

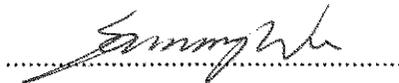
TEST REPORT

IEC 60950

Safety of information technology equipment

Report reference No . : 308935

Tested by (printed name and signature) : Sammy Wu



Approved by (printed name and signature) : Patrick Hsu



Date of issue : September 23, 2003

Contents : 88 pages test report + Appendix 1, 2 pages + Appendix 2, 2 pages + Appendix 3, 2 pages + Appendix 4, 1 page + Appendix 5, 1 page + photos, 6 pages.

Testing laboratory

Testing Laboratory Name : Intertek Semko AB

Address : P.O. Box 1103, SE-164 22 Kista, SWEDEN

Testing location : Outstanding Electronics Manufacturer Co., Ltd.
3 F, No. 541, Chung Cheng Rd., Hsin-Tien, Taipei, Taiwan

Client

Applicant's Name : Outstanding Electronics Manufacturer Co., Ltd.

Address : 3 F, No. 541, Chung Cheng Rd., Hsin-Tien, Taipei, Taiwan

Test specification

Standard : IEC 60950, 3rd Edition (1999)
(EN 60950: 2000)

Test procedure : CB-scheme

Procedure deviation : Group differences and special national deviations of all GENELEC countries for AU, CA, CN, JP, KR, US, AR, BR, IL, MY, PL, RU, SG, SI, TR, UA, and ZA.

Non-standard test method : N.A.

Test Report Form

Test Report Form No. : I950__F/00-03

Master TRF : dated 00-02

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Test item

Test item description : Power supply for business machine

Trademark : **OEM®**

Model and/or type reference : AA-***** (see the note on page 3)

Rating(s) : Input: 220 Vac, 50 Hz, 140 mA; 220 Vac, 60 Hz, 140 mA;
230 Vac, 50 Hz, 140 mA; 230 Vac, 60 Hz, 140 mA;
240 Vac, 50 Hz, 140 mA; or 240 Vac, 60 Hz, 140 mA

Output: 6 – 24 Vac, 0,5 – 2,5 A, max. 20,0 VA

Class II



Particulars: test item vs. test requirements

Equipment mobility.....: Direct plug-in
 Operating condition.....: Continuous
 Mains supply tolerance (%)......: - 10 % and + 10 % (Voltage +10% is required by the client.)
 Tested for IT power systems.....: Yes
 IT testing, phase-phase voltage (V).....: 230 V for Norway
 Class of equipment.....: Class II
 Mass of equipment (kg).....: Max. 0,562 kg
 Protection against ingress of water: IP 20

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 5, 2003
 Date(s) of performance of test: September 12, 2003 ~ September 16, 2003

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.
 The test results presented in this report relate only to the item(s) tested.
 "(see remark #)" refers to a remark appended to the report.
 "(see Annex #)" refers to an annex appended to the report.
 Throughout this report a comma is used as the decimal separator.

Note:

The models AA-062A5BN, AA-082A5BN, AA-151A1BN and AA-2450BN are tested for representatives of this series of AC/AC power supply.

The details of the model designation of AA-***** are shown as follows:

The first to the second " * " may be 06 – 24 to indicate output voltage. " 06 " means 6Vac; " 24 " means 24Vac.

The third to the fifth " * " may be 50 – 2A5 to indicate different output current. " 50 " means 0,5 A; " 2A5 " means 2,5 A.

The sixth " * " may be B, D, E, K, P, C, I, and H to indicate different integral plug. " B " means flat pins European plug; " D " means UK plug; " E " means Australia plug; " K " means Korea plug; " P " means China plug; " C " means South Africa plug; " I " means Argentina plug; " H " means US plug.

The last " * " may be A – Z or blank to indicate marketing purpose.

All ratings of this series are detailed as following:

Model designation	Output voltage (Vac)	Output current (A)	Max. output power (VA)	Remark
AA-061A3**	6	1,3	7,8	
AA-061A4**	6	1,4	8,4	
AA-061A5**	6	1,5	9,0	
AA-061A6**	6	1,6	9,6	
AA-061A7**	6	1,7	10,2	
AA-061A8**	6	1,8	10,8	
AA-061A9**	6	1,9	11,4	
AA-062A**	6	2,0	12,0	
AA-062A1**	6	2,1	12,6	
AA-062A2**	6	2,2	13,2	
AA-062A3**	6	2,3	13,8	
AA-062A4**	6	2,4	14,4	
AA-062A5**	6	2,5	15,0	Tested
AA-071A2**	7,5	1,2	9,0	
AA-071A3**	7,5	1,3	9,75	
AA-071A4**	7,5	1,4	10,5	
AA-071A5**	7,5	1,5	11,25	
AA-071A6**	7,5	1,6	12,0	
AA-071A7**	7,5	1,7	12,75	

Model designation	Output voltage (Vac)	Output current (A)	Max. output power (VA)	Remark
AA-071A8**	7,5	1,8	13,5	
AA-071A9**	7,5	1,9	14,25	
AA-072A**	7,5	2,0	15,0	
AA-072A1**	7,5	2,1	15,75	
AA-072A2**	7,5	2,2	16,5	
AA-072A3**	7,5	2,3	17,25	
AA-072A4**	7,5	2,4	18,0	
AA-072A5**	7,5	2,5	18,75	
AA-081A2**	8	1,2	9,6	
AA-081A3**	8	1,3	10,4	
AA-081A4**	8	1,4	11,2	
AA-081A5**	8	1,5	12,0	
AA-081A6**	8	1,6	12,8	
AA-081A7**	8	1,7	13,6	
AA-081A8**	8	1,8	14,4	
AA-081A9**	8	1,9	15,2	
AA-082A**	8	2,0	16,0	
AA-082A1**	8	2,1	16,8	
AA-082A2**	8	2,2	17,6	
AA-082A3**	8	2,3	18,4	
AA-082A4**	8	2,4	19,2	
AA-082A5**	8	2,5	20,0	Tested
AA-091A	9	1	9	
AA-091A1**	9	1,1	9,9	
AA-091A2**	9	1,2	10,8	
AA-091A3**	9	1,3	11,7	
AA-091A4**	9	1,4	12,6	
AA-091A5**	9	1,5	13,5	
AA-091A6**	9	1,6	14,4	
AA-091A7**	9	1,7	15,3	
AA-091A8**	9	1,8	16,2	
AA-091A9**	9	1,9	17,1	
AA-092A**	9	2,0	18,0	
AA-092A1**	9	2,1	18,9	

