IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-016842

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Switching power adaptor
Name and address of the applicant Nom et adresse du demandeur	Li Tone Electronics Co., Ltd. No. 29, Lane 311 Jie Sou Rd., Sec. 1, Sanhsia Town, Taipei Hsien 237 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	Li Tone Electronics Co., Ltd. No. 29, Lane 311 Jie Sou Rd., Sec. 1, Sanhsia Town, Taipei Hsien 237 Taiwan
Name and address of the factory Nom et adresse de l'usine	Li Tone Electronics Co., Ltd. The 3rd, Industrial Estate Chi Chou, Shin Chieh Town, Dong Guan City, Guang Don Province, P.R. China
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : AC 100-240V; 47-63Hz; 1A; Class II Output: refer to the test report
Trade mark (if any) Marque de fabrique (si elle existe)	LI TONE ELECTRONICS CO., LTD.
Model/type Ref. Ref. de type	LTE05W-SX-Z, LTE05E-SX (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank)
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1:2001 National differences see test report
As shown in the Test Report Ref. No.which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	11007677 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜV **TÜV Rheinland Group**

TÜV Rheinland Japan Ltd.
Shin Yokohama Daini Center Bldg.
3-19-5, Shin Yokohama, Kohoku-ku
Yokohama 222-0033 Japan
Phone + 81 45 470-1850
Fax + 81 45 473-5221
Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 19.10.2006

Signature: Dipl.-Ing. W. Hsu

10/061 CB 4.03

TEST REPORT

IEC 60950-1 and/or EN 60950-1

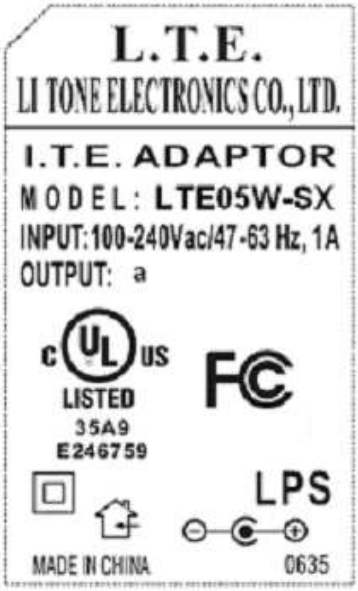
Information technology equipment – Safety –

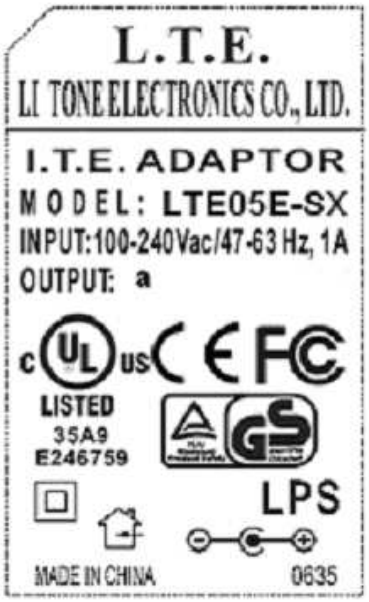
Part 1: General requirements

Report reference No	11007677 001
Tested by (printed name and signature)	Jason Liu
Approved by (printed name and signature)	Simon Yu
Date of issue	October 16, 2006
Testing Laboratory Name	TÜV Rheinland Taiwan Ltd., Taichung Laboratory
Address	10F, No. 219, Min-Chuan Road, Taichung 403, Taiwan
Testing location	CBTL ☒ CCATL ☐ SMT ☐ TMP ☐
Address	Same as above.
Applicant's Name	Li Tone Electronics Co., Ltd.
Address	No. 29, Lane 311, Jie Sou Rd., Sec. 1, Sanhsia Town, Taipei Hsien 237 Taiwan
Test specification	
Standard	IEC 60950-1: 2001 EN 60950-1: 2001 + A11: 2004
Test procedure	CB-scheme
Non-standard test method	N/A
Test Report Form No	IECEN60950_1B
TRF originator	SGS Fimko Ltd
Master TRF	Dated 2003-03

Test item description	Switching power adaptor
Trademark	LI TONE ELECTRONICS CO., LTD.
Manufacturer	Same as applicant
Model and/or type reference	LTE05W-SX-Z; LTE05E-SX (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank)
Serial number	Production samples without serial numbers
Rating(s)	I/P: 100-240 Vac, 47-63 Hz, 1A O/P: See page 5 for detail

Copy of marking plate:





	Output Rating (a)	
Model	**Vdc**	**A**
X = 0; Z = A, T or blank	3.3	1
X = 1; Z = A, T or blank	5	1
X = 2; Z = A, T or blank	12	0.5
X = 3; Z = A, T or blank	15	0.33
X = 4; Z = A, T or blank	24	0.2
X = Y; Z = A, T or blank	9	0.5

Summary of testing:

The equipment models LTE05W-SX-Z (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank) (direct plug-in type) and LTE05E-SX (X = 0, 1, 2, 3, 4, Y) (desk top type) are switching power adaptors for the use in information technology equipment.

In type designation of models LTE05W-SX-Z (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank), X could be 0, 1, 2, 3, 4, Y stand for output rating; Z could be “blank” for denote the United States of America plug; “T” for denote the European plug and “A” for denote the Australia plug.

In type designation of models LTE05E-SX (X = 0, 1, 2, 3, 4, Y), X could be 0, 1, 2, 3, 4, Y stand for output rating.

The models LTE05W-SX-Z (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank) and LTE05E-SX (X = 0, 1, 2, 3, 4, Y) are similar except for the type designation, shape of enclosure, PCB layout and method of connection to the mains.

All models are similar except for the type designation, output rating and transformer (T1).

The power adaptor's bottom enclosure is secured to top enclosure by ultrasonic welding.

The manufacturer specified maximum ambient temperature as +40°C.

The models LTE05E-SX (X = 0, 1, 2, 3, 4, Y) are cover the all countries in the CB procedure deviations and the models LTE05W-SX-Z (X = 0, 1, 2, 3, 4, Y; Z = A, E ,T or blank) are only used in those countries which fitting with suitable plug only.

The output of the switching power adaptors are in compiance with the requirements of sub-clause 2.5 (limited power source).

Unless otherwise specified, all tests were performed on models LTE05W-S1-T, LTE05W-S2-T, LTE05W-S4-T and LTE05E-S4 to represent the other similar models.

Other remarks:

For all AC plug (direct plug-in type) the injection part is integral with the enclosure that effectively prevent any disintegrator or conductive parts remaining in the socket and compression molding fundamentals not replaceable snap-fit type. Besides, the European plug portion is in compliance with the requirement of EN 50075: 1990 that test by TÜV Rheinland.

This test report contained procedure deviation of United States of America, Canada and Australia but the investigation of US plug, CA plug and AU plug have to be evaluated when submitted United States of America, Canada and Australia.

Particulars: test item vs. test requirements	
Equipment mobility	Direct plug-in equipment for models LTE05W-SX-Z (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank); Movable or transportable equipment for models LTE05E-SX (X = 0, 1, 2, 3, 4, Y)
Operating condition	Continuous
Mains supply tolerance (%)	-10%, +10%
Tested for IT power systems	Yes (for Norway)
IT testing, phase-phase voltage (V)	IT, 230V (for Norway)
Class of equipment	II
Mass of equipment (kg).....	0.09
Protection against ingress of water	IPX0
Test case verdicts	
Test case does not apply to the test object ..:	N/A
Test item does meet the requirement .....:	P(ass)
Test item does not meet the requirement ....:	F(ail)
Testing	
Date of receipt of test item .....:	September – October, 2006
Date(s) of performance of test .....:	October, 2006

General remarks

"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02".

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

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

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

Comments:

Summary of compliance with National Differences (for explanation of codes see below):
EU Group Differences, EU Special National Conditions, EU A-Deviations, AR, AT, AU, BE, CA, CH, CN, CZ, DE, DK, FI, FR, GB, GR, HU, IL, IN, IT, KE, KR, MY, NL, NO, PL, SE, SG, SI, SK, US.

AR=Argentina, AT=Austria, AU=Australia, BE=Belgium, CA=Canada, CH=Switzerland, CN=China, CZ=Czech Republic, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, GR=Greece, HU=Hungary, IL=Israel, IN=India, IT=Italy, KE=Kenya, KR=Korea, MY=Malaysia, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, SG=Singapore, SI=Slovenia, SK=Slovakia, US=United States of America.

For National Differences see end of this test report.

Factory:

1. Li Tone Electronics Co., Ltd.
   The 3rd, Industrial Estate, Chi Chou, Shin Chieh Town, Dong Guan City, Guang Don Province, P.R. China

Definition of variables:

Variable:	Range of variable:	Content:
Model LTE05W-SX-Z (Direct plug-in equipment)		
X	0, 1, 2, 3, 4, Y	Stand for output rating
Z	A, T or blank	Stand for different country plug
Model LTE05E-SX (Desk top type)		
X	0, 1, 2, 3, 4, Y	Stand for output rating

General product information:

The equipment models LTE05W-SX-Z (X = 0, 1, 2, 3, 4, Y; Z = A, T or blank) (direct plug-in type) and LTE05E-SX (X = 0, 1, 2, 3, 4, Y) (desk top type) are switching power adaptors for the use in information technology equipment.

Rating					
	Input			**Output**	
Model	Vac	A	Hz	Vdc	A
LTE05W-S0-Z LTE05E-S0	100-240	1	47-63	3.3	1
LTE05W-S1-Z LTE05E-S1	100-240	1	47-63	5	1
LTE05W-SY-Z LTE05E-SY	100-240	1	47-63	9	0.5
LTE05W-S2-Z LTE05E-S2	100-240	1	47-63	12	0.5
LTE05W-S3-Z LTE05E-S3	100-240	1	47-63	15	0.33
LTE05W-S4-Z LTE05E-S4	100-240	1	47-63	24	0.2

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		**P**
1.5	Components		**P**
1.5.1	General	See below.	**P**
	Comply with IEC 60950 or relevant component standard	Components that were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appended table 1.5.1).	**P**
1.5.2	Evaluation and testing of components	Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	**P**
1.5.3	Thermal controls	No thermal controls provided.	**N/A**
1.5.4	Transformers	Transformer used is suitable for its intended application and comply with the relevant requirements of the standard and particularly Annex C.	**P**
1.5.5	Interconnecting cables	Interconnection o/p cable to other device is carrying only SELV on an energy level below 240VA. Except for the insulation material, there are no further requirements for the o/p interconnection cable.	**P**
1.5.6	Capacitors in primary circuits ..... :		**N/A**
1.5.7	Double insulation or reinforced insulation bridged by components	Double or reinforced insulation between primary and secondary bridged by Y1-capacitor.	**P**
1.5.7.1	General	See below.	**P**
1.5.7.2	Bridging capacitors	Y1-type capacitor are provided between primary and secondary circuit.	**P**
1.5.7.3	Bridging resistors	No bridging resistors.	**N/A**
1.5.7.4	Accessible parts	See clause 2.4.	**P**
1.5.8	Components in equipment for IT power systems	Phase to secondary designed in according to phase-to-phase working voltage. The Y1 type capacitor used between phase-to-secondary.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.6	Power interface		**P**
1.6.1	AC power distribution systems	TN power system. IT power system for Norway only.	**P**
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment is the operation with the maximum specified DC-load. Results see appended table 1.6.2.	**P**
1.6.3	Voltage limit of hand-held equipment	This appliance is not a hand-held equipment.	**N/A**
1.6.4	Neutral conductor	Class II equipment. Phase conductors separated to body by reinforced insulation.	**P**
1.7	Marking and instructions		**P**
1.7.1	Power rating	All relevant markings are provided on a label.	**P**
	Rated voltage(s) or voltage range(s) (V) ..... :	100-240Vac	**P**
	Symbol for nature of supply, for d.c. only..... :	AC source	**N/A**
	Rated frequency or rated frequency range (Hz) :	47-63	**P**
	Rated current (mA or A) ..... :	1A	**P**
	Manufacturer's name or trademark or identification mark ..... :	LI TONE ELECTRONICS CO., LTD	**P**
	Type/model or type reference ..... :	See the copy of marking plates.	**P**
	Symbol for Class II equipment only ..... :	Double square mark provided on the labels.	**P**
	Other symbols ..... :	Additional symbols or marking does not give rise to misunderstanding.	**P**
	Certification marks ..... :	See the copy of marking plates for details.	**N/A**
1.7.2	Safety instructions	Safety instruction provided.	**P**
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	**N/A**
1.7.4	Supply voltage adjustment ..... :	Full range voltage design, no necessary adjustment.	**N/A**
	Methods and means of adjustment; reference to installation instructions ..... :	Same as above.	**N/A**
1.7.5	Power outlets on the equipment ..... :	No outlets provided.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Marking adjacent to fuse on PCB as: F1 T1A/250V	**P**
1.7.7	Wiring terminals	See below.	**N/A**
1.7.7.1	Protective earthing and bonding terminals ..... :	Class II equipment.	**N/A**
1.7.7.2	Terminal for a.c. mains supply conductors	For models LTE05W-SX-Z (Z = A, T or blank): Direct plug-in equipments. For models LTE05E-SX: The equipment with appliance inlet, which is intended to use the detachable type power supply cord.	**N/A**
1.7.7.3	Terminals for d.c. mains supply conductors	Connected AC mains only.	**N/A**
1.7.8	Controls and indicators	No switch or safety involved indicator.	**N/A**
1.7.8.1	Identification, location and marking ..... :	No switches and controls.	**N/A**
1.7.8.2	Colours ..... :	No indicators.	**N/A**
1.7.8.3	Symbols according to IEC 60417..... :	No symbols used.	**N/A**
1.7.8.4	Markings using figures ..... :	No figures used.	**N/A**
1.7.9	Isolation of multiple power sources ..... :	Only one main supply.	**N/A**
1.7.10	IT power distribution systems	For Norway compliance has to be evaluated during the national approved.	**N/A**
1.7.11	Thermostats and other regulating devices	No thermostats provided.	**N/A**
1.7.12	Language(s) ..... :	Rating marking is in English and user's manual is in English and German. Versions in other languages will be provided when national certificate approval.	—
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s 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.	**P**
1.7.14	Removable parts	No removable parts provided.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.15	Replaceable batteries	No batteries provided.	**N/A**
	Language(s)..... :		—
1.7.16	Operator access with a tool ..... :	No operator accessible area which needs to be accessed by the use of a tool.	**N/A**
1.7.17	Equipment for restricted access locations ..... :	Same as above.	**N/A**

2	PROTECTION FROM HAZARDS		**P**
2.1	Protection from electric shock and energy hazards		**P**
2.1.1	Protection in operator access areas	See below.	**P**
2.1.1.1	Access to energized parts	No access with test finger and test pin to any parts with only basic insulation to ELV or hazardous voltage. Any hazardous parts accessible are unlikely.	**P**
	Test by inspection ..... :	Same as above.	**P**
	Test with test finger ..... :	Same as above.	**P**
	Test with test pin ..... :	Same as above.	**P**
	Test with test probe ..... :	No TNV.	**N/A**
2.1.1.2	Battery compartments ..... :	No battery compartment.	**N/A**
2.1.1.3	Access to ELV wiring	No ELV wiring in operator access area.	**N/A**
	Working voltage (Vpeak or Vrms); minimum distance (mm) through insulation	Same as above.	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	**N/A**
2.1.1.5	Energy hazards .....:	Energy does not exceed 240VA between any two points in accessible parts (o/p connector of secondary circuit). Results see appended table 2.1.1.5.	**P**
2.1.1.6	Manual controls	No manual controls provided.	**N/A**
2.1.1.7	Discharge of capacitors in equipment	No X-capacitors in the primary circuit.	**N/A**
	Time-constant (s); measured voltage (V) ..... :		—
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	**N/A**
2.1.3	Protection in restricted access locations	The unit is not limited to be used in restricted access locations.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.2	SELV circuits		**P**
2.2.1	General requirements	See below.	**P**
2.2.2	Voltages under normal conditions (V)..... :	Between any conductor of the SELV circuits 42.4V peak or 60Vd.c. are not exceeded. Under normal operation, results see appended table 2.2.2.	**P**
2.2.3	Voltages under fault conditions (V)..... :	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120Vd.c. were not exceed and SELV limits not for longer than 0.2 seconds. Results see appended table 2.2.3.	**P**
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	Double or reinforced for the highest working voltage across a particular insulation is provided.	**P**
2.2.3.2	Separation by earthed screen (method 2)	Not used.	**N/A**
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	Not used.	**N/A**
2.2.4	Connection of SELV circuits to other circuits..... :	See 1.5.7, 2.2.2, 2.2.3 and 2.4.3.	**P**

2.3	TNV circuits		**N/A**
2.3.1	Limits		**N/A**
	Type of TNV circuits..... :		—
2.3.2	Separation from other circuits and from accessible parts		**N/A**
	Insulation employed ..... :		—
2.3.3	Separation from hazardous voltages		**N/A**
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		**N/A**
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		**N/A**

2.4	Limited current circuits *The output connector is accessible to the user and connected to the primary circuit by one bridging capacitor (CY3). Therefore, the output circuit was designed as limited current circuit.*		**P**
2.4.1	General requirements	See below.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.4.2	Limit values	0.7mA	**P**
	Frequency (Hz) ..... :	Test was performed using instruments of annex D instead of the non-inductive resistor of 2000 Ω.	—
	Measured current (mA)..... :	See appended table 2.4.2.	—
	Measured voltage (V)..... :	Test was performed using instruments of annex D.1	—
	Measured capacitance (μF) ..... :	Test was performed using instruments of annex D.1	—
2.4.3	Connection of limited current circuits to other circuits	Complies.	**P**

2.5	Limited power sources		**P**
	Inherently limited output		**N/A**
	Impedance limited output		**N/A**
	Overcurrent protective device limited output		**N/A**
	Regulating network limited output under normal operating and single fault condition	Results see appended table 2.5.	**P**
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		**N/A**
	Output voltage (V), output current (A), apparent power (VA) ..... :	Results see appended table 2.5.	—
	Current rating of overcurrent protective device (A)		—

2.6	Provisions for earthing and bonding		**N/A**
2.6.1	Protective earthing	Class II equipment.	**N/A**
2.6.2	Functional earthing		**N/A**
2.6.3	Protective earthing and protective bonding conductors		**N/A**
2.6.3.1	General		**N/A**
2.6.3.2	Size of protective earthing conductors		**N/A**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		**N/A**
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A) ..... :		**N/A**
2.6.3.5	Colour of insulation ..... :		**N/A**
2.6.4	Terminals		**N/A**
2.6.4.1	General		**N/A**
2.6.4.2	Protective earthing and bonding terminals		**N/A**
	Rated current (A), type and nominal thread diameter (mm) ..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		**N/A**
2.6.5	Integrity of protective earthing		**N/A**
2.6.5.1	Interconnection of equipment		**N/A**
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		**N/A**
2.6.5.3	Disconnection of protective earth		**N/A**
2.6.5.4	Parts that can be removed by an operator		**N/A**
2.6.5.5	Parts removed during servicing		**N/A**
2.6.5.6	Corrosion resistance		**N/A**
2.6.5.7	Screws for protective bonding		**N/A**
2.6.5.8	Reliance on telecommunication network or cable distribution system		**N/A**

2.7	Overcurrent and earth fault protection in primary circuits		**P**
2.7.1	Basic requirements	Equipment relies on 16 A (20 A for North America) rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short-circuit. Over current protection is provided by the built-in fuse.	**P**
	Instructions when protection relies on building installation	Applicable for pluggable equipment type A.	**N/A**
2.7.2	Faults not covered in 5.3	The protection device is well dimensioned and mounted.	**P**
2.7.3	Short-circuit backup protection	Pluggable equipment type A, the building installation is considered as providing short circuit backup protection.	**P**
2.7.4	Number and location of protective devices ..... :	Over current protection by one built-in fuse.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.5	Protection by several devices	One fuse only.	**N/A**
2.7.6	Warning to service personnel ..... :	No service work necessary.	**N/A**

2.8	Safety interlocks *No safety interlock.*		**N/A**
2.8.1	General principles		**N/A**
2.8.2	Protection requirements		**N/A**
2.8.3	Inadvertent reactivation		**N/A**
2.8.4	Fail-safe operation		**N/A**
2.8.5	Moving parts		**N/A**
2.8.6	Overriding		**N/A**
2.8.7	Switches and relays		**N/A**
2.8.7.1	Contact gaps (mm) ..... :		**N/A**
2.8.7.2	Overload test		**N/A**
2.8.7.3	Endurance test		**N/A**
2.8.7.4	Electric strength test		**N/A**
2.8.8	Mechanical actuators		**N/A**

2.9	Electrical insulation		**P**
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	**P**
2.9.2	Humidity conditioning	See below.	**P**
	Humidity (%) ..... :	95% R.H. for 120 h.	—
	Temperature (°C) ..... :	40	—
2.9.3	Grade of insulation	The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard.	**P**

2.10	Clearances, creepage distances and distances through insulation		**P**
2.10.1	General	See 2.10.3, 2.10.4 and 2.10.5.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.2	Determination of working voltage	• Unit was connected to a 240V TN power system. • 2.10.10 not applied for. Results see appended table 2.10.2.	**P**
2.10.3	Clearances	See below.	**P**
2.10.3.1	General	Considered.	**P**
2.10.3.2	Clearances in primary circuits	See appended table 2.10.3 and 2.10.4.	**P**
2.10.3.3	Clearances in secondary circuits	See 5.3.4.	**N/A**
2.10.3.4	Measurement of transient voltage levels	No transient voltage across the clearance lower than due or normal.	**N/A**
2.10.4	Creepage distances	See appended table 2.10.3 and 2.10.4.	**P**
	CTI tests ..... :	CTI rating for all materials of minimum 100.	—
2.10.5	Solid insulation	See below.	**P**
2.10.5.1	Minimum distance through insulation	Photo couplers, mylar sheet and enclosure provide distance through insulation of 0.4 mm minimum. Details see appended table 2.10.5.	**P**
2.10.5.2	Thin sheet material	Insulation tapes provided as follows: 1) around the Bulk Capacitor (C5) (reinforced insulation) 2) around the core of transformer (T1) (reinforced insulation)	**P**
	Number of layers (pcs) ..... :	2 layers.	—
	Electric strength test	See appended table 5.2.	—
2.10.5.3	Printed boards	Not applied for.	**N/A**
	Distance through insulation	Not applied for.	**N/A**
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs) ..... :		**N/A**
2.10.5.4	Wound components	Triple insulated wire used in T1 (see appended table Annex U).	**P**
	Number of layers (pcs) ..... :	3 layers	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Two wires in contact inside wound component; angle between 45° and 90° ..... :	Physical separation provided by teflon tube to relieve mechanical stress at the crossover point.	**P**
2.10.6	Coated printed boards	No coated printed boards.	**N/A**
2.10.6.1	General		**N/A**
2.10.6.2	Sample preparation and preliminary inspection		**N/A**
2.10.6.3	Thermal cycling		**N/A**
2.10.6.4	Thermal ageing (°C) ..... :		**N/A**
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test		**N/A**
	Electric strength test		—
2.10.7	Enclosed and sealed parts..... :	No hermetically sealed component.	**N/A**
	Temperature $T_1=T_2 + T_{ma} – T_{amb}$ +10K (°C)..... :		**N/A**
2.10.8	Spacings filled by insulating compound ..... :	Certified sources of photo couplers used. No other components applied for.	**P**
	Electric strength test	See above.	—
2.10.9	Component external terminations	See appended table 2.10.3 and 2.10.4.	**P**
2.10.10	Insulation with varying dimensions	No reduction of distances considered.	**N/A**

3	WIRING, CONNECTIONS AND SUPPLY		**P**
3.1	General		**P**
3.1.1	Current rating and overcurrent protection	Secondary output cable is UL recognized wiring which is PVC insulated, rated VW-1, min. 80 °C, 300V, 20AWG X 2C. Internal wiring is PVC insulated, the wiring gauge is suitable for current intended to be carried.	**P**
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges, which could damage the insulation and cause hazard.	**P**
3.1.3	Securing of internal wiring	The wires are secured by soldering. Additionally glue was provided so that a loosening of the terminal connection is unlikely.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	**P**
3.1.5	Beads and ceramic insulators	Not used.	**N/A**
3.1.6	Screws for electrical contact pressure	No such screws provided.	**N/A**
3.1.7	Insulating materials in electrical connections	All current carrying is metal to metal.	**P**
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used.	**N/A**
3.1.9	Termination of conductors	All conductors are reliable secured.	**P**
	10 N pull test	Complied.	**P**
3.1.10	Sleeving on wiring	No sleeving used to provide supplementary insulation.	**N/A**

3.2	Connection to an a.c. mains supply or a d.c. mains supply		**P**
3.2.1	Means of connection ..... :	For models LTE05W-SX-Z (Z = A, T or blank): The adaptor provided with a mains plug which is integral with the adaptor. For models LTE05E-SX: Appliance inlet.	**P**
3.2.1.1	Connection to an a.c. mains supply	See above.	**P**
3.2.1.2	Connection to a d.c. mains supply		**N/A**
3.2.2	Multiple supply connections	Only one mains connection.	**N/A**
3.2.3	Permanently connected equipment	Unit is not a permanently connected equipment.	**N/A**
	Number of conductors, diameter (mm) of cable and conduits ..... :		—
3.2.4	Appliance inlets	For models LTE05E-SX: The appliance inlet complies with IEC 60320-1. The connector of the power cord can be inserted without difficulties and does not support the unit.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.5	Power supply cords	For models LTE05W-SX-Z (Z = A, T or blank): Direct plug-in equipment. For models LTE05E-SX: The power supply cord is not provided with this unit. Selection of suitable power cord (0.75 mm^2) is mentioned in safety instruction.	**N/A**
3.2.5.1	AC power supply cords	See above.	**N/A**
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		**N/A**
3.2.6	Cord anchorages and strain relief		**N/A**
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		**N/A**
3.2.8	Cord guards		**N/A**
	D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		**N/A**

3.3	Wiring terminals for connection of external conductors		**N/A**
3.3.1	Wiring terminals		**N/A**
3.3.2	Connection of non-detachable power supply cords		**N/A**
3.3.3	Screw terminals		**N/A**
3.3.4	Conductor sizes to be connected		**N/A**
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		—
3.3.5	Wiring terminal sizes		**N/A**
	Rated current (A), type and nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminals design		**N/A**
3.3.7	Grouping of wiring terminals		**N/A**
3.3.8	Stranded wire		**N/A**

3.4	Disconnection from the mains supply	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.1	General requirement	See below.	**P**
3.4.2	Disconnect devices	1) For models LTE05W-SX-Z (Z = A, T or blank): plug (integral part). 2) For models model LTE05E-SX: Appliance inlet.	**P**
3.4.3	Permanently connected equipment	Not a permanently connected equipment.	**N/A**
3.4.4	Parts which remain energized	When plug or inlet is disconnected no remaining parts with hazardous voltage in the equipment.	**P**
3.4.5	Switches in flexible cords	No switch on flexible cord.	**N/A**
3.4.6	Single-phase equipment and d.c. equipment	The plug or inlet disconnects both poles simultaneously.	**P**
3.4.7	Three-phase equipment	Single phase.	**N/A**
3.4.8	Switches as disconnect devices		**N/A**
3.4.9	Plugs as disconnect devices	The safety instructions require that the socket-outlet shall be installed at an easily accessible location.	**P**
3.4.10	Interconnected equipment	Interconnection to other devices via secondary output only.	**N/A**
3.4.11	Multiple power sources	Only one supply connection provided.	**N/A**

3.5	Interconnection of equipment		**P**
3.5.1	General requirements	See below.	**P**
3.5.2	Types of interconnection circuits..... :	Interconnection circuits of SELV and LCC through sec connector.	**P**
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	**N/A**

4	PHYSICAL REQUIREMENTS		**P**
4.1	Stability *For model LTE05E-SX only, others models are not applied for.*		**P**
	Angle of 10°	No overbalancing due to equipment design (length and width exceed the height by far).	**P**
	Test: force (N)..... :		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.2	Mechanical strength		**P**
4.2.1	General	See below. After tests, unit complies with the requirements of sub-clauses 2.1.1 and 2.10.	**P**
4.2.2	Steady force test, 10 N	Applied to parts other than serving for enclosure.	**P**
4.2.3	Steady force test, 30 N	No internal enclosure.	**N/A**
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure for surface of enclosure. No energy or other hazards. Force applied at various locations of: - top enclosure - bottom enclosure - side enclosure	**P**
4.2.5	Impact test	See below.	**P**
	Fall test	No hazard as result from steel ball fall test at various locations of: - top enclosure - bottom enclosure - side enclosure	**P**
	Swing test	No hazard as result from steel ball fall test at various locations of: - top enclosure - bottom enclosure - side enclosure	**P**
4.2.6	Drop test	The adapter has been subjected to 3 drops from 1 m height on a hard wooden surface.	**P**
4.2.7	Stress relief test	After the test at temperature of 75°C, no shrinkage, distortion or loosening of any enclosure part was noticeable on the equipment for all types enclosure material.	**P**
4.2.8	Cathode ray tubes	No CRT provided.	**N/A**
	Picture tube separately certified..... :	See above.	**N/A**
4.2.9	High pressure lamps	No high pressure lamps provided.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N) ... :	Not wall or ceiling mounted equipment.	**N/A**

4.3	Design and construction		**P**
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	**P**
4.3.2	Handles and manual controls; force (N) ..... :	No handles or controls provided.	**N/A**
4.3.3	Adjustable controls	Full range voltage design, no controls provided.	**N/A**
4.3.4	Securing of parts	Mechanical fixings in such a way designed that they will withstand mechanical stress occurring in normal use.	**P**
4.3.5	Connection of plugs and sockets	No mismatch of connectors, plugs or sockets possible.	**P**
4.3.6	Direct plug-in equipment	See below.	**P**
	Dimensions (mm) of mains plug for direct plug-in ..... :	▪ For models LTE05W-SX-T: The dimension of the injection part is in accordance with the requirement of EN 50075 standard. ▪ For models LTE05W-SX-: The dimension of the injection part is in accordance with the requirement of NEMA 1-15P non-polarity type. ▪ For models LTE05W-SX-A: The dimension of the injection part is in accordance with the requirement of clause 4.3.18 of AS/NZS 3260:1993 and 2.8.1, 2.8.4 and 2.14.16 of AS/NZS 3112:1993, however, for ohers test shall be evaluated when submitted for National approval.	**P**
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) ..... :	Less than 0.2Nm.	**P**
4.3.7	Heating elements in earthed equipment	No heating elements provided.	**N/A**
4.3.8	Batteries	No batteries provided.	**N/A**
4.3.9	Oil and grease	No oil or grease provided.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	**N/A**
4.3.11	Containers for liquids or gases	No container for liquids or gases provided.	**N/A**
4.3.12	Flammable liquids ..... :	No flammable liquids provided.	**N/A**
	Quantity of liquid (l) ..... :		**N/A**
	Flash point (°C) ..... :		**N/A**
4.3.13	Radiation; type of radiation ..... :	No ionising radiation, ultraviolet light, laser, LED or flammable gases used.	**N/A**
4.3.13.1	General		**N/A**
4.3.13.2	Ionizing radiation		**N/A**
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		**N/A**
	Part, property, retention after test, flammability classification ..... :		**N/A**
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :		**N/A**
4.3.13.5	Laser (including LEDs)		**N/A**
	Laser class ..... :		—
4.3.13.6	Other types ..... :		**N/A**

4.4	Protection against hazardous moving parts *No hazardous moving parts.*		**N/A**
4.4.1	General		**N/A**
4.4.2	Protection in operator access areas		**N/A**
4.4.3	Protection in restricted access locations		**N/A**
4.4.4	Protection in service access areas		**N/A**

4.5	Thermal requirements		**P**
4.5.1	Maximum temperatures	See appended table 4.5.1.	**P**
	Normal load condition per Annex L..... :	Rated load with continuous operation.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.5.2	Resistance to abnormal heat	Phenolic bobbin material used in T1, which is acceptable without test. For others, see appended table 4.5.2.	**P**

4.6	Openings in enclosures		**P**
4.6.1	Top and side openings	No openings on the top and sides.	**P**
	Dimensions (mm) ..... :		—
4.6.2	Bottoms of fire enclosures	No any openings.	**P**
	Construction of the bottom..... :		—
4.6.3	Doors or covers in fire enclosures	No doors or covers provided.	**N/A**
4.6.4	Openings in transportable equipment	No openings on whole enclosure.	**P**
4.6.5	Adhesives for constructional purposes		**N/A**
	Conditioning temperature (°C)/time (weeks)..... :		—

4.7	Resistance to fire		**P**
4.7.1	Reducing the risk of ignition and spread of flame	Use of fire enclosure materials with the required flammability V-0.	**P**
	Method 1, selection and application of components wiring and materials	See above.	**P**
	Method 2, application of all of simulated fault condition tests		**N/A**
4.7.2	Conditions for a fire enclosure	See below.	**P**
4.7.2.1	Parts requiring a fire enclosure	With having the following parts: ▪ components in primary ▪ components having unenclosed arcing parts at hazardous voltage or energy level ▪ insulated wiring The fire enclosure is required.	**P**
4.7.2.2	Parts not requiring a fire enclosure	See 4.7.2.1.	**N/A**
4.7.3	Materials		**P**
4.7.3.1	General	PCB rated V-0.	**P**
4.7.3.2	Materials for fire enclosures	Enclosure material rated V-0.	**P**
4.7.3.3	Materials for components and other parts outside fire enclosures	See sub-clause 4.7.2.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2 or better.	**P**
4.7.3.5	Materials for air filter assemblies	No air filter assemblies.	**N/A**
4.7.3.6	Materials used in high-voltage components	No high voltage component.	**N/A**

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		**P**
5.1	Touch current and protective conductor current		**P**
5.1.1	General	See sub-clauses 5.1.2 to 5.1.6.	**P**
5.1.2	Equipment under test (EUT)	EUT has only one mains connection.	**P**
5.1.3	Test circuit	Equipment of figure 5A used.	**P**
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	**P**
5.1.5	Test procedure	The touch current was measured from mains to DC output connector and to a 10 cm × 20 cm metal foil wrapped on accessible non-conductive parts (plastic enclosure).	**P**
5.1.6	Test measurements	See appended table 5.1.6.	**P**
	Test voltage (V) .....:	See appended table 5.1.6.	—
	Measured touch current (mA) .....:	See appended table 5.1.6.	—
	Max. allowed touch current (mA) .....:	See appended table 5.1.6.	—
	Measured protective conductor current (mA) ....:		—
	Max. allowed protective conductor current (mA) :		—
5.1.7	Equipment with touch current exceeding 3.5 mA .....:	Neither stationary permanently connected equipment nor stationary pluggable equipment type B.	**N/A**
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	No TNV.	**N/A**
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		**N/A**
	Test voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks .....:	No TNV.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.2	Electric strength		**P**
5.2.1	General	See appended table 5.2.	**P**
5.2.2	Test procedure	See appended table 5.2.	**P**
5.3	Abnormal operating and fault conditions		**P**
5.3.1	Protection against overload and abnormal operation	See below.	**P**
5.3.2	Motors	No motors.	**N/A**
5.3.3	Transformers	With the shorted o/p of the transformer, no high temperature of the transformer was recorded. Results of the short-circuit tests see appended table 5.3 and Annex C.	**P**
5.3.4	Functional insulation ..... :	By short-circuited, test results see appended table 5.3.	**P**
5.3.5	Electromechanical components	No electromechanical component other then motor provided.	**N/A**
5.3.6	Simulation of faults	Results see appended table.	**P**
5.3.7	Unattended equipment	None of them are used.	**N/A**
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire burns the equipment. No molten metal was emitted. Electric strength test primary to SELV and primary to external enclosure were passed.	**P**
6	CONNECTION TO TELECOMMUNICATION NETWORKS		**N/A**
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		**N/A**
6.1.1	Protection from hazardous voltages		**N/A**
6.1.2	Separation of the telecommunication network from earth		**N/A**
6.1.2.1	Requirements		**N/A**
	Test voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :		**N/A**
6.2	Protection of equipment users from overvoltages on telecommunication networks		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.2.1	Separation requirements		**N/A**
6.2.2	Electric strength test procedure		**N/A**
6.2.2.1	Impulse test		**N/A**
6.2.2.2	Steady-state test		**N/A**
6.2.2.3	Compliance criteria		**N/A**

6.3	Protection of the telecommunication wiring system from overheating		**N/A**
	Max. output current (A) ..... :		—
	Current limiting method..... :		—

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

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		**P**
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		**N/A**
A.1.1	Samples ..... :		—
	Wall thickness (mm) ..... :		—
A.1.2	Conditioning of samples; temperature (°C)..... :		**N/A**
A.1.3	Mounting of samples..... :		**N/A**
A.1.4	Test flame (see IEC 60695-11-3)		**N/A**
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		**N/A**
A.1.6	Compliance criteria		**N/A**
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		**P**
A.2.1	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
A.2.2	Conditioning of samples		**N/A**
A.2.3	Mounting of samples ..... :		**N/A**
A.2.4	Test flame (see IEC 60695-11-4)		**N/A**
	Flame A, B or C ..... :		—
A.2.5	Test procedure		**N/A**
A.2.6	Compliance criteria		**N/A**
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4 and 8		**N/A**
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		**N/A**
A.3.1	Mounting of samples		**N/A**
A.3.2	Test procedure		**N/A**
A.3.3	Compliance criterion		**N/A**

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		**N/A**
B.1	General requirements		**N/A**
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		**N/A**
B.3	Maximum temperatures		**N/A**
B.4	Running overload test		**N/A**
B.5	Locked-rotor overload test		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		**N/A**
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		**N/A**
B.7.1	Test procedure		**N/A**
B.7.2	Alternative test procedure; test time (h)..... :		**N/A**
B.7.3	Electric strength test		**N/A**
B.8	Test for motors with capacitors		**N/A**
B.9	Test for three-phase motors		**N/A**
B.10	Test for series motors		**N/A**
	Operating voltage (V) ..... :		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		**P**
	Position ..... :	T1	—
	Manufacturer ..... :	See appended table 1.5.1.	—
	Type ..... :	See appended table 1.5.1.	—
	Rated values ..... :	Class B	—
	Method of protection ..... :	Protection by inherent or external impedance.	—
C.1	Overload test	See appended table 5.3.	**P**
C.2	Insulation	See appended table C.2.	**P**
	Protection from displacement of windings ..... :	See appended table C.2.	**P**

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		**P**
D.1	Measuring instrument	Figure D.1 used.	**P**
D.2	Alternative measuring instrument		**N/A**

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)	**N/A**

F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)	**P**

G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
G.1	Summary of the procedure for determining minimum clearances		**N/A**
G.2	Determination of mains transient voltage (V)..... :		**N/A**
G.2.1	AC mains supply		**N/A**
G.2.2	DC mains supply		**N/A**
G.3	Determination of telecommunication network transient voltage (V)..... :		**N/A**
G.4	Determination of required withstand voltage (V). :		**N/A**
G.5	Measurement of transient levels (V) ..... :		**N/A**
G.6	Determination of minimum clearances ..... :		**N/A**

H	ANNEX H, IONIZING RADIATION (see 4.3.13)	**N/A**

J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		**N/A**
	Metal used ..... :		—

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

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)		**P**
L.1	Typewriters		**N/A**
L.2	Adding machines and cash registers		**N/A**
L.3	Erasers		**N/A**
L.4	Pencil sharpeners		**N/A**
L.5	Duplicators and copy machines		**N/A**
L.6	Motor-operated files		**N/A**
L.7	Other business equipment	Continuous operation at rated output load.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		**N/A**
M.1	Introduction		**N/A**
M.2	Method A		**N/A**
M.3	Method B		**N/A**
M.3.1	Ringing signal		**N/A**
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		**N/A**
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		**N/A**
M.3.2.2	Tripping device		**N/A**
M.3.2.3	Monitoring voltage (V)..... :		**N/A**
N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		**N/A**
N.1	ITU-T impulse test generators		**N/A**
N.2	IEC 60065 impulse test generator		**N/A**
P	ANNEX P, NORMATIVE REFERENCES		**P**
Q	ANNEX Q, BIBLIOGRAPHY		**P**
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		**N/A**
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		**N/A**
R.2	Reduced clearances (see 2.10.3)		**N/A**
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		**N/A**
S.1	Test equipment		**N/A**
S.2	Test procedure		**N/A**
S.3	Examples of waveforms during impulse testing		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		**N/A**
			—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		**P**
		Certified triple insulation wire used.	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		**P**
V.1	Introduction	See below.	**P**
V.2	TN power distribution systems	TN power considered.	**P**
V.3	TT power systems		**N/A**
V.4	IT power systems	IT power considered.	**P**

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		**N/A**
W.1	Touch current from electronic circuits		**N/A**
W.1.2	Earthed circuits		**N/A**
W.2	Interconnection of several equipments		**N/A**
W.2.1	Isolation		**N/A**
W.2.2	Common return, isolated from earth		**N/A**
W.2.3	Common return, connected to protective earth		**N/A**

X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSRORMER TESTS (see clause C.1)		**N/A**
X.1	Determination of maximum input current		**N/A**
X.2	Overload test procedure		**N/A**

Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		**N/A**
Y.1	Test apparatus ..... :		**N/A**
Y.2	Mounting of test samples ..... :		**N/A**
Y.3	Carbon-arc light-exposure apparatus ..... :		**N/A**
Y.4	Xenon-arc light exposure apparatus ..... :		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001, Annex ZB and Annex ZC)			**P**
General	C: Delete all the "country" notes in the reference document according to the following list: 1.1.5 Note 2, 1.5.8 Note 2, 1.6.1 Note 1.7.2 Note 4, 1.7.12 Note 2, 2.6 Note 2.2.3 Note, 2.2.4 Note, 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2, 2.3.4 Note 2,3, 2.7.1 Note 2.10.3.1 Note 4, 3.2.1.1 Note, 3.2.3 Note 1, 2 3.2.5.1 Note 2, 4.3.6 Note 1,2, 4.7.2.2 Note 4.7.3.1 Note 2, 6.1.2.1 Note, 6.1.2.2 Note 6.2.2 Note, 6.2.2.1 Note 2, 6.2.2.2 Note 7 Note 4, 7.1 Note G2.1 Note 1, 2, Annex H Note 2	Deleted.	**P**
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	Class II equipment.	**N/A**
1.5.1	A (SE, Ordinance 1990:944 and CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	Not such switch.	**N/A**
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Complied.	**P**
1.7.2	S (FI, NO, SE): CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:	Class II equipment.	**N/A**
	FI: “Laite on liitettävä suojamaadoitus-koskettimilla varustettuun pistorasiaan”		**N/A**
	NO: “Apparatet må tilkoples jordet stikkontakt”		**N/A**
	SE: “Apparaten skall anslutas till jordat uttag”		**N/A**
	A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes		**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	en klemme mærket  eller  If essential for the safety of the equipment, 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 instalationsvejledning."		
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. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	No socket-outlets.	**N/A**
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	No socket-outlets.	**N/A**
1.7.12	A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheits-gesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10th January 1996, article 2, 4th paragraph item 2): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	German version of user's manual provided.	**P**
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	No batteries.	**N/A**
	A (DE, Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 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 1) the local dose rate at a distance of 0,1 m from	This national difference was deleted by A11 of EN 60950-1.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. d) Furthermore, a licence in accordance with Cl. 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 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are ade-quately screened by the intrinsically safe CRT.		
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	No TNV circuit.	**N/A**
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	No TNV circuit.	**N/A**
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	No TNV circuit.	**N/A**
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.	Class II equipment.	**N/A**
2.7.1	C: Replace the subclause as follows: *Basic requirements* To protect against excessive current, short-	Replaced.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	Complied.	**P**
2.7.2	C: Void.	Declared.	**N/A**
2.10.2	C: Replace in the first line “(see also 1.4.7)” by “(see also 1.4.8)”.	Replaced.	**P**
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	Considered.	**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.1.1	S (CH): Supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A SEV 6534-2.1991, Plug type 12, L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998, Plug type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A	No power cord provide for this country.	**N/A**
	S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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. If ply-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	Same as above.	**N/A**
	S (ES): Supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Same as above.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	S (GB): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Socket etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Same as above.	**N/A**
	S (IE): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	Same as above.	**N/A**
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	Deleted.	**N/A**
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 0,75[1)] Over 6 up to and including 10 (0,75)[2)] 1,0 Over 10 up to and including 16 (1,0)[3)] 1,5 In the Conditions applicable to Table 3B delete the words "in some countries" in condition [1)]. In Note 1, applicable to Table 3B, delete the second sentence.	Replaced.	**N/A**
3.2.5.1	S (GB): A power supply cord with conductor of 1,25 mm^2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Considered.	**N/A**
3.3.4	C: In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 Delete the fifth line: conductor sizes for 13 to 16 A.	Deleted.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.3.4	S (GB): The range of conductor sizes of flexible cords to be accepted by terminals for equipment with A RATED CURRENT of over 10 A up to and including 13 A is: - 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	Considered.	**N/A**
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 and the plug part OF DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.	Torque test was conducted. Additional compliance with BS 1363: Part 1 shall be evaluated when submitted national approval.	**N/A**
	S (IE): DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		**N/A**
4.3.13.6	C: Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.	Added.	**N/A**
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and	No TNV circuit.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	- is subject to ROUTINGE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.		
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a service person.	No TNV circuit.	**N/A**
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	No cable distribution system.	**N/A**
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	The alternative method is not used.	**N/A**
Annex H	C: Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 μSv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete Note 2.	Replaced.	**N/A**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
Annex P	C: Replace the text of this annex by: See annex ZA.	Replaced.	**P**
Annex Q	C: Replace the title of IEC 61032 by “Protection of persons and equipment by enclosures – Probes for verification”. Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
Annex ZA	C: NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referrd to applies (including amendments). NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies. — IEC 60050-151 — IEC 60050-195 EN 60065:1998 + corr. June 1999 IEC 60065 (mod):1998 EN 60073:1996 IEC 60073:1996 HD 566 S1:1990 IEC 60085:1984 HD 214 S2:1980 IEC 60112:1979 HD 611.4.1.S1:1992 IEC 60216-4-1:1990 HD 21 [1)] Series IEC 60227 (mod) Series HD 22 [2)] Series IEC 60245 (mod) Series EN 60309 Series IEC 60309 Series EN 60317-43:1997 IEC 60317-43:1997 EN 60320 Series IEC 60320 (mod) Series HD 384.3 S2:1995 IEC 60364-3 (mod):1993 HD 384.4.41 S2:1996 IEC 60364-4-41 (mod):1992 [3)] EN 132400:1994 [4)] IEC 60384-14:1993 + A2:1998 + A3:1998 + A4:2001 EN 60417-1 IEC 60417-1 HD 625.1 S1:1996 + corr. Nov. 1996 IEC 60664-1 (mod):1992 EN 60695-2-2:1994 IEC 60695-2-2:1991 EN 60695-2-11:2001 IEC 60695-2-11:2000 — IEC 60695-2-20:1995 — IEC 60695-10-2:1995 — IEC 60695-11-3:2000 — IEC 60695-11-4:2000 EN 60695-11-10:1999 IEC 60695-11-10:1999 EN 60695-11-20:1999 IEC 60695-11-20:1999 EN 60730-1:2000 IEC 60730-1:1999 (mod) EN 60825-1:1994 + corr. Febr. 1995 + IEC 60825-1:1993 A11:1996 + corr. July 1997 EN 60825-2:2000 IEC 60825-2:2000 — IEC 60825-9:1999 EN 60851-3:1996 IEC 60851-3:1996 EN 60851-5:1996 IEC 60825-5:1996 EN 60851-6:1996 IEC 60851-6:1996 — IEC 60885-1:1987 EN 60990:1999 IEC 60990:1999 — IEC 61058-1:2000 EN 61965:2001 IEC 61965:2000 EN ISO 178:1996 ISO 178:1993 EN ISO 179 Series ISO 179 Series EN ISO 180:2000 ISO 180:1993		**P**

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	— ISO 261:1998 — ISO 262:1998 EN ISO 527 Series ISO 527 Series — ISO 386:1984 EN ISO 4892 Series ISO 4892 Series — ISO 7000:1989 EN ISO 8256:1996 ISO 8256:1990 — ISO 9772:1994 EN ISO 9773:1998 ISO 9773:1998 — ITU-T:1988 Recommendation K.17 — ITU-T:2000 Recommendation K.21 1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

1.5.1	TABLE: list of critical components				P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity [1.]
Enclosure	Nan Ya Plastics Corp Plastics 4th Div	5712	V-0, min. 1.74 mm thick, 85°C	UL 94	UL
Plug pin holder material (for model LTE05W-SX-Z only)	Nan Ya Plastics (Hui Zhou) Corp Ltd	1410G6	V-0, 75 °C, thickness 2.93 mm	UL 94	UL
Appliance Inlet (for models LTE05E-SX only)	Rong Feng	RF-180	2.5A, 250V	IEC/EN 60320-1	VDE, UL
	Tecx-Unions Technology Corporation	SO-222	2.5A, 250V	IEC/EN 60320-1	VDE, UL
PCB	Various	Various	V-0 or better, min. 105°C	UL 94	UL
Fuse (F1)	Conquer Electronics Co Ltd	PDU	T1A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE, UL
	Conquer Electronics Co Ltd	PTU	T1A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE, UL
	Hollyland Co Ltd	32S	T1A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE, UL
	Littelfuse Inc	673	T1A, 250Vac	UL 248	UL
	Littelfuse Inc	677	T1A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE, UL
Inductor (L1)	Li Tone Electronics Co Ltd	E03-4501-00J00	130°C	--	--
Bridge Diodes (BR1)	Various	Various	Min. 600V, min. 1A	--	--
Ripple Capacitor (C5)	Various	Electrolytic can type	10 μF, min. 400V, min. 105°C	--	--
Transistor (Q1)	Various	Various	Min. 600V, min. 2A	--	--
Bridging Capacitor (CY3) (Y1 type) (Optional)	TDK Corp	CD	max. 1000pF, min. 250Vac, 125°C	IEC 60384-14 / 1993	VDE, S, FI, UL, CSA

	Murata Mfg Co Ltd	KX	max. 1000pF, min. 250Vac, 125°C	IEC 60384-14 / 1993	VDE, S, FI, UL, CSA
	Pan Overseas Electronic Co Ltd	AH	max. 1000pF, min. 250Vac, 125°C	IEC 60384-14 / 1993	VDE, S, FI, UL, CSA
Photo Coupler (U2)	Cosmo Electronics Corp.	KPC817	di = 0.5mm, int. dcr = 5.3mm, ext. dcr = 8.0mm	DIN IEC/EN 60747-5-2:2003 IEC 60950	VDE, CSA, UL
	Cosmo Electronics Corp.	K1010	di = 0.5mm, int. dcr = 5.3mm, ext. dcr = 8.0mm	DIN IEC/EN 60747-5-2:2003 IEC 60950	VDE, CSA, UL
	Lite-On Technology Corp	LTV-817	di = 0.8mm, int. dcr = 5.2mm, ext. dcr = 7.8mm	DIN IEC/EN 60747-5-2:2003 IEC 60950	UL, VDE
	Sharp Corp Electronic Components Group	PC123	di = 0.7mm, int. dcr = 5.0mm, ext. dcr = 8.0mm	DIN IEC/EN 60747-5-2:2003 IEC 60950	UL, VDE, S, FI
Current sense Resistor (R4)	--	--	2Ω, min. 1/4W	--	--
Mylar Sheet (between T1 and secondary components)	--	--	V-2 or better, thickness, 0.4 mm min.	UL 94	UL
Transformer (T1) for model LTE05W-SX-Z; LTE05E-SX (X = 0)	Li Tone Electronics Co Ltd	E04-2682-01100	Class B	Applicable parts in IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
For model LTE05W-SX-Z; LTE05E-SX (X = 1)	Li Tone Electronics Co Ltd	E04-2502-01100	Class B	Applicable parts in IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
For model LTE05W-SX-Z; LTE05E-SX (X = Y)	Li Tone Electronics Co Ltd	E04-2522-01100	Class B	Applicable parts in IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
For model LTE05W-SX-Z; LTE05E-SX (X = 2)	Li Tone Electronics Co Ltd	E04-2432-01100	Class B	Applicable parts in IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
For model	Li Tone	E04-2542-01100	Class B	Applicable parts	Accepted by

LTE05W-SX-Z; LTE05E-SX (X = 3)	Electronics Co Ltd			in IEC 60950-1 and according to IEC 60085	TÜV Rheinland
For model LTE05W-SX-Z; LTE05E-SX (X = 4)	Li Tone Electronics Co Ltd	E04-2502-01101	Class B	Applicable parts in IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland
Triple Insulated wire used in T1	Furukawa	TEX-E	130°C	IEC 60950 UL 2353	VDE, UL
Note(s): 1. An asterisk indicates a mark that assures the agreed level of surveillance. 2. Used abbreviations: di=distance through insulation, int. dcr.=internal creepage distance, ext. dcr.=external creepage distance.					

1.6.2	TABLE: electrical data (in normal conditions)					**P**
Fuse #	Irated (A)	U (V/Hz)	P (W)	I (A)	Ifuse (A)	Condition/status
Model: LTE05W-S1-T						
F1	--	90/47	6.65	0.13	0.13	+5V/1A
F1	--	90/63	6.63	0.13	0.13	+5V/1A
F1	1	100/47	6.63	0.12	0.12	+5V/1A
F1	1	100/63	6.62	0.12	0.12	+5V/1A
F1	1	240/47	6.80	0.07	0.07	+5V/1A
F1	1	240/63	6.80	0.08	0.08	+5V/1A
F1	--	264/47	7.00	0.67	0.67	+5V/1A
F1	--	264/63	6.90	0.08	0.08	+5V/1A
Model: LTE05W-S2-T						
F1	--	90/47	7.45	0.14	0.14	+12V/0.5A
F1	--	90/63	7.44	0.15	0.15	+12V/0.5A
F1	1	100/47	7.42	0.13	0.13	+12V/0.5A
F1	1	100/63	7.44	0.14	0.14	+12V/0.5A
F1	1	240/47	7.80	0.09	0.09	+12V/0.5A
F1	1	240/63	7.77	0.09	0.09	+12V/0.5A
F1	--	264/47	8.00	0.08	0.08	+12V/0.5A
F1	--	264/63	8.00	0.09	0.09	+12V/0.5A
Model: LTE05W-S4-T						
F1	--	90/47	7.45	0.14	0.14	+24V/0.2A
F1	--	90/63	7.44	0.15	0.15	+24V/0.2A
F1	1	100/47	7.42	0.13	0.13	+24V/0.2A

F1	1	100/63	7.44	0.14	0.14	+24V/0.2A
F1	1	240/47	7.80	0.09	0.09	+24V/0.2A
F1	1	240/63	7.77	0.09	0.09	+24V/0.2A
F1	--	264/47	8.00	0.08	0.08	+24V/0.2A
F1	--	264/63	8.00	0.09	0.09	+24V/0.2A
Note(s):						

2.1.1.5	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Model: LTE05W-S1-T					
+5	1	5.02	2.16	10	
Model: LTE05W-S2-T					
+12	0.5	11.99	1.45	17.05	
Model: LTE05W-S4-T					
+24	0.2	23.88	0.54	12.85	
Note(s): Input 264Vac, 63Hz					

2.1.1.7	TABLE: discharge test			N/A
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments
Note(s):				

2.2.2	TABLE: Hazardous voltage measurement			P
Transformer	Location	max. Voltage		Voltage Limitation Component
		V peak	V d.c.	
Model: LTE05W-S1-T				
T1	Pin F1 to Pin F2	25	--	--
Model: LTE05W-S2-T				
T1	Pin F1 to Pin F2	40	--	--
Model: LTE05W-S4-T				
T1	Pin F1 to Pin F2	114	--	--
	After D1 to earth	--	24	D1

Model: LTE05W-S0-T				
T1	Pin F1 to Pin F2	16	--	--
Note(s): Test voltage: 240Vac, 63Hz				

2.2.3	TABLE: SEL voltage measurement		**P**
Location	Voltage measured (V)	Comments	
Model: LTE05W-S4-T			
+24V output to Return	0	D1 shorted. The o/p-voltage did not exceed 42.4Vpk.	
Note(s): Test voltage: 264Vac, 63Hz			

2.4.2	TABLE: limited current circuit measurement					**P**
Location	Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments	
CY3 to Earth	--	0.08	--	0.7	CY3 = 1000pF	
Note(s): Unit connected to 264Vac, 63Hz and output measured using instruments of annex D.1						

2.5	TABLE: limited power source measurement		**P**
	Limits	Measured	Verdict
Model: LTE05W-S0-T			
According to Table 2B with the maximum load conditions (Uoc = +3.3V)			
current (in A)	8.0	2.5	Pass
power (in VA)	5×Uoc(16.5)	7.08	Pass
According to Table 2B with U2 Pin 1-2 shorted			
current (in A)	8.0	-- [1)]	Pass
power (in VA)	5×Uoc(16.5)	-- [1)]	Pass
According to Table 2B with U2 Pin 3 opened			
current (in A)	8.0	-- [1)]	Pass
power (in VA)	5×Uoc(16.5)	-- [1)]	Pass
According to Table 2B with R4 shorted			
current (in A)	8.0	-- [2)]	Pass
power (in VA)	5×Uoc(16.5)	-- [2)]	Pass

According to Table 2B with R9 shorted			
current (in A)	8.0	2.5	Pass
power (in VA)	5×Uoc(16.5)	7.08	Pass
According to Table 2B with R65 shorted			
current (in A)	8.0	-- [1)]	Pass
power (in VA)	5×Uoc(16.5)	-- [1)]	Pass
Model: LTE05W-S4-T			
According to Table 2B with the maximum load conditions (Uoc = +23.88V)			
current (in A)	8.0	0.54	Pass
power (in VA)	100	12.85	Pass
According to Table 2B with U2 Pin 1-2 shorted			
current (in A)	8.0	-- [1)]	Pass
power (in VA)	100	-- [1)]	Pass
According to Table 2B with U2 Pin 3 opened			
current (in A)	8.0	-- [1)]	Pass
power (in VA)	100	-- [1)]	Pass
According to Table 2B with R4 shorted			
current (in A)	8.0	-- [2)]	Pass
power (in VA)	100	-- [2)]	Pass
According to Table 2B with R9 shorted			
current (in A)	8.0	0.5	Pass
power (in VA)	100	11.98	Pass
According to Table 2B with R65 shorted			
current (in A)	8.0	-- [1)]	Pass
power (in VA)	100	-- [1)]	Pass
Note: 1.) The unit shutdown. 2.) The unit damaged.			

2.6.3.4	TABLE: ground continue test	**N/A**
Location	Resistance measured (mΩ)	Comments
Note:		

2.10.2	Table: working voltage measurement		P
Location	RMS voltage (V)	Peak voltage (V)	Comments
Model: LTE05W-S0-T			
T1 Pin 1 – Pin F1	192	336	
T1 Pin 1 – Pin F2	191	332	
T1 Pin 3 – Pin F1	194	392	
T1 Pin 3 – Pin F2	193	384	
T1 Pin 4 – Pin F1	198	356	
T1 Pin 4 – Pin F2	197	340	
T1 Pin 5 – Pin F1	234	416	
T1 Pin 5 – Pin F2	**238**	**432**	* Highest Vrms & Vpeak
U2 Pin 3 – Pin 1	198	344	
U2 Pin 3 – Pin 2	198	344	
U2 Pin 4 – Pin 1	192	336	
U2 Pin 4 – Pin 2	187	336	
C3 Primary – Secondary	197	336	
Ti Pin 1 – Output (+)	189	331	
Model: LTE05W-S1-T			
T1 Pin 1 – Pin F1	194	336	
T1 Pin 1 – Pin F2	192	332	
T1 Pin 3 – Pin F1	194	364	
T1 Pin 3 – Pin F2	194	364	
T1 Pin 4 – Pin F1	199	356	
T1 Pin 4 – Pin F2	199	344	
T1 Pin 5 – Pin F1	238	432	
T1 Pin 5 – Pin F2	**243**	**440**	* Highest Vrms & Vpeak
U2 Pin 3 – Pin 1	194	344	
U2 Pin 3 – Pin 2	194	344	
U2 Pin 4 – Pin 1	191	336	
U2 Pin 4 – Pin 2	192	336	
C3 Primary – Secondary	192	332	
Model: LTE05W-S2-T			
T1 Pin 1 – Pin F1	173	316	
T1 Pin 1 – Pin F2	172	304	
T1 Pin 3 – Pin F1	173	312	

T1 Pin 3 – Pin F2	173	348	
T1 Pin 4 – Pin F1	182	344	
T1 Pin 4 – Pin F2	178	312	
T1 Pin 5 – Pin F1	217	388	
T1 Pin 5 – Pin F2	**223**	**392**	* Highest Vrms & Vpeak
U2 Pin 3 – Pin 1	177	312	
U2 Pin 3 – Pin 2	176	308	
U2 Pin 4 – Pin 1	176	312	
U2 Pin 4 – Pin 2	176	308	
C3 Primary – Secondary	171	300	
Model: LTE05W-S4-T			
T1 Pin 1 – Pin F1	208	352	
T1 Pin 1 – Pin F2	202	332	
T1 Pin 3 – Pin F1	204	344	
T1 Pin 3 – Pin F2	204	376	
T1 Pin 4 – Pin F1	216	**440**	* Highest Vpeak
T1 Pin 4 – Pin F2	210	340	
T1 Pin 5 – Pin F1	230	408	
T1 Pin 5 – Pin F2	**253**	432	* Highest Vrms
U2 Pin 3 – Pin 1	219	360	
U2 Pin 3 – Pin 2	218	356	
U2 Pin 4 – Pin 1	217	352	
U2 Pin 4 – Pin 2	216	352	
C3 Primary – Secondary	202	332	
Note: Input voltage: 240V, 60Hz			

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					**P**
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) to secondary components (with 10N)	420	250	4.0	See below	5.0	See below

CY3 primary pin to U2 secondary				5.1		5.1
C5, F1 to accessible surface enclosure				5.0		5.0
Line trace to Neutral trace before fuse	420	250	1.5	6.6	2.5	6.6
Trace between Fuse	420	250	1.5	2.0[6)]	2.5	2.5
Primary trace to secondary trace	420	250	4.0	See below	5.0	See below
Under T1 Pin 1 to output (+)[7), 8)]				5.3		5.6
Under U2				5.6		5.6
Under CY3				6.7		6.7
Under T1	440	253	4.2	6.7	5.2	6.7

Note:

1. Functional insulation shorted, see sub-clause 5.3.4.
2. All internal wires were fixed in position reliable by glue.
3. There are two layers of insulation tape are wrapped around the outer of transformer (T1).
4. Tube components (safety relevant): Body of fuse.
5. There are two layers of insulation tape are wrapped around the C5 near enclosure side.
6. There is one cut slot (1.0mm × 4.5 mm) provide.
7. There is one cut slot (1.0mm × 10.4 mm) provide.
8. There is one of mylar sheet (26mm × 20 mm) between T1 and secondary components (R2, C8, L2) to keep sufficient creepage distance and clearance distance for reinforced insulation request.
9. Glue components (safety relevant): C5 and CY3.
10. For clearance and creepage did not describe above are far larger than limit above.

2.10.5	TABLE: distance through insulation measurements				**P**
Distance through insulation di at/of:		U r.m.s. (V)	Test voltage (V)	Required di (mm)	di (mm)
Photo coupler (reinforced insulation)		240	AC 3000	0.4	1.
Plastic enclosure (reinforced insulation)		240	AC 3000	0.4	1.
Mylar sheet (reinforced insulation)		240	AC 3000	0.4	1.

Note:

1. For details refer to table 1.5.1.

4.5.1	TABLE: maximum temperatures	**P**

	test voltage (V) .....:	a. 90V, 63Hz (Vertical) b. 90V, 63Hz (Horizontal) c. 264V, 63Hz (Vertical) d. 264V, 63Hz (Horizontal)	—
	t1 (°C) .....:	--	—
	t2 (°C) .....:	--	—

Maximum temperature T of part/at:	T (°C)				allowed T_{max} (°C)
Model: LTE05W-S1-T	a.	b.	c.	d.	--
PCB near BR1	58	58	58	58	105
C5 body near T1	60	60	62	62	105
L1 coil	61	62	60	59	105
T1 coil	61	61	64	63	110
T1 core	64	65	70	70	110
U2 body near T1	57	56	58	58	100
CY3 body near T1	52	52	53	52	125
Inside of enclosure near T1	58	58	62	61	--
Surface of enclosure near T1	48	49	52	50	95
Max. ambient temperature Tma (°C): Note: ambient air during test were T_{amb} = 23°C, 23°C, 23°C and 24°C respectively	40	40	40	40	--
Model: LTE05W-S2-T					
PCB near BR1	55	55	56	56	105
C5 body near T1	55	54	56	57	105
L1 coil	62	62	60	59	105
T1 coil	61	61	66	65	110
T1 core	64	64	72	70	110
U2 body near T1	53	52	58	58	100
CY3 body near T1	51	50	55	55	125
Inside of enclosure near T1	58	58	64	62	--
Surface of enclosure near T1	50	50	52	50	95
Max. ambient temperature Tma (°C): Note: ambient air during test were T_{amb} = 24°C, 23°C, 23°C and 24°C respectively	40	40	40	40	--
Model: LTE05W-S4-T					
PCB near BR1	58	57	60	59	105
C5 body near T1	58	58	63	63	105

L1 coil	66	64	66	65	105
T1 coil	63	62	69	69	110
T1 core	64	63	72	71	110
U2 body near T1	56	56	61	61	100
CY3 body near T1	52	52	56	56	125
Inside of enclosure near T1	59	58	65	64	--
Surface of enclosure near T1	52	51	56	55	95
Max. ambient temperature Tma (°C): Note: ambient air during test were T_{amb} = 24°C, 23°C, 23°C and 24°C respectively	40	40	40	40	--
Model: LTE05E-S4					
Test voltage	90Vac		264Vac		--
Pin of appliance inlet	42		43		70
Max. ambient temperature Tma (°C): Note: ambient air during test were T_{amb} = 23°C and 23°C respectively	40		40		--

Temperature T of winding:	R_1 (Ω)	R_2 (Ω)	--	--	--

Note:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in sub-clause 1.6.2 and at voltages as described above.

With a specified ambient temperature of 40°C.

The max. ambient temperature T_{ma} is defined at 40°C. Therefore the maximum temperatures measured are recalculated as follows: T + (40 – T_{amb}) where T is the maximum temperature measured during test and T_{amb} is the ambient temperature during test.

Winding components (providing safety isolation):
- Class B Tmax = 120 °C - 10 °C = 110°C

4.5.2	TABLE: ball pressure test of thermoplastic parts		**P**
	allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Material of plug holder (mfr.: Nan Ya, type: 5712)	125	1.45

Note:

Bobbin of T1 are made of Phenolic material, which is accepted without test.

4.6.1, 4.6.2	Table: enclosure openings	P

Location	Size (mm)	Comments
Top	None	
Side	None	
Bottom	None	

Note(s):

No any openings.

4.7	Table: resistance to fire	P

Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class
Plastic Enclosure	Nan Ya Plastics Corp.	5712	1.74	V-0
PCB	1.	1.	--	1.

Note:

1. For details refer to table 1.5.1.

5.1.6	TABLE: touch current measurement	P

Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments
Unit on	0.01	0.01	0.25	To enclosure with metal foil, switch “e” closed.
Unit on	0.08	0.08	0.25	To output connector (+), switch “e” closed.
Unit on	0.08	0.08	0.25	To output connector (-), switch “e” closed.

Input voltage: 264V

Input frequency: 63Hz

Overall capacity: CY3 = 1000pF

5.2	TABLE: electric strength tests and impulse tests	P

Test voltage applied between:	Test voltage (V)	Breakdown
Unit: primary and secondary	DC 4242	No
Unit: primary and enclosure with metal foil	DC 4242	No
T1: primary winding and secondary winding	AC 3000	No

T1: secondary winding and core	AC 3000	No
One layer of insulation tape	AC 3000	No
Mylar sheet (reinforced insulation)	AC 3000	No

5.3	TABLE: fault condition tests		**P**
	ambient temperature (°C) ..... :	25 °C, if not otherwise stated	—
	model/type of power supply ..... :	See below	—
	manufacturer of power supply ..... :	Li Tone	—
	rated markings of power supply ..... :	See page 5 for detail	—

No.	Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Result
Model LTE05W-S4-T							
1	U2 Pin1 - Pin 2	s-c	240	1hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 45 °C, U2 = 44 °C, no hazards.
2	U2 Pin 3 - Pin 4	s-c	240	1hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 43 °C, U2 = 42 °C, no hazards.
3	T1 Pin (F1 – F2)	s-c	240	1.5hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 43 °C, U2 = 41 °C, no hazards.
4	T1 Pin 1 - Pin 3	s-c	240	1hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 44 °C, U2 = 43 °C, no hazards.
5	T1 Pin 4 - Pin 5	s-c	240	1.5hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 45 °C, U2 = 44 °C, no hazards.
6	Q1 Pin (G - S)	s-c	240	1hr	F1	0.02	Unit shut down immediately. T1 coil = 29 °C, U2 = 27 °C, no hazards.
7	Q1 Pin (D - S)	s-c	240	1sec	F1	--	Fuse open, R4, Q1 damaged, no hazards.
8	Q1 Pin (D - G)	s-c	240	1sec	F1	--	Fuse open, R4, Q1 damaged, no hazards.
9	IC1 Pin 2 – Pin 5	s-c	240	1hr	F1	0.01	Unit shut down immediately. T1 coil = 30 °C, U2 = 28 °C, no hazards.

10	IC1 Pin 2 – Pin 4	s-c	240	1hr	F1	0.01	Unit shut down immediately. T1 coil = 30 °C, U2 = 27 °C, no hazards.
11	C5	s-c	240	1sec	F1	--	Fuse open, no hazards.
12	BR1 (AC to +)	s-c	240	1sec	F1	--	Fuse open, no hazards.
Model LTE05W-S1-T							
13	T1 Pin (F1 – F2)	o-l	240	8hr	F1	0.11	Temperature was stable at load 1.94A, T1 coil = 84 °C, U2 = 60 °C, Unit shutdown at load 1.95A, no hazards.
Model LTE05W-S2-T							
14	T1 Pin (F1 – F2)	o-l	240	11hr	F1	0.14	Temperature was stable at load 1.18A, T1 coil = 108 °C, U2 = 81 °C, Unit shutdown at load 1.2A, no hazards.
Model LTE05W-S4-T							
15	T1 Pin (F1 – F2)	o-l	240	8hr	F1	0.12	Temperature was stable at load 0.46A, T1 coil = 94 °C, U2 = 67 °C, Unit shut down at load 0.48A, no hazards.
Model LTE05W-S1-T							
16	+5V / 1A	s-c	240	1hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 34 °C, U2 = 31 °C, no hazards.
Model LTE05W-S2-T							
17	+12V / 0.5A	s-c	240	1hr	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 35 °C, U2 = 32 °C, no hazards.
Model LTE05W-S4-T							
18	+24V / 0.2A	s-c	240	2hrs	F1	0.01 to 0.02	Unit cycle protection, T1 coil = 36 °C, U2 = 32 °C, no hazards.
Model LTE05W-S1-T							
19	+5V / 1A	o-l	240	11hr	F1	0.09	Temperature was stable at load 1.82A, T1 coil = 74 °C, U2 = 54 °C, Unit shutdown at load 1.83A, no hazards.
Model LTE05W-S2-T							
20	+12V / 0.5A	o-l	240	5.5hr	F1	0.11	Temperature was stable at load 1.03A, T1 coil = 83 °C, U2 = 66 °C, Unit shutdown at load 1.08A, no hazards.

Model LTE05W-S4-T							
21	+24V / 0.2A	o-l	240	7.5hr	F1	0.11	Temperature was stable at load 0.44 A, T1 coil = 89 °C, U2 = 65 °C, Unit shutdown at load 0.48 A, no hazards.

Note(s):

1. In fault column, where s-c=short-circuited, o-l=overloaded

2. For all fuse source, tests with fuse opened condition have been repeated ten times with same result.

C.2	Safety isolation transformer	**P**
	Construction details:	
Transformer T1		
Manufacturer: See appended table 1.5.1		
Type: See appended table 1.5.1		
All types transformers are similar in construction except for type designation, gauge and turn of primary and secondary winding.		

Recurring peak voltage	440V	
Required clearance distance for reinforced		
insulation (from table 2H and 2J)	4.0 + 0.2 mm	
Effective voltage rms	253V	
Required creepage distance for reinforced		
insulation (from table 2L with interpolation)	5.2 mm	
Measured min. creepage distances		
Location	inside (mm)	outside (mm)
Primary to secondary	Triple insulated wire used.	7.0
Primary to core	%	%
Secondary to core	Triple insulated wire used.	7.0
Primary to primary	%	%
Measured min. clearances		
Location	inside (mm)	outside (mm)

Primary to secondary	Triple insulated wire used.	7.0
Primary to core	%	%
Secondary to core	Triple insulated wire used.	7.0
Primary to primary	%	%
Construction: Concentric windings on EE-16 type bobbin. Outer winding is primary. Secondary windings are used triple insulated winding. Core is considered as primary. Two layers of insulation tape between primary and secondary windings. Winding ends are additionally tubing exit to prevent mechanical stress in two different windings. There are two layers of insulation tape to wrap around the outer of transformer. All secondary pins are cut off and fly wires connect to PCB directly. Primary winding: enamelled copper wire Secondary winding: triple insulated winding wire (see table 1.5.1)		
Pin numbers		
Prim.	5-2-4; 3-1	
Sec.	F1-F2	
Bobbin		
Material	Chang Chun Plastic, phenolic type, T375J, V-0, 150°C	
Thickness	0.7 mm	
Electric strength test		
With AC 3000V after humidity treatment		
Result	Pass	

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

APPENDIX	Australian National Differences according to CB Bulletin No. 110A, June 2006 (AS/NZS 60950.1:2003) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Annex ZZ Variations			
1.2	Between the definitions for "Person, service" and "Range, rated frequency" insert the following: Potential ignition source 1.2.12.201	Inserted.	**N/A**
1.2.12.15	After the definition of 1.2.12.15, add the following: 1.2.12.201 Potential ignition source: Possible fault which can start a fire if the open-circuit voltage measured across an interruption or faulty contact exceeds a value of 50 V (peak) a.c. or d.c. and the product of the peak value of this voltage and the measured r.m.s. current under normal operating conditions exceeds 15 VA. Such a faulty contact or interruption in an electrical connection includes those which may occur in conductive patterns on printed boards. NOTE 201: An electronic protection circuit may be used to prevent such a fault from becoming a potential ignition source. NOTE 202: This definition is from AS/NZS 60065:2003.	Added.	**N/A**
1.5.1	Add the following to the end of first paragraph: "or the relevant Australian/New Zealand Standard."	Added.	**P**
1.5.2	Add the following to the end of first and third dash items: "or the relevant Australian/New Zealand Standard."	Added.	**P**
2.1	Delete the Note.	Deleted.	**N/A**
3.2.3	Delete Note 2.	Deleted.	**N/A**
3.2.5	Modify Table 3B as follows:	Replaced.	**N/A**

Rated current of equipment A	Nominal cross-sectional area mm^2	AWG or kcmil (cross-sectional area in mm^2) see Note 1

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict

	Over 0.2 up to and including 3	0.5[1)]	18 [0.8]		
	Over 3 up to and including 7.5	0.75	16 [1.3]		
	Over 7.5 up to and including 10	(0.75) 1.00	16 [1.3]		
	Over 10 up to and including 16	(1.0) 1.5	14 [2]		
	Replace footnote 1) with the following: [1)] This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliances, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191). Delete Note 1.				
4.3.6	Replace paragraph three with: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.			Replaced. Compliance shall be evaluated during the national approval.	**N/A**
4.3.13.5	Add the following to the end of the first paragraph: ", or AS/NZS 2211.1"			Added.	**N/A**
4.7	Add the following paragraph: For alternative tests refer to clause 4.7.201.			Added. However, equipment under test and materials used are in compliance with requirements of IEC 60950-1. Alterative test methods were not condidered.	**N/A**
4.7.201	Add the following after clause 4.7.3.6: 4.7.201 Resistance to fire - Alternative tests			See above.	**N/A**
4.7.201.1	General Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following: (a) Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NSZ 4695.707 and			See above.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	having openings only for the connecting wires filling the openings completely, and for the ventilation not exceeding 1 mm in width regardless of the length. (b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material flammability category FV-1 or better according to AS/NZS 4695.707 NOTE - In considering how to minimize propagation of fire and what "small parts" are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. Compliance is checked by tests of 4.7.201.2, 4.7.201.3, 4.7.201.4 and 4.7.201.5. For the base materials of printed boards, compliance is checked by the test of 4.7.201.5. The tests shall be carried out on parts of non-metallic material, which have been removed from the apparatus. When the glow-wire test is carried out, the parts shall be placed in the same orientation, as they would be in normal use. These tests are not carried out on internal wiring.		
4.7.201.2	Parts of non-metallic material are subjected to glow wire test of AS/NZS 4695.2.11, which is carried out at 550 °C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of materials classified at least FH-3 according to ISO 9772 provided that the sample was not thicker than the relevant part.	See above.	**N/A**
4.7.201.3	Testing of insulating materials Parts of insulating materials supporting potential ignition sources shall be subject to the glow-wire test of AN/NZS 4695.2.11, which is carried out at	See above.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	750 °C. The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE - Contacts in components such as switch contacts are considered to be connections. For parts, which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test shall not be tested. The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications: **5 Severities** Replace with: The duration of application of the test flame shall be 30 s ± 1 s. **8 Test procedure** 8.2 Modification: Replace the first sentence with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. 8.4 Modification: The first paragraph does not apply. Addition: If possible, the flame shall be applied at least 10 mm from a corner. 8.5 Replacement: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test. **10 Evaluation of test results** Replace with: The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.		

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10, provided that the sample tested was not thicker than the relevant part.		
4.7.201.4	Testing in the event of non-extinguishing material If parts, other than enclosures, do not withstand the glow-wire tests of 4.7.201.3, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 4.7.201.3 is made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 4.7.201.3. Parts shielded by a separate barrier which meets the needle-flame test need not to be tested. NOTE 1 - If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirement of clause 4.7.201 without the need for consequential testing. NOTE 2 - If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burring or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirement of clause 4.7.201 without the need for consequential testing. NOTE 3 - Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting in contact with or in close proximity to connections.	See above.	**N/A**
4.7.201.5	Testing of printed boards The base material of printed boards is subjected to needle-flame test to Clause 4.7.201.3. The flame is applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm for a potential ignition source. The test is not carried out if the – - Printed board does not carry any potential ignition source; - Base material of printed boards, on which the	See above.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0 according to AS/NZS 4695.707, or made of metal, having openings only for connecting wires which fill the opening completely, or - Base material of printed boards, on which the available apparatus power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material printed boards supporting spark gaps which provide protection against overvoltages, is of flammability category FV-0 according to AS/NSZ 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires fill the openings completely. Compliance is determined using the smallest thickness of the material. NOTE - Available apparent power is the maximum apparent power, which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximise the apparent power for more than 2 min when the circuit supplied is disconnected.		
6.2.2	Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2. Delete the note.	Added.	**N/A**
6.2.2.1	Delete Note 2. Add the following after the first paragraph: In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700 μs impulses. The interval between successive impulses is 60 s and the initial voltage, Uc, is: - for 6.2.1 a): 7.0 kV for hand-held telephones and for headsets and 2.5 kV for other equipment; and	Deleted.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	- for 6.2.1b) and 6.2.1c): 1.5 kV. NOTE 201 - The 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 – The 2.5 kV impulse for 6.2.1a) was chosen to ensure adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.		
6.2.2.2	Delete the note. Add the following after the second paragraph: In Australia (this variation does not apply in New Zealand), the a.c. test voltage is: - for 6.2.1a): 3 kV; and - for 6.2.1b) and 6.2.1c): 1.5 kV. NOTE 201 – Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 – The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.	Deleted.	**N/A**
Annex P	Add the following Normative References to Annex P: IEC 60065, Audio, Video and similar electronic apparatus - Safety requirements AS/NZS 3112, Approval and test specification - Plugs and socket-outlets AS/NZS 3191, Approval and test specification - Electric flexible cords AS/NZS 4695.707, Fire hazard testing of electrotechnical products - Methods of test for the determination of the flammability of solid electrical insulating materials when exposed to an igniting source	Added.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Canadian National Differences according to CB Bulletin No. 110A, June 2006 (CAN/CSA C22.2 No. 60950-1/UL60950-1) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Special National Conditions			
1.1.1	All equipment is to be designed to allow installations in accordance with the National Electrical Code (NEC), ANSI/NFPA 70,the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part 1.	**P**
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	**P**
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	Output cord are less than 3.05m External interconnecting cable type VW-1, 80°C, 300V.	**P**
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. 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.”	Equipment uses on supply system with a neutral and one phase conductor only.	**N/A**
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No fuses used for these purpose.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles 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 10 kVA or more, require transformer overcurrent protection.	No standard supply outlets.	**N/A**
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Appliance inlet and plug.	**N/A**
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No attachment plugs provided.	**N/A**
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanently connected equipment.	**N/A**
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	No power supply cords provided.	**N/A**
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanently connected equipment.	**N/A**
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No field wiring terminals.	**N/A**
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm²).	No wire binding screws used.	**N/A**
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Not permanently connected equipment.	**N/A**
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12A, or if the motor has a nominal voltage rating greater than 120V, or is rated more than 1/3 hp (locked rotor current over 43 A)	No motors with these conditions.	**N/A**
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the ”on” position indicated by the handle in the up position.	No such switch.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery.	**N/A**
4.3.12	The maximum quantify of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid.	**N/A**
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers.	**N/A**
4.7	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.	Not Automated information storage equipment.	**N/A**
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m 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.	No such enclosure.	**N/A**
Annex H	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	**N/A**
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 applicable national (Canadian and/or U.S.) component or material standards, as far as they may apply. The acceptance will be based on the following: A) A component Certified by a Canadian or U.S. National Certification Body (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 subject to the applicable tests of the equipment standard. 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	Components are UL/CSA approved, see component list 1.5.1.	**P**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	will also be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment. 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 subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment. D) Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory		
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mAd.c. under normal operating conditions.	No TNV.	**N/A**
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV.	**N/A**
2.6.3.3	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.	Class II equipment.	**N/A**
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, writing, marking and installation instruction requirements.	Connected AC mains only.	**N/A**
4.2.8.1	Enclosures around CRTs with a face diameter of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT equipment.	**N/A**
4.3.2	Equipment with handles is required to comply with special loading tests.	Not handle equipment.	**N/A**
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV.	**N/A**
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	Enamel coating on winding wire not considered electrical separation.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV.	**N/A**
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No earphones.	**N/A**
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No ringing signals.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	Korean National Differences according to CB Bulletin No. 110A, June 2006 (K60950) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).	No plug provided.	**N/A**
7	Addition: EMC The apparatus shall comply with the relevant CISPR standards.	It shall be evaluated during national approval.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
APPENDIX	US National Differences according to CB Bulletin No. 110A, June 2006 (UL 60950-1) (IEC Publication 60950-1:2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
Special National Conditions			
1.1.1	All equipment is to be designed to allow installations in accordance with the National Electrical Code (NEC), ANSI/NFPA 70,the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part 1.	**P**
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	**P**
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.	Output cord are less than 3.05m External interconnecting cable type VW-1, 80°C, 300V.	**P**
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. 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.”	Equipment uses on supply system with a neutral and one phase conductor only.	**N/A**
2.5	Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.	No fuses used for these purpose.	**N/A**
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all	No standard supply outlets.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	standard supply outlets, receptacles 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 10 kVA or more, require transformer overcurrent protection.		
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC.	Appliance inlet and plug.	**N/A**
3.2.1	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	No attachment plugs provided.	**N/A**
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanently connected equipment.	**N/A**
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	No power supply cords provided.	**N/A**
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	Not permanently connected equipment.	**N/A**
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.	No field wiring terminals.	**N/A**
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm²).	No wire binding screws used.	**N/A**
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7).	Not permanently connected equipment.	**N/A**
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12A, or if the motor has a nominal voltage rating greater than 120V, or is rated more than 1/3 hp (locked rotor current over 43 A)	No motors with these conditions.	**N/A**
3.4.8	Vertically-mounted disconnect switches and circuit breakers are required to have the ”on” position indicated by the handle in the up position.	No such switch.	**N/A**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No battery.	**N/A**
4.3.12	The maximum quantify of flammable liquid stored in equipment is required to comply with NFPA 30.	No flammable liquid.	**N/A**
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No lasers.	**N/A**
4.7	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.	Not Automated information storage equipment.	**N/A**
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m² or a single dimension greater than 1.8 m 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.	No such enclosure.	**N/A**
Annex H	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation.	**N/A**
Other differences			
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, surge suppressors, switches	Components are UL/CSA approved, see component list 1.5.1.	**P**

National Differences			
Clause	Requirement – Test	Result – Remark	Verdict
	(including interlock switches), thermal cut-offs, thermostats, multi-layer transformer winding wire, tubing, wire connectors, and wire and cables.		
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV.	**N/A**
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	No TNV.	**N/A**
2.6.3.3	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.	Class II equipment.	**N/A**
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, writing, marking and installation instruction requirements.	Connected AC mains only.	**N/A**
4.2.8.1	Enclosures around CRTs with a face diameter of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.	No CRT equipment.	**N/A**
4.3.2	Equipment with handles is required to comply with special loading tests.	Not handle equipment.	**N/A**
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	No TNV.	**N/A**
6.2.1	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	Enamel coating on winding wire not considered electrical separation.	**N/A**
6.4	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	No TNV.	**N/A**
6.5	Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.	No earphones.	**N/A**
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No ringing signals.	**N/A**