)		24.0	30.7	70	
T1 coil (Inverter)		35.5	36.0	65	
T1 core (Inverter)		35.3	35.7	65	
Enclosure		13.4	15.2	55	
Ambient		24.5°C	24.5°C	--	
<b>For type B enclosure</b>					
T801 coil (S.P.S)		31.0	26.4	70	
T801 core (S.P.S)		32.6	27.5	70	
L805 coil (S.P.S)		15.0	16.5	90	
L805 core (S.P.S)		13.4	14.3	90	

IEC 950				
Clause	Requirement – Test	Result - Remark		Verdict
C812 body (S.P.S)		19.9	20.5	45
I801 heatsink (S.P.S)		20.2	18.4	65
D804 heatsibnk (S.P.S)		27.4	53.6	65
PCB under R840 (Inverter)		20.8	26.4	65
PT1 coil (Inverter)		42.1	41.7	70
PT1 core (Inverter)		43.4	43.0	70
L1 coil (Inverter)		33.8	33.4	65
Enclosure inside		17.9	15.4	55
I602 heatsink		26.0	26.5	65
Ambient		28.5°C	28.3°C	--
<b>For type C enclosure</b>				
T801 coil (S.P.S)		28.3	33.0	70
T801 core (S.P.S)		26.2	31.0	70
L805 coil (S.P.S)		15.1	14.4	65
L805 core (S.P.S)		13.6	13.2	65
C812 body (S.P.S)		20.3	19.5	45
I801 heatsink (S.P.S)		21.5	26.7	--
D804 heatsibnk (S.P.S)		26.0	27.3	--
PCB under R840 (Inverter)		26.6	20.6	65
T1 coil (Inverter)		36.4	37.3	65
T1 core (Inverter)		39.6	40.4	65
L1 coil (Inverter)		34.1	34.8	65
Rear enclosure		13.8	15.5	55
L177 coil		28.1	29.0	65
Ambient		23.7°C	23.9°C	--
<b>For type D enclosure</b>				
T801 coil (S.P.S)		22.3	19.4	70
T801 core (S.P.S)		20.7	18.2	70
L805 coil (S.P.S)		34.4	38.7	65
L805 core (S.P.S)		34.4	39.2	65
C812 body (S.P.S)		26.3	23.3	45
I801 heatsink (S.P.S)		30.2	30.2	--

IEC 950					
Clause	Requirement – Test			Result - Remark	Verdict
D804 heatsibnk (S.P.S)				30.8    31.4	--
PCB under R840 (Inverter)				33.1    25.2	65
T1 coil (Inverter)				41.7    41.8	65
T1 core (Inverter)				41.0    41.2	65
L1 coil (Inverter)				33.0    33.0	65
Rear enclosure				9.2    9.3	55
L177 coil				34.0    34.1	65
Ambient				25.9°C    23.9°C	--
Power supply module (PCB P/N: L51BH)					
<b>For type E enclosure</b>					
Test voltage				a)    c)	--
T801 coil (S.P.S)				40.5    45.0	70
T801 core (S.P.S)				40.3    49.6	70
L805 coil (S.P.S)				27.0    20.5	65
I601 HS (touch PCB)				50.1    45.3	65
D804 HS (touch PCB)				41.4    41.9	65
Q808 HS (touch PCB)				34.2    59.7	65
D805 HS (touch PCB)				46.8    54.4	65
C812 body				25.6    27.6	65
PCB under R840				32.7    22.0	65
T1 coil (on inverter)				58.3    59.2	65
T1 core (on inverter)				54.0    54.7	65
L1 coil (on inverter)				48.3    48.9	65
Enclosure				28.6    32.2	55
Ambient				26.3°C    25.6°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 B →  $dT_{max} = 95K - 10K - (40-25)K = 70K$

Electrolyte capacitor or components with:

■ max. absolute temp. of 105°C →  $dT_{max} = (105-40) K = 65K$

User touchable surface with:

■ max. temp. rise of 70K →  $dT_{max} = 70K - (40-25)K = 55K$

5.2	TABLE: leakage current measurement			P
Condition	current L→PE (mA)	current N→PE (mA)	comments	
Power supply module (PCB P/N: L51BPBA)				
switch on	0.7	0.7		
switch off	0.67	0.67		
Input voltage :	254V			
Input frequency :	60Hz			
Overall capacity:	C802 = C803 = C823 = 4700pF			
Power supply module (PCB P/N: L51BH)				
Switch on	2.65	2.7		
Input voltage :	264V			
Input frequency :	60Hz			
Overall capacity:	C802 = C803 = C804 = C823 = C825 = C856 = 10000pF			

5.3	TABLE: electric strength measurements		P
test voltage applied between:	test voltage (V)	breakdown	
Unit primary and secondary	DC 4242	No	
Unit primary and PE	DC 2506	No	

IEC 950			
Clause	Requirement – Test	Result - Remark	Verdict
T801 primary and secondary		AC 3000	No
T801 primary and core		AC 1772	No
T801 secondary and core		AC 1772	No
Two layers insulation tape in T801		AC 3000	No

5.4		TABLE: fault condition tests					P	
		ambient temperature (°C) .....					See below	—
		model/type of power supply .....						—
		manufacturer of power supply .....						—
		rated markings of power supply .....						—
No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
Power supply module (PCB P/N: L51BPBA)								
1.	D801 ~ to +	s-c	240	< 1 sec	F801	0	Fuse opened immediately, no hazards	
2.	C812	s-c	240	< 1 sec	F801	0	Fuse opened immediately, no hazards	
3.	D805	s-c	240	< 1 sec	F801	0	Fuse opened immediately, no hazards	
4.	I801 pin 1 – GND	s-c	240	< 1 sec	F801	0	Fuse opened immediately, no hazards	
5.	I801 pin 2 – 4	s-c	240	< 1 sec	F801	--	Unit shut down, I801 damaged, no hazards	
6.	I803 pin 1 – 3	s-c	240	15 min	F801	0.08	Unit went into cycle protection, no components damaged, no hazards	
7.	I802 pin 1 – 2	s-c	240	15 min	F801	0.04	Unit went into cycle protection, no components damaged, no hazards	
8.	I802 pin 3 – 4	s-c	240	< 1 sec	F801	--	Unit went into cycle protection, no components damaged, no hazards	

IEC 950

IEC 950							
Clause	Requirement – Test					Result - Remark	Verdict
9.	T801 pin 10 – 7	s-c	240	15 min	F801	0.08	Unit went into cycle protection, no components damaged, no hazards
10.	T801 pin 11 – 12	s-c	240	< 1 sec	F801	--	Unit went into cycle protection, no components damaged, no hazards
11.	T801 pin 10 – 7	o-l	240	2 hr	F801	--	Overload to 8.7A, T801 = 43.7°C, ambient = 24.8°C, no hazards
12.	T801 pin 11 – 12	o-l	240	2 hr	F801	--	Overload to 3.5A, I801 damaged, T801 coil = 80.7°C, T801 core = 72°C, ambient = 24.8°C, no hazards
13.	Ventilation Openings (type A Enclosure)	Blocked	240	--	F801	--	Temp. was stabled, T801 = 57.4°C, no hazards
14.	Ventilation Openings (type B Enclosure)	Blocked	240	--	F801	--	Temp. was stabled, T801 = 60.6°C, no hazards
15.	Ventilation Openings (type C Enclosure)	Blocked	240	--	F801	--	Temp. was stabled, T801 = 59.5°C, no hazards
16.	Ventilation Openings (type D Enclosure)	Blocked	240	--	F801	--	Temp. was stabled, T801 = 66.8°C, no hazards
Power supply module (PCB P/N: L51BH)							
17.	I801 pin 2 – 6	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
18.	I801 pin 2 – 4	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
19.	I801 pin 1 – 8	s-c	240	< 1 sec	F801	0	Fuse opened, I801, R816, D809, Q807 damaged, no hazards
20.	I801 pin 3 – 8	s-c	240	< 1 sec	F801	0	Fuse opened, R816, Q808, I801 damaged, no hazards





IEC 950

IEC 950							
Clause	Requirement – Test				Result - Remark		Verdict
21.	I801 pin 3	dis.	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
22.	I801 pin 1 – 2	s-c	240	< 1 sec	F801	--	Unit shut down, no components damaged, no hazards
23.	I802 pin 3 – 4	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
24.	I802 pin 1	dis.	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
25.	D813	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
26.	D805	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
27.	D804	s-c	240	< 1 sec	F801	0.05	Unit shut down, no components damaged, no hazards
28.	D806	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
29.	Q808 G – D	s-c	240	< 1 sec	F801	0	Fuse opened, Q808, I801 damaged, no hazards
30.	Q808 D – S	s-c	240	< 1 sec	F801	0	Fuse opened, R840 damaged, no hazards
31.	Q808 G – S	s-c	240	< 1 sec	F801	0.04	Unit shut down, no components damaged, no hazards
32.	I803 K – A	s-c	240	< 1 sec	F801	--	Unit shut down, no components damaged, no hazards
33.	D801	s-c	240	< 1 sec	F801	0	Fuse opened, no hazards
34.	T801 pin 9 – 10	s-c	240	30 min	F801	0.38/0.04	D804 damaged, T801 coil = 100.5°C, T801 core = 89.2°C, no hazards
35.	T801 pin 7 – 11	s-c	240	85 min	F801	0.34	No components damaged, T801 coil = 85.9°C, T801 core = 83.3°C, no hazards

IEC 950							
Clause	Requirement – Test					Result - Remark	Verdict
36.	T801 pin 9 – 10	o-l	240	200 min	F801	--	Overload to 2.7A, no components damaged, temp. was stabled, T801 = 70.3°C, ambient = 25.5°C, no hazards
37.	T801 pin 7 – 11	o-l	240	240 min	F801	--	Overload to 6.6A, no components damaged, temp. was stabled, T801 = 75.6°C, ambient = 25.6°C, no hazards
38.	+ 12V output	o-l	240	200 min	F801	--	Overload to 2.7A, no components damaged, temp. was stabled, T801 coil = 68.1°C, ambient = 25.8°C, no hazards
39.	+ 5V output	o-l	240	200 min	F801	--	Overload to 6.6A, no components damaged, temp. was stabled, T801 coil = 75.3°C, ambient = 25.8°C, no hazards
40.	Ventilation Openings (type D Enclosure)	Blocked	240	200 min	F801	--	Temp. was stabled, T801 = 88.7 °C, enclosure = 61.5°C, ambient = 26.8°C, no hazards
In fault column, where s-c = short-circuited, dis = disconnected, o-l = over-loaded							
For above fuse opened items, the tests have been repeated 10 times and same results came out for all fuse sources.							

5.4.10	TABLE: ball pressure test of thermoplastics		<b>P</b>
	required impression diameter (mm) .....	≤ 2 mm	—
part		test temperature (°C)	impression diameter (mm)
Bobbin material (GE / PBT 420-SE0) of L805		125	1.7

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>
EXPLANATION FOR ABBREVIATIONS  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 = Pass, F = Fail, N = Not applicable. Place in the column to the right.			
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.	No power cord provided.	<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)	Considered, see report IEC 60950.	<b>P</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.	Required texts will be printed on label and affix to unit when national approved.	<b>P</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".	Required texts will be printed on label and affix to unit when national approved.	<b>P</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".	No power cord provided.	<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.	No socket outlet.	<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 I 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.	Not a 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 inside.	<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.	Method 3 is not used.	<b>P</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, no exception applied.	<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.	Mains voltage as reference voltage.	<b>P</b>
2.9.4.2 C	Amend the last line on page 117a as follows –	Amended.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>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 –</p> <p>Requirements for wound components are given in 2.9.4.4.</p>		
2.9.4.4 C	<p>Modify the title as follows –</p> <p>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>P</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 Heavy Current Regulations Section 107-1-D1 or EN 60309-2.</p>	No power cord provided.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.1 S	<p>(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</p> <p>SEV 6532-2,1991 Plug type 15 3P+N+PE 250/400V, 10A</p> <p>SEV 6533-2,1991 Plug type 11 L+N 250V, 10A</p> <p>SEV 6534-2,1991 Plug type 12 L+N+PE 250V, 10A</p> <p>EN 60 309 applies for plugs for currents exceeding 10A</p>	No power cord provided.	<b>N</b>
3.2.1 S	<p>(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.</p> <p>Note: "standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	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	<p>Replace</p> <p>"60245 IEC 53" by "H05 RR-F",</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F" and</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F".</p> <p>In table 11, replace the first four lines by the following:</p> <p style="text-align: center;">Up to and including 6 0.75 <sup>1)</sup></p>	Replaced.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<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.	No direct plug-in 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.	Considered.	<b>P</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	<p>(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.</p> <p>In Sweden, this requirement does not apply to permanently connected equipment or pluggable equipment Type B.</p>	No TNV.	<b>N</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
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. D	(DE) a) A license is required by those who operate an X-ray emission source.	No CRT.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<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 1<math>\mu</math>Sv/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 emission source that the X-rays generated are adequately screened by the intrinsically safe</p>		

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	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><b>EXPLANATION FOR ABBREVIATIONS</b></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.	No 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.	X2 capacitor comply with this clause (see report IEC 60950 report).	<b>P</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.	No transient protection components connected to safety earthed parts.	<b>P</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.	No outlet.	<b>N</b>
1.7.01 NF	-1st dash (DK). When supplied in Denmark the	Included in the voltage range.	<b>P</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	appliances shall be set to 230 V .		
	-5th dash (DK). The equipment may instead be provided with a marking indicating name, trademark or identify of the responsible vendor.	Refer to CB report page 4.	<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.	Earthing test conducted at 25A, see IEC 60950 report.	<b>P</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).	Appliance inlet is considered as disconnect device.	<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.	Only one supply from the mains.	<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.	Equipment is not a UPS.	<b>N</b>
2.7.03 NF	(DK,FI,NO,SE). A single-pole protective device is acceptable.	Only one fuse on live phase.	<b>P</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.	Equipment is not a 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.	No visible crack.	<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 voltages above the value and  * The current which may be drawn for more than two minutes at any load, including short-	Supplied from the mains.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	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.	dto.	<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.	Supplied from the mains.	<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.	Considered, the voltage is tested within the voltage range of 220V -10 %, +10%.	<b>P</b>
	IEC standard for plug is IEC 60083.  The Chinese National standard for Plugs is GB1002-1996, which is not equivalent with IEC60083.	No power supply cord provided.	<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.	Considered.	<b>P</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	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.	Clearance distance from column 2 taken (≤300V)	<b>P</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	Clearance distance from column 2 taken (≤300V)	<b>P</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 of two layers or one extruded layer	Different Japanese standard text considered.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<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	<p>Replacement:</p> <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</p>	Replaced	<b>N</b>

National Deviation													
Clause	Requirement – Test	Result – Remark	Verdict										
	<p>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>												
	<p><b>U.1 Wire construction</b></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><b>U.2 Type tests</b></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><b>U.2.1 Electric strength</b></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><b>U.2.2 Adherence and flexibility</b></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="1"> <thead> <tr> <th>Nominal diameter of conductor (mm)</th> <th>Mandrel diameter (mm±0.2mm)</th> </tr> </thead> <tbody> <tr> <td>0.20 – 0.34</td> <td>4.0</td> </tr> <tr> <td>0.35 – 0.49</td> <td>6.0</td> </tr> <tr> <td>0.50 – 0.74</td> <td>8.0</td> </tr> <tr> <td>0.75 – 1.00</td> <td>10.0</td> </tr> </tbody> </table> <p>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.</p>	Nominal diameter of conductor (mm)	Mandrel diameter (mm±0.2mm)	0.20 – 0.34	4.0	0.35 – 0.49	6.0	0.50 – 0.74	8.0	0.75 – 1.00	10.0		<b>N</b>
Nominal diameter of conductor (mm)	Mandrel diameter (mm±0.2mm)												
0.20 – 0.34	4.0												
0.35 – 0.49	6.0												
0.50 – 0.74	8.0												
0.75 – 1.00	10.0												

National Deviation																					
Clause	Requirement – Test	Result – Remark	Verdict																		
	<p>U.2.3 Heat shock</p> <p>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.</p> <p>The temperature of oven is specified in the following Table U.2.3.</p> <p>Table U.2.2 shows and explains required mandrel diameter and tension.</p> <p>Test must be performed at room ambient after taking out from oven.</p> <p>Table U.2.3 – Oven Temperature</p> <table border="1"> <thead> <tr> <th>Class</th> <th>A</th> <th>E</th> <th>B</th> <th>F</th> <th>H</th> </tr> </thead> <tbody> <tr> <td></td> <td>(105)</td> <td>(120)</td> <td>(130)</td> <td>(155)</td> <td>(180)</td> </tr> <tr> <td>Oven Temp.</td> <td>200</td> <td>215</td> <td>225</td> <td>240</td> <td>260</td> </tr> </tbody> </table> <p>(°C±2°C)</p>	Class	A	E	B	F	H		(105)	(120)	(130)	(155)	(180)	Oven Temp.	200	215	225	240	260		<b>N</b>
Class	A	E	B	F	H																
	(105)	(120)	(130)	(155)	(180)																
Oven Temp.	200	215	225	240	260																
	<p>U.2.4 Retention of electric strength after bending</p> <p>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.</p> <p>Table U.2.2 shows and explains required mandrel diameter and tension.</p>		<b>N</b>																		
	<p>U.3 Routine test</p> <p>Winding wire is subjected to electric strength test during the production in accordance with U.3.1 and U.3.2 by wire manufacturer.</p>		<b>N</b>																		
	<p>U.3.1 Full-length test</p> <p>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.</p>		<b>N</b>																		
	<p>U.3.2 Audit test</p> <p>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.</p>		<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".	Rated 100-240V.	<b>P</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.	Frequencies of 60/50Hz.	<b>P</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 plug 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	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)		P
<b>EXPLANATION FOR ABBREVIATIONS</b> 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."	Added.	N
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.	Added.	N
1.5.1	Add to paragraph 1: "or the other relevant Australian or New Zealand Standard."	Added.	P
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.	P
1.7.14	Add to paragraph 1: "In Australia and New Zealand all safety instructions shall be in English."	User manual is in English.	P
2	Add after clause 2: "For the limit of direct current from a.c. appliances, refer to AS/NZS Appendix 3."	See Appendix 3.	N
3.2.2	Substitute for table 10: "For sizes of cables and conduits in Australia, refer to AS 3000."	No power cord provided.	N
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	No power cord provided.	N

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>&gt; 25 ≤ 32    4</p> <p>&gt; 32 ≤ 40    6</p> <p>&gt; 40 ≤ 63    10</p> <p>* This nominal cross-section area is only allowed for class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug, does not exceed 2m (0.5mm<sup>2</sup> three-core supply flexible cords are not permitted; see Note 2 to table 2.17 of AS/NZS 3191).</p>		
4.4.1	For the Australian alternative resistance to fire test, refer to Appendix 2.”	Not applied for Appendix 2.	<b>N</b>
6.4.2	<p>Replace the first paragraph by: “In Australia, compliance with 6.4.1 is checked by both the test of 6.4.2.1 and 6.4.2.2”.</p> <p>Delete the fourth paragraph ‘The choice of tests....manufacturer’.</p>	No TNV.	<b>N</b>
6.4.2.1	<p>Replace Clause 6.4.2.1 by:</p> <p><i>Impulse test</i> The electrical separation is subjected to ten impulses of alternating polarity, using the impulse test generator of Annex N. The interval between successive impulses is 60s and the initial voltage U<sub>i</sub> is:</p> <ul style="list-style-type: none"> <li>- in case (a) of 6.4.1, 7kV for hand-held telephones and for handsets; and 2.5kV for other equipment; and</li> <li>- in case (b) and (c) 1.5kV.</li> </ul> <p>Notes:</p> <p>1. The seven kV impulse is to simulate measured lighting surges in typical Australian rural and semi rural network lines.</p> <p>2. The value of 2.5kV has been chosen primarily to ensure adequacy of the insulation concerned, but not necessarily to simulate likely overvoltages.</p>	No TNV.	<b>N</b>
6.4.2.2	<p>Replace Clause 6.4.2.2 by:</p> <p><i>Electric strength test</i> The electrical separation is subjected for 60s to a substantially sinusoidal voltage having a frequency of 50Hz or 60Hz, or to a d.c. voltage equal to the peak value of the prescribed a.c. voltage.</p>	No TNV.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>The a.c. test voltage is:</p> <ul style="list-style-type: none"> <li>- in case (a) of 6.4.1      3kV</li> <li>- in case (b) and (c)      1.5kV.</li> </ul> <p>The voltage is gradually raised from zero to the prescribed voltage and then held at that value for 60s.</p> <p>NOTE:</p> <ol style="list-style-type: none"> <li>1. Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used.</li> <li>2. The 3 kV and 1.5kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</li> </ol>		
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</p>		<b>N</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>3350.1, the test being made at a temperature of 550°C.</p> <p>The 550°C glow-wire test need not be carried 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</p>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>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 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> </ol>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>b) they are likely to be impinged upon by the flame</p> <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</li> </ol>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>to connections.</p> <p>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.</p>		
Appendix 3	<p>Add Appendix:</p> <p><b>D.C. COMPONENTS FROM A.C. EQUIPMENT</b></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</p>		<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>which is continuously energized, e.g. stand-by 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>
EXPLANATION FOR ABBREVIATIONS P = Pass, F = Fail, N = Not applicable. Placed in the column to the right.			
<b>Special National Conditions</b>			
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."	Single phase.	<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.		<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.	Considered, see IEC 60950 report.	<b>P</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 © is rated more than 1/3 hp (locked rotor current over 43 A).	Not 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 power outlet.	<b>N</b>
2.7.6	Fuses provided in the earthed circuit conductor (neutral) are only permitted for equipment rated 125V, 15A.	No fuse in neutral or earth conductors.	<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.		<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.	No power cord provided.	<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. except for certain equipment, such as ATMs.	No power cord provided.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
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	No power cord provided.	<b>N</b>
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wiring bending space.	No power cord provided.	<b>N</b>
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CAN/CSA No. 0.	No power cord provided.	<b>N</b>
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 used	<b>N</b>
4.3.12	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C 1370.	No laser.	<b>N</b>
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.	<b>N</b>
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.	<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>
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.		<b>N</b>
Other Differences			
1.5.1	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.	Components are UL or CSA approved, see component list 1.5.1.	<b>P</b>



National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<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 with 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>		
3.4	Equipment connected to a centralized d.c. power system is required to meet special earthing wiring and marking requirements.		<b>N</b>
4.1.6	Wall and ceiling mounted equipment is required to comply with special loading tests.	Should be evaluated during national approval.	<b>N</b>
4.1.7	Equipment with handles is required to comply with special loading tests.		<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 levels for other than ringing signals are: $(U_{ac}/42.4 + U_{dc}/60) < = 1$ .	No TNV.	<b>N</b>
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>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
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>
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**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".	Single phase.	<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.		<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.	Considered, see IEC 60950 report.	<b>P</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>

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 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.		<b>N</b>
2.7.6	Fuses provided in the earthed circuit conductor (neutral) are only permitted for equipment rated 125V, 15A.	No fuse in earthing conductor.	<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.	No fuse used for limited power.	<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.	No power cord provided.	<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.	No power cord provided.	<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.	No power cord provided.	<b>N</b>
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.	No power cord provided.	<b>N</b>
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wiring bending space.	No power cord provided.	<b>N</b>
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No power cord provided.	<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 0.93mm <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	Components are UL approved, see component list	<b>P</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>material ratings in accordance with the applicable national (U.S. and Canadian) 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>	1.5.1.	
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	No TNV.	<b>N</b>

National Deviation			
Clause	Requirement – Test	Result – Remark	Verdict
	considered electrical separation unless subjected to special investigation.		
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>