Model designation	Output voltage (Vac)	Output current (A)	Max. output power (VA)	Remark
AA-092A2**	9	2,2	19,8	
AA-101A2**	10	1,2	12,0	
AA-101A3**	10	1,3	13,0	
AA-101A4**	10	1,4	14,0	
AA-101A5**	10	1,5	15,0	
AA-1290**	12	0,9	10,8	
AA-1295**	12	0,95	10,8	
AA-121A**	12	1,0	12,0	
AA-121A1**	12	1,1	13,2	
AA-121A2**	12	1,2	14,4	
AA-121A3**	12	1,3	15,6	
AA-121A4**	12	1,4	16,8	
AA-121A5**	12	1,5	18,0	
AA-121A6**	12	1,66	19,92	
AA-1370**	13,5	0,7	9,45	
AA-1375**	13,5	0,75	9,45	
AA-1380**	13,5	0,8	10,8	
AA-1385**	13,5	0,85	10,8	
AA-1390**	13,5	0,9	12,15	
AA-1395**	13,5	0,95	12,15	
AA-131A**	13,5	1,0	13,5	
AA-131A1**	13,5	1,1	14,85	
AA-131A2**	13,5	1,2	16,2	
AA-131A3**	13,5	1,3	17,55	
AA-131A4**	13,5	1,4	19,98	
AA-1570**	15	0,7	10,5	
AA-1575**	15	0,75	10,5	
AA-1580**	15	0,8	12,0	
AA-1585**	15	0,85	12,0	
AA-1590**	15	0,9	13,5	
AA-1595**	15	0,95	13,5	
AA-151A**	15	1,0	15,0	
AA-151A1**	15	1,1	16,5	Tested
AA-151A2**	15	1,2	18,0	

Model designation	Output voltage (Vac)	Output current (A)	Max. output power (VA)	Remark
AA-151A3**	15	1,3	19,95	
AA-1670**	16	0,7	11,2	
AA-1675**	16	0,75	11,2	
AA-1680**	16	0,8	12,8	
AA-1685**	16	0,85	12,8	
AA-1690**	16	0,9	14,4	
AA-1695**	16	0,95	14,4	
AA-161A**	16	1,0	16,0	
AA-161A1**	16	1,1	17,6	
AA-161A2**	16	1,2	20,0	
AA-1760**	17	0,6	10,2	
AA-1765**	17	0,65	11,05	
AA-1770**	17	0,7	11,9	
AA-1775**	17	0,75	12,75	
AA-1780**	17	0,8	13,6	
AA-1785**	17	0,85	14,45	
AA-1790**	17	0,9	15,3	
AA-1795**	17	0,95	16,15	
AA-171A**	17	1,0	17	
AA-171A1	17	1,1	18,7	
AA-1860**	18	0,6	10,8	
AA-1865**	18	0,65	10,8	
AA-1870**	18	0,7	12,6	
AA-1875**	18	0,75	12,6	
AA-1880**	18	0,8	14,4	
AA-1885**	18	0,85	14,4	
AA-1890**	18	0,9	16,2	
AA-1895**	18	0,95	16,2	
AA-181A**	18	1,0	18,0	
AA-181A1**	18	1,1	19,8	
AA-2060**	20	0,6	12,0	
AA-2065**	20	0,65	12,0	
AA-2070**	20	0,7	14,0	
AA-2075**	20	0,75	14,0	

Model designation	Output voltage (Vac)	Output current (A)	Max. output power (VA)	Remark
AA-2080**	20	0,8	16,0	
AA-2085**	20	0,85	16,0	
AA-2090**	20	0,9	18,0	
AA-2095**	20	0,95	18,0	
AA-201A**	20	1,0	20,0	
AA-2250**	22	0,5	11,0	
AA-2255**	22	0,55	11,0	
AA-2260**	22	0,6	13,2	
AA-2265**	22	0,65	13,2	
AA-2270**	22	0,7	15,4	
AA-2275**	22	0,75	15,4	
AA-2280**	22	0,8	17,6	
AA-2285**	22	0,85	17,6	
AA-2290**	22	0,9	19,8	
AA-2295**	22	0,95	19,8	
AA-2450**	24	0,5	12,0	Tested
AA-2455**	24	0,55	14,4	
AA-2470**	24	0,7	16,8	
AA-2475**	24	0,75	16,8	
AA-2480**	24	0,8	19,2	
AA-2485**	24	0,85	19,2	
AA-2483**	24	0,83	19,92	

Copy of marking plate and summary of test results (information/comments):

(Representative)

OEM[®]
AC ADAPTOR
MODEL NO.: AA-062A5BN
INPUT: 220 V~ 50 Hz 140mA
OUTPUT: 6V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-062A5BN
INPUT: 220 V~ 60Hz 140mA
OUTPUT: 6V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-062A5BN
INPUT: 230 V~ 50Hz 140mA
OUTPUT: 6V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-062A5BN
INPUT: 230 V~ 60Hz 140mA
OUTPUT: 6V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-062A5BN
INPUT: 240 V~ 60Hz 140mA
OUTPUT: 6V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-062A5BN
INPUT: 240 V~ 60Hz 140mA
OUTPUT: 6V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-082A5BN
INPUT: 220 V~ 50 Hz 140mA
OUTPUT: 8V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-082A5BN
INPUT: 220 V~ 60 Hz 140mA
OUTPUT: 8V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-082A5BN
INPUT: 230 V~ 50 Hz 140mA
OUTPUT: 8V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-082A5BN
INPUT: 230 V~ 60 Hz 140mA
OUTPUT: 8V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-082A5BN
INPUT: 240 V~ 50 Hz 140mA
OUTPUT: 8V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM[®]
AC ADAPTOR
MODEL NO.: AA-082A5BN
INPUT: 240 V~ 60 Hz 140mA
OUTPUT: 8V~ 2.5A



FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

Copy of marking plate and summary of test results (information/comments):

(Representative)

OEM_®
AC ADAPTOR
MODEL NO.: AA-151A1BN
INPUT: 220 V~ 50 Hz 140mA
OUTPUT: 15V~ 1.1A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-151A1BN
INPUT: 220 V~ 60 Hz 140mA
OUTPUT: 15V~ 1.1A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-151A1BN
INPUT: 230 V~ 50 Hz 140mA
OUTPUT: 15V~ 1.1A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-151A1BN
INPUT: 230 V~ 60 Hz 140mA
OUTPUT: 15V~ 1.1A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-151A1BN
INPUT: 240 V~ 50 Hz 140mA
OUTPUT: 15V~ 1.1A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-151A1BN
INPUT: 240 V~ 60 Hz 140mA
OUTPUT: 15V~ 1.1A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-2450BN
INPUT: 220 V~ 50 Hz 140mA
OUTPUT: 24V~ 0.5A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-2450BN
INPUT: 220 V~ 60 Hz 140mA
OUTPUT: 24V~ 0.5A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-2450BN
INPUT: 230 V~ 50 Hz 140mA
OUTPUT: 24V~ 0.5A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-2450BN
INPUT: 230 V~ 60 Hz 140mA
OUTPUT: 24V~ 0.5A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-2450BN
INPUT: 240V~ 50 Hz 140mA
OUTPUT: 24V~ 0.5A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

OEM_®
AC ADAPTOR
MODEL NO.: AA-2450BN
INPUT: 240V~ 60 Hz 140mA
OUTPUT: 24V~ 0.5A

FOR I.T.E. ONLY
Nur für Einrichtungen der
Informationstechnik.

IEC 60950			
Clause	Requirement - Test	Result	Verdict

1	GENERAL		
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1.5	Components		
1.5.1	Comply with IEC 950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components		P
	Dimensions (mm) of mains plug for direct plug-in	See appendixes 1-5	P
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N).....	See appendixes 1-5	P
1.5.3	Thermal controls	No such device	N
1.5.4	Transformers	(see also Annex C)	P
1.5.5	Interconnecting cables		P
1.5.6	Capacitors in primary circuits		N
1.5.7	Double or reinforced insulation bridged by components	No such device	N
1.5.7.1	Bridging capacitors		N
1.5.7.2	Bridging resistors		N
1.5.7.3	Accessible parts		N
1.5.8	Components in equipment for IT power systems		N

1.6	Power interface		
1.6.1	AC power distribution systems	TN, TT or IT	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N
1.6.4	Neutral conductor		P

1.7	Marking and instructions		
1.7.1	Power rating		P
	Rated voltage(s) or voltage range(s) (V)	220Vac, 230Vac, 240Vac	P
	Symbol for nature of supply for d.c.	AC supply	N
	Rated frequency or frequency range (Hz)	50, 60 Hz	P
	Rated current (A)	140 mA	P
	Manufacturer's name/Trademark	OEM®	P
	Type/model	AA-*****	P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
	Symbol of Class II	<input checked="" type="checkbox"/>	P
	Other symbols	Complied with IEC 60417-1	P
	Certification marks		N
1.7.2	Safety instructions		P
1.7.3	Short duty cycles		N
1.7.4	Supply voltage adjustment	No such device	N
1.7.5	Power outlets on the equipment	No such device	N
1.7.6	Fuse identification	No such device	N
1.7.7	Wiring terminals		N
1.7.7.1	Protective earthing and bonding terminals		N
1.7.7.2	Terminal for a.c. mains supply conductors		N
1.7.8	Controls and indicators	No switch and control used in this unit	N
1.7.8.1	Identification, location and marking		N
1.7.8.2	Colours		N
1.7.8.3	Symbols according to IEC 60417.....		N
1.7.8.4	Markings using figures	No figures used as marking	N
1.7.9	Isolation of multiple power sources	Only one power supply	N
1.7.10	IT power system		N
1.7.11	Thermostats and other regulating devices		N
1.7.12	Language	English and local language to each country that would be marketed	—
1.7.13	Durability		P
1.7.14	Removable parts	No such device	N
1.7.15	Replaceable batteries	No replaceable battery is used	N
	Language		—
1.7.16	Operator access with a tool.....	No operator service area	N
1.7.17	Equipment for restricted access locations		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

2	PROTECTION FROM HAZARDS		
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2.1	Protection from electric shock and energy hazards		
2.1.1	Protection in OPERATOR access areas		P
2.1.1.1	Access to energized parts	See comment below	P
	Test by inspection	The concerned hazardous parts are not accessible	P
	Test with test finger	The concerned hazardous parts are not accessible	P
	Test with test pin	Hazardous live parts are not accessible	P
	Test with test probe		N
2.1.1.2	Battery compartments		N
2.1.1.3	Access to ELV wiring	No ELV circuit	N
	Working voltage (V); distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring	No internal wiring in hazardous voltage is user accessible	N
2.1.1.5	Energy hazards	No energy hazard in operator access areas	P
2.1.1.6	Manual controls	No such device	N
2.1.1.7	Discharge of capacitors in the primary circuit	No such device	N
	Time-constant (s); measured voltage (V).....		—
2.1.2	Protection in service access areas		N
2.1.3	Protection in restricted access locations		N

2.2	SELV circuits		
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V).....	40,84 Vpeak	P
2.2.3	Voltages under fault conditions (V).....		N
2.2.3.1	Separation by double or reinforced insulation (method 1)		P
2.2.3.2	Separation by earthed screen (method 2)		N
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N
2.2.4	Connection of SELV circuits to other circuits		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

2.3	TNV circuits		
2.3.1	Limits	No TNV circuit within the EUT	N
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N
	Insulation employed		—
2.3.3	Separation from hazardous voltages		N
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N

2.4	Limited current circuits		
2.4.1	General requirements		N
2.4.2	Limit values		N
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured capacitance (µF)		—
2.4.3	Connection of limited current circuits to other circuits		N

2.5	Limited power sources		
	Inherently limited output		P
	Impedance limited output		N
	Overcurrent protective device limited output		P
	Regulating network limited output under normal operating and single fault condition		N
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N
	Output voltage (V), output current (A), apparent power (VA)	See the Note on next page	—
	Current rating of overcurrent protective device (A)	See the Note on next page	—

IEC 60950			
Clause	Requirement - Test	Result	Verdict

Note (Clause 2.5):

The models AA-062A5BN, AA-082A5BN, AA-151A1BN, and AA-2450BN are tested for representatives of this series of AC/AC power supply.

The output of the power supply complies with the requirement of non-inherently Limited Power Source.

Model AA-062A5BN

Limits: $I_{sc} \leq 89,3 \text{ A}$, $VA \leq 250$ (Fuse 5 A).

Measured $U_{oc} = 11,20 \text{ Vac}$, $I_{sc} = 4,9 \text{ A}$, $VA = 23,98 \text{ VA}$ ($5,45 \text{ Vac} \times 4,4 \text{ A}$), under the maximum normal operation (the worst case).

Model AA-082A5BN

Limits: $I_{sc} \leq 99,0 \text{ A}$, $VA \leq 250$ (Fuse 5 A).

Measured $U_{oc} = 10,1 \text{ Vac}$, $I_{sc} = 9,8 \text{ A}$, $VA = 51,03 \text{ VA}$ ($6,3 \text{ Vac} \times 8,1 \text{ A}$), under the maximum normal operation (the worst case).

The output of the power supply complies with the requirement of inherently Limited Power Source.

Model AA-151A1BN

Limits: $I_{sc} \leq 8 \text{ A}$, $VA \leq 93,2$ ($5 \times U_{oc}$).

Measured $U_{oc} = 18,64 \text{ Vac}$, $I_{sc} = 3,0 \text{ A}$, $VA = 35,96 \text{ VA}$ ($12,4 \text{ Vac} \times 2,9 \text{ A}$), under the maximum normal operation (the worst case).

Model AA-2450BN

Limits: $I_{sc} \leq 8 \text{ A}$, $VA \leq 144,4$ ($5 \times U_{oc}$).

Measured $U_{oc} = 28,88 \text{ Vac}$, $I_{sc} = 2,4 \text{ A}$, $VA = 33,84 \text{ VA}$ ($18,8 \text{ Vac} \times 1,8 \text{ A}$), under the maximum normal operation (the worst case).

2.6	Provisions for earthing and bonding		
2.6.1	Protective earthing	Class II equipment	N
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		N
2.6.3.1	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG.....:		—
2.6.3.2	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area (mm ²), AWG.....:		—
2.6.3.3	Rated current (A), type and nominal thread diameter (mm).....:		N
	Resistance (Ω) of earthing conductors and their terminations, test current (A).....:		N
2.6.3.4	Colour of insulation		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
2.6.4	Terminals		N
2.6.4.1	Protective earthing and bonding terminals		N
	Rated current (A), type and nominal thread diameter (mm).....:		—
2.6.4.2	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network		N

2.7	Overcurrent and earth fault protection in primary circuits		
2.7.1	Basic requirements	Integral parts of equipment	P
	Instructions when protection relies on building installation		P
2.7.2	Faults not covered in 5.3		N
2.7.3	Short-circuit backup protection	Building installation is considered as the short-circuit backup protection	P
2.7.4	Number and location of protective devices	One thermal fuse is located in the primary winding of the transformer	P
2.7.5	Protection by several devices	Only one protection device	N
2.7.6	Warning to service personnel.....:		N

2.8	Safety interlocks		
2.8.1	General principles	No safety interlock	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
2.8.5	Interlocks with moving parts		N
2.8.6	Overriding an interlock		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

2.8.7	Switches and relays in interlock systems		N
2.8.7.1	Contact gaps (mm)		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test (V)		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	40 °C, 93 %, 120 hours	P
2.9.3	Requirements for insulation		P
2.9.4	Insulation parameters	Considered	P
2.9.5	Categories of insulation	Considered	P

2.10	Clearances, creepage distances and distances through insulation		
2.10.1	General		P
2.10.2	Determination of working voltage		P
2.10.3	Clearances		P
2.10.3.1	General		P
2.10.3.2	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.3	Clearances in secondary circuits		N
2.10.3.4	Measurement of transient levels		N
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
	CTI tests	IIIb	—
2.10.5	Solid insulation		P
2.10.5.1	Minimum distance through insulation	(see appended table 2.10.5)	P
2.10.5.2	Thin sheet material		N
	Number of layers (pcs).....		—
	Electric strength test		—
2.10.5.3	Printed boards		N
	Distance through insulation		N
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs).....		N

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Clause	Requirement - Test	Result	Verdict
2.10.5.4	Wound components		N
	Number of layers (pcs).....:		N
	Two wires in contact inside component; angle between 45° and 90°		N
2.10.6	Coated printed boards		N
2.10.6.1	General		N
2.10.6.2	Sample preparation and preliminary inspection		N
2.10.6.3	Thermal cycling		N
2.10.6.4	Thermal ageing (°C).....:		N
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test		N
	Electric strength test		—
2.10.7	Enclosed and sealed parts.....:	No such device	N
	Temperature $T_1=T_2 = T_{mra} - T_{amb} + 10K$ (°C).....:		N
2.10.8	Spacings filled by insulating compound.....:	No such device	N
	Electric strength test		—
2.10.9	Component external terminations		N
2.10.10	Insulation with varying dimensions		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

3	WIRING, CONNECTIONS AND SUPPLY		
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3.1	General		
3.1.1	Current rating and overcurrent protection	(see appended table 1.5.1)	P
3.1.2	Protection against mechanical damage	Smooth wireways	P
3.1.3	Securing of internal wiring	All internal wiring are suitable fixed	P
3.1.4	Insulation of conductors	(see appended table 5.2)	P
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Non-metallic materials in electrical connections		N
3.1.8	Self-tapping and spaced thread screws	No such screw used	N
3.1.9	Termination of conductors		P
	10 N pull test		P
3.1.10	Sleeving on wiring		N

3.2	Connection to a.c. mains supplies		
3.2.1	Means of connection	Integral plug forming as part of unit	P
3.2.2	Multiple supply connections	Only one supply connection	N
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter (mm) of cable and conduits		—
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

3.3	Wiring terminals for connection of external conductors		
3.3.1	Wiring terminals	No wiring terminal	N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Rated current (A), cord/cable type, cross-sectional area (mm ²)		N
3.3.5	Rated current (A), type and nominal thread diameter (mm)		N
3.3.6	Wiring terminals design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

3.4	Disconnection from the a.c. mains supply		
3.4.1	General requirement		P
3.4.2	Disconnect devices	Integral plug forming as part of the unit is considered as the disconnect device	P
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Single-phase equipment	Integral plug	P
3.4.7	Three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N

3.5	Interconnection of equipment		
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits	SELV circuits	P
3.5.3	ELV circuits as interconnection circuits		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

4	PHYSICAL REQUIREMENTS		
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4.1	Stability		
	Angle of 10°	Direct plug-in equipment	N
	Test: force (N)	Not a floor-standing unit	N
4.2	Mechanical strength		
4.2.1	General		P
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		N
4.2.6	Drop test		P
4.2.7	Stress relief	71 °C	P
4.2.8	Cathode ray tubes	No such device	N
	Picture tube separately certified		N
4.2.9	High pressure lamps	No such device	N
4.2.10	Wall or ceiling mounted equipment; force (N)		N

4.3	Design and construction		
4.3.1	Edges and corners	The outer surface of the EUT is smoothed	P
4.3.2	Handles and manual controls; force (N)	No such device	N
4.3.3	Adjustable controls	No such device	N
4.3.4	Securing of parts		N
4.3.5	Connection of plugs and sockets		P
4.3.6	Direct plug-in equipment		P
	Torque (Nm)	Measured max. 0,25 Nm	—
4.3.7	Heating elements in earthed equipment	No such device	N
4.3.8	Batteries	No such device	N
4.3.9	Oil and grease		N
4.3.10	Dust, powders, liquids and gases		N
4.3.11	Containers for liquids or gases	No such device	N
4.3.12	Flammable liquids		N
	Quantity of liquid (l)		N
	Flash point (°C)		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

4.3.13	Radiation; type of radiation		N
	Equipment using lasers		N

4.4	Protection against hazardous moving parts		
4.4.1	General	No such part	N
4.4.2	Protection in operator access areas		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N

4.5	Thermal requirements		
4.5.1	Temperature rises	(see appended table 4.5)	P
	Normal load condition per Annex L.....:		N
4.5.2	Resistance to abnormal heat	(see appended table 4.5.2)	P

4.6	Openings in enclosures		
4.6.1	Top and side openings	No opening is provided	N
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No opening is provided	N
	Construction of the bottom.....:		—
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature/time.....:		—

4.7	Resistance to fire		
4.7.1	Reducing the risk of ignition and spread of flame		P
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General		P
4.7.3.2	Materials for fire enclosures		P
4.7.3.3	Materials for components and other parts outside fire enclosures		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
4.7.3.4	Materials for components and other parts inside fire enclosures	(see appended table 1.5.1)	P
4.7.3.5	Materials for air filter assemblies		N
4.7.3.6	Materials used in high-voltage components		N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		
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5.1	Touch current and protective conductor current		
5.1.1	General		P
5.1.2	Equipment under test (EUT)		P
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument		P
5.1.5	Test procedure		N
5.1.6	Test measurements		P
	Test voltage (V)	264 V, 60 Hz	—
	Measured current (mA)	Measured max 0,0612 mA	—
	Max. allowed current (mA)	0,25 mA	—
5.1.7	Equipment with touch current exceeding 3.5 mA		N
5.1.8	Touch currents to and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network		N
	Test voltage (V)		—
	Measured current (mA)		—
	Max. allowed current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks.....		N

5.2	Electric strength		
5.2.1	General		P
5.2.2	Test procedure	(see appended table 5.2)	P

5.3	Abnormal operating and fault conditions		
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
5.3.3	Transformers	(see appended table 5.3 and Annex C)	P
5.3.4	Functional insulation	Methods a) and c)	P
5.3.5	Electromechanical components		N
5.3.6	Simulation of faults		P
5.3.7	Unattended equipment		N
5.3.8	Compliance criteria for abnormal operating and fault conditions		P

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

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

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

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Clause	Requirement - Test	Result	Verdict
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.1.1	Samples, material		—
	Wall thickness (mm).....		—
A.1.2	Conditioning of samples; temperature (°C).....		N
A.1.3	Mounting of samples		N
A.1.4	Test flame		N
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N
A.2.1	Samples, material		—
	Wall thickness (mm).....		—
A.2.6	Compliance criteria		N
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.3	High current arcing ignition test (see 4.7.3.2)		N
A.3.1	Samples, material		—
	Wall thickness (mm).....		—
A.3.5	Compliance criteria		N
	Sample 1 number of arcs to ignition (pcs)		—
	Sample 2 number of arcs to ignition (pcs)		—
	Sample 3 number of arcs to ignition (pcs)		—
	Sample 4 number of arcs to ignition (pcs)		—
	Sample 5 number of arcs to ignition (pcs)		—
A.4	Hot wire ignition test (see 4.7.3.2)		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
A.4.1	Samples, material		—
	Wall thickness (mm).....		—
A.4.5	Compliance criteria		N
	Sample 1 ignition time (s).....		—
	Sample 2 ignition time (s).....		—
	Sample 3 ignition time (s).....		—
	Sample 4 ignition time (s).....		—
	Sample 5 ignition time (s).....		—
A.5	Hot flaming oil test (see 4.6.2)		N
A.6	Flammability tests for classifying materials V-0, V-1 or V-2		N
A.6.1	Samples, material		—
	Wall thickness (mm).....		—
A.6.5	Compliance criteria		N
A.6.6	Permitted retest		N
A.7	Flammability test for classifying foamed materials HF-1, HF-2 or HFB		N
A.7.1	Sample, material		—
	Wall thickness (mm).....		—
A.7.4	Compliance criteria		N
A.7.5	Compliance criteria, HF-2		N
A.7.6	Compliance criteria, HF-1		N
A.7.7	Compliance criteria, HBF		N
A.7.8	Permitted retest, HF-1 or HF-2		N
A.7.9	Permitted retest, HBF		N
A.8	Flammability test for classifying materials HB		N
A.8.1	Samples, material		—
	Sample thickness (mm).....		—
A.8.2	Conditioning of samples; temperature (°C).....		N
A.8.4	Test procedure		N
A.8.5	Compliance criteria		N
A.8.6	Permitted retest		N
A.9	Flammability test for classifying materials 5V		N
A.9.1	Samples, material		—
	Sample thickness (mm).....		—
A.9.4	Test procedure, test bars		N
A.9.5	Test procedure, test plaques		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
A.9.6	Compliance criteria		N
A.9.7	Permitted retest		N
A.10	Stress relief conditioning (see 4.2.7)		P
	Temperature (°C)	71 °C	—

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N
B.1	General requirements		N
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for DC motors in secondary circuits		N
B.7	Locked-rotor overload test for DC motors in secondary circuits		N
B.7.1	Test procedure		N
B.7.2	Alternative test procedure; test time (h)		N
B.7.3	Electric strength test		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V)		—

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Clause	Requirement - Test	Result	Verdict

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	Position	Integral parts of equipment	—
	Manufacturer	Outstanding Electronics Manufacturer Co., Ltd.	—
	Type	AA-*****	—
	Rated values	See page 1	—
	Method of protection	A thermal-link is used for protection	—
C.1	Overload test	Secondary overloaded	P
C.2	Insulation		P
	Protection from displacement of windings	The end-turn of each windings is fixed by insulating tape	P

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

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13 and 4.5.1)		P
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		P
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N
G.1	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V).....:		N
G.3	Determination of telecommunication network transient voltage (V).....:		N
G.4	Determination of required withstand voltage (V).:		N
G.5	Measurement of transient levels (V).....:		N
G.6	Determination of minimum clearances.....:		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N
	Ionizing radiation		N
	Measured radiation (mR/h)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—

J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N
	Metal used		—

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

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
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment	Max. normal load.	P

IEC 60950			
Clause	Requirement - Test	Result	Verdict

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling signal		N
M.3.1.1	Frequency (f).....:		—
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
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V).....:		N

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
	Separate test report		N

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power systems		P
V.3	TT power systems		P
V.4	IT power systems		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict

1.5.1	TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Thermal link	Joint Force	M20	2A, 250V, 115°C	IEC 60691	TÜV, VDE
Alt.	Joint Force	M30	2A, 250V, 125°C	IEC 60691	TÜV, VDE
Alt.	Joint Force	M33	1A, 250V, 130°C	IEC 60691	TÜV, VDE
Alt.	Aupo	A2	2A, 250V, 115°C	IEC 60691	VDE
Alt.	Aupo	A3	2A, 250V, 125°C	IEC 60691	VDE
Alt.	Aupo	A4	2A, 250V, 130°C	IEC 60691	VDE
Alt.	Uchihashi Estec	S2	1A, 250V, 115°C	IEC 60691	VDE
Sec. current fuse (see the note)	Walter	TSD SIP	T5A, 250V, LBC	IEC 60127	VDE
Alt.	Conquer	UTE GST	T5A, 250V, LBC	IEC 60127	VDE
Alt.	Hollyland	5OT	T5A, 250V, LBC	IEC 60127	VDE
Insulating tape	Four Pillars	MY130	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Nitto Denko Corp	341K	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Jingjiang Yahua	WF PZ	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Talincap	127*#	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Chyun Yih	P2XXF(b).P2X X(b)	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Minnesota	1350-2 (b1)	130°C	Applicable part of IEC 60950	Tested in appliance
Magnetic wires	Wa Tai	UEW-2	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Wan Mon	UEW	130°C	Applicable part of IEC 60950	Tested in appliance

IEC 60950			
Clause	Requirement - Test	Result	Verdict

1.5.1 (cont.) TABLE: list of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Alt.	Tai I	UEW	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Daiichi Denko	UEW	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Prosperity	UEW	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Tongling Nonferrous	UEW	130°C	Applicable part of IEC 60950	Tested in appliance
Alt.	Wuxi Jufeng	UEW-130	130°C	Applicable part of IEC 60950	Tested in appliance
Primary lead wires	Lu Chiang	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Alt.	Just For You	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Alt.	Dongguan Apollo	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Alt.	Rei Hsing	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Alt.	Ta Heng	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Alt.	Shenzhen Dong Ju	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Alt.	Langxun	UL style 1617	600V, 105°C, VW-1, 22 AWG	Applicable part of IEC 60950	Tested in appliance
Output cord	various	UL style 2468	300V, 80°C, VW-1, min. 24AWG	Applicable part of IEC 60950	Tested in appliance
Plastic Material List					
Enclosure	GE plastics	SE-100	V-1, 80°C, min. 2,3mm thick	Applicable part of IEC 60950	Tested in appliance
Alt.	GE plastics	SE-100X	V-1, 80°C, min. 2,3mm thick	Applicable part of IEC 60950	Tested in appliance

IEC 60950			
Clause	Requirement - Test	Result	Verdict

1.5.1 (cont.)	TABLE: list of critical components					P
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
Alt.	GE plastics	PX9406P	V-0, 105°C, min. 2,3mm thick	Applicable part of IEC 60950	Tested in appliance	
Alt.	Chi Mei	PA-765A+	V-1, 80°C, min. 1,5mm thick	Applicable part of IEC 60950	Tested in appliance	
Alt.	Chi Mei	PA-766	V-0, 60°C, min. 1,5mm thick	Applicable part of IEC 60950	Tested in appliance	
Sleeve of plug	GE Plastic	SE-1	V-1, 105°C	Applicable part of IEC 60950	Tested in appliance	
Alt.	GE Plastic	SE-1X	V-1, 105°C	Applicable part of IEC 60950	Tested in appliance	
Bobbin	E I Dupont	101F	V-2, 130°C	Applicable part of IEC 60950	Tested in appliance	
Alt.	Basf Aktiengesell	A3K(a)	V-2, 125°C	Applicable part of IEC 60950	Tested in appliance	
Alt.	Shinkong Synthetic Fibers	PP4210, PP4220	V-2, 125°C	Applicable part of IEC 60950	Tested in appliance	
PVC tubing	Develop	DEV-300, DEV-600	Min. 300V, 105°C, VW-1	Applicable part of IEC 60950	Tested in appliance	
Heat shrinkable tubing	Raychem	RT-21	600V, 125°C, VW-1	Applicable part of IEC 60950	Tested in appliance	
Alt.	Sumitomo	Sumi-tube F2	600V, 105°C, VW-1	Applicable part of IEC 60950	Tested in appliance	
Alt.	Dongguan Liaobu Sanlian	SALIPT S-901	600V, 105°C, VW-1	Applicable part of IEC 60950	Tested in appliance	
Alt.	Shenzhen Woer	RSFR-x	600V, 125°C, VW-1	Applicable part of IEC 60950	Tested in appliance	

¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance

Note:

This current fuse is provided for models AA-062A**, AA-062A1**, AA-062A2**, AA-062A3**, AA-062A4**, AA-062A5**, AA-072A**, AA-072A1**, AA-072A2**, AA-072A3**, AA-072A4**, AA-072A5**, AA-082A**, AA-082A1**, AA-082A2**, AA-082A3**, AA-082A4**, AA-082A5**, AA-092A**, AA-092A1** and AA-092A2**.

IEC 60950			
Clause	Requirement - Test	Result	Verdict

1.6.2		TABLE: electrical data (in normal conditions)					P
fuse #	Irated (mA)	U (V)	P (W)	I (mA)	Input current (mA)	condition/status	
AA-062A5BN							
—	—	198V/50Hz	15,0	74,0	74,0	Maximum rated output load	
—	—	198V/60Hz	14,7	73,0	73,0	Maximum rated output load	
—	140	220V/50Hz	16,5	75,0	75,0	Maximum rated output load	
—	140	220V/60Hz	16,4	73,0	73,0	Maximum rated output load	
—	140	230V/50Hz	16,5	75,0	75,0	Maximum rated output load	
—	140	230V/60Hz	16,4	73,0	73,0	Maximum rated output load	
—	140	240V/50Hz	18,0	78,0	78,0	Maximum rated output load	
—	140	240V/60Hz	17,9	74,0	74,0	Maximum rated output load	
—	—	264V/50Hz	20,2	86,0	86,0	Maximum rated output load	
—	—	264V/60Hz	19,9	76,0	76,0	Maximum rated output load	
AA-082A5BN							
—	—	198V/50Hz	21,5	111,0	111,0	Maximum rated output load	
—	—	198V/60Hz	21,2	109,0	109,0	Maximum rated output load	
—	140	220V/50Hz	24,1	114,0	114,0	Maximum rated output load	
—	140	220V/60Hz	23,9	110,0	110,0	Maximum rated output load	
—	140	230V/50Hz	24,1	114,0	114,0	Maximum rated output load	
—	140	230V/60Hz	23,9	110,0	110,0	Maximum rated output load	
—	140	240V/50Hz	26,4	118,4	118,4	Maximum rated output load	
—	140	240V/60Hz	26,2	112,2	112,2	Maximum rated output load	
—	—	264V/50Hz	29,5	133,0	133,0	Maximum rated output load	
—	—	264V/60Hz	29,5	116,2	116,2	Maximum rated output load	

IEC 60950			
Clause	Requirement - Test	Result	Verdict

1.6.2 (cont.)		TABLE: electrical data (in normal conditions)					P
fuse #	Rated (mA)	U (V)	P (W)	I (mA)	Input current (mA)	condition/status	
AA-151A1BN							
—	—	198V/50Hz	21,5	111,0	111,0	Maximum rated output load	
—	—	198V/60Hz	21,2	109,0	109,0	Maximum rated output load	
—	140	220V/50Hz	24,1	114,0	114,0	Maximum rated output load	
—	140	220V/60Hz	23,9	110,0	110,0	Maximum rated output load	
—	140	230V/50Hz	24,1	114,0	114,0	Maximum rated output load	
—	140	230V/60Hz	23,9	110,0	110,0	Maximum rated output load	
—	140	240V/50Hz	26,4	118,4	118,4	Maximum rated output load	
—	140	240V/60Hz	26,2	112,2	112,2	Maximum rated output load	
—	—	264V/50Hz	29,5	133,0	133,0	Maximum rated output load	
—	—	264V/60Hz	29,5	116,2	116,2	Maximum rated output load	
AA-2450BN							
—	—	198V/50Hz	15,0	74,0	74,0	Maximum rated output load	
—	—	198V/60Hz	14,7	73,0	73,0	Maximum rated output load	
—	140	220V/50Hz	16,5	75,0	75,0	Maximum rated output load	
—	140	220V/60Hz	16,4	73,0	73,0	Maximum rated output load	
—	140	230V/50Hz	16,5	75,0	75,0	Maximum rated output load	
—	140	230V/60Hz	16,4	73,0	73,0	Maximum rated output load	
—	140	240V/50Hz	18,0	78,0	78,0	Maximum rated output load	
—	140	240V/60Hz	17,9	74,0	74,0	Maximum rated output load	
—	—	264V/50Hz	20,2	86,0	86,0	Maximum rated output load	
—	—	264V/60Hz	19,9	76,0	76,0	Maximum rated output load	
Remark:							
Tested voltage +10% is required by the client.							

IEC 60950						
Clause	Requirement - Test	Result			Verdict	
2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					P
clearance <i>cl</i> and creepage distance <i>dcr</i> at/of:	Up (V)	U r.m.s. (V)	required <i>cl</i> (mm)	<i>cl</i> (mm)	required <i>dcr</i> (mm)	<i>dcr</i> (mm)
Line and Neutral before thermal-link (FI)	339,4	240	1,5	9,7	2,5	9,7
Two ends of thermal-link (FI)	339,4	240	1,5	3,3	2,5	3,3
Primary winding and secondary winding (RI)	373,4	264	4,0	7,0	5,8	7,0
Primary to user accessible parts (RI)	373,4	264	4,0	11,6	5,8	14,0
Primary and core (SI)	373,4	264	2,0	5,6	2,9	5,6
Secondary and core (BI)	373,4	264	2,0	4,5	2,9	4,5
Note:						
1) FI: Functional insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation.						
2) The U r.m.s. is 264 V. (240 V + 24 V)						

2.10.5	TABLE: distance through insulation measurements				P
distance through insulation <i>di</i> at/of:	U r.m.s. (V)	test voltage (V)	required <i>di</i> (mm)	<i>di</i> (mm)	
Bobbin between primary and core (SI)	264	1500Vac	0,4 / 1layer	0,6	
Bobbin between primary and secondary windings (RI)	264	3000Vac	0,4 / 1layer	2,3	
Note:					
1) FI: Functional insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation.					
2) Core is considered as secondary circuits.					
3) The U r.m.s. is 264 V. (240 V + 24 V)					

IEC 60950					
Clause	Requirement - Test			Result	Verdict
4.5	TABLE: temperature rise measurements				P
	test voltage (V)		198	264	—
	t1 (°C)		45,7	45,2	—
	t2 (°C)		45,0	45,0	—
rise dT of part/at:		dT (K)		permitted dT (K)	
Primary lead wire		11,8	14,6	60 (105-45)	
Primary winding		21,1	25,6	60 (90-10-20, E)	
Secondary winding		20,9	24,8	60 (90-10-20, E)	
Core		22,1	27,4	60 (90-10-20, E)	
Output cord		16,6	20,1	35 (80-45)	
Internal enclosure		17,3	20,8	For stress relief test	
External enclosure		14,5	15,2	50 (70-20)	
temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	allowed dT (K)	insulation class
Primary winding at 198 V	135,1	148,6	28,2	75	E
Secondary winding at 198 V	0,168	0,186	26,9	75	E
Primary winding at 264 V	135,1	151,2	32,9	75	E
Secondary winding at 264 V	0,168	0,187	31,2	75	E
Note:					
Testing ambient temperature 45 °C is required by client.					
Test model: AA-062A5BN (case size: 73mm × 55.5 mm × 49 mm)					

IEC 60950					
Clause	Requirement - Test			Result	Verdict
4.5 (cont.)	TABLE: temperature rise measurements				P
	test voltage (V)	198	264	—	
	t1 (°C)	45,3	45,6	—	
	t2 (°C)	45,0	45,0	—	
rise dT of part/at:		dT (K)		permitted dT (K)	
Primary lead wire		18,9	21,3	60 (105-45)	
Primary winding		35,9	44,4	60 (90-10-20, E)	
Secondary winding		37,6	46,0	60 (90-10-20, E)	
Core		35,3	44,0	60 (90-10-20, E)	
Output cord		28,0	33,5	35 (80-45)	
Internal enclosure		29,5	36,4	For stress relief test	
External enclosure		13,0	17,2	50 (70-20)	
temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	allowed dT (K)	insulation class
Primary winding at 198 V	124,78	144,12	42,9	75	E
Secondary winding at 198 V	0,660	0,766	44,4	75	E
Primary winding at 264 V	124,78	147,30	50,2	75	E
Secondary winding at 264 V	0,660	0,784	52,3	75	E
Note:					
Testing ambient temperature 45 °C is required by client.					
Test model: AA-082A5BN (case size: 73mm × 55.5 mm × 49 mm)					

IEC 60950					
Clause	Requirement - Test			Result	Verdict
4.5 (cont.)	TABLE: temperature rise measurements				P
	test voltage (V)		198	264	—
	t1 (°C)		45,5	45,7	—
	t2 (°C)		45,0	45,0	—
rise dT of part/at:		dT (K)		permitted dT (K)	
Primary lead wire		15,6	17,3	60 (105-45)	
Primary winding		41,1	47,3	60 (90-10-20, E)	
Secondary winding		39,3	44,6	60 (90-10-20, E)	
Core		38,1	43,7	60 (90-10-20, E)	
Output cord		28,6	32,2	35 (80-45)	
Internal enclosure		30,4	34,3	For stress relief test	
External enclosure		19,0	20,3	50 (70-20)	
temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	allowed dT (K)	insulation class
Primary winding at 198 V	176,0	207,5	49,7	75	E
Secondary winding at 198 V	1,06	1,25	47,2	75	E
Primary winding at 264 V	176,0	211,8	56,7	75	E
Secondary winding at 264 V	1,06	1,26	52,6	75	E
Note:					
Testing ambient temperature 45 °C is required by client.					
Test model: AA-151A1BN (case size: 73mm × 55.5 mm × 49 mm)					

IEC 60950					
Clause	Requirement - Test			Result	Verdict
4.5 (cont.)	TABLE: temperature rise measurements				P
	test voltage (V)	198	264	—	
	t1 (°C)	46,0	45,9	—	
	t2 (°C)	45,0	45,0	—	
rise dT of part/at:		dT (K)		permitted dT (K)	
Primary lead wire		13,2	15,0	60 (105-45)	
Primary winding		31,5	36,2	60 (90-10-20, E)	
Secondary winding		34,3	38,6	60 (90-10-20, E)	
Core		29,5	33,9	60 (90-10-20, E)	
Output cord		18,3	20,8	35 (80-45)	
Internal enclosure		23,8	27,4	For stress relief test	
External enclosure		12,4	13,4	50 (70-20)	
temperature rise dT of winding:	R ₁ (Ω)	R ₂ (Ω)	dT (K)	allowed dT (K)	insulation class
Primary winding at 198 V	176,0	201,0	40,1	75	E
Secondary winding at 198 V	2,95	3,40	43,0	75	E
Primary winding at 264 V	176,0	204,1	44,9	75	E
Secondary winding at 264 V	2,95	3,44	46,6	75	E
Note:					
Testing ambient temperature 45 °C is required by client.					
Test model: AA-2450BN (case size: 73mm × 55.5 mm × 49 mm)					

IEC 60950			
Clause	Requirement - Test	Result	Verdict
4.5.2	TABLE: ball pressure test of thermoplastic parts		P
	allowed impression diameter (mm)	≤ 2 mm	—
part		test temperature (°C)	impression diameter (mm)
Enclosure		125	1,46
Bobbin		125	1,50

5.2	TABLE: electric strength tests and impulse tests		P
test voltage applied between:	test voltage (V)	breakdown Yes / No	
RI: L/N and secondary circuits	3000 Vac	No	
RI: L/N and enclosure covered with metal foil	3000 Vac	No	
SI: Transformer: primary and core	1500 Vac	No	
BI: Transformer: secondary and core	1500 Vac	No	
FI: Line and Neutral	1500 Vac	No	
supplementary information			
Note:			
1) FI: Functional insulation; BI: Basic insulation; SI: Supplementary insulation; RI: Reinforced insulation.			
2) Test voltage a.c. / d.c.			

IEC 60950			
Clause	Requirement - Test	Result	Verdict

5.3	TABLE: fault condition tests		P
	ambient temperature (°C)	25 °C	—
	model/type of power supply	AA-*****	—
	manufacturer of power supply	See page 1	—
	rated markings of power supply	See page 1	—

No.	component	fault	test voltage (V)	test time	fuse No.	Input current (A)	result
1	Output terminal (AA-062A5BN)	O/L	264	Steady state	—	0,69	Observation: Total test duration 7 hours. Damage: — Temp: 135,2°C Max. Voltage: 6,4 Vac
2	Output terminal (AA-062A5BN)	S	264	3 min.	—	0,76	Observation: Thermal fuse opened, no hazard. Damage: — Temp: 166,5°C Max. Voltage: —
3	Output terminal (AA-082A5BN)	O/L	264	Steady state	—	0,86	Observation: Total test duration 5 hours. Damage: — Temp: 134,4°C Max. Voltage: 8,59 Vac
4	Output terminal (AA-082A5BN)	S	264	3 min.	—	0,93	Observation: Thermal fuse opened, no hazard. Damage: — Temp: 176,2°C Max. Voltage: —
5	Output terminal (AA-151A1BN)	O/L	264	Steady state	—	0,48	Observation: Total test duration 6 hours. Damage: — Temp: 137,2°C Max. Voltage: 15,96 Vac
6	Output terminal (AA-151A1BN)	S	264	5 min.	—	0,6	Observation: Thermal fuse opened, no hazard. Damage: — Temp: 185,7°C Max. Voltage: —
7	Output terminal (AA-2450BN)	O/L	264	Steady state	—	0,2	Observation: Total test duration 6 hours. Damage: — Temp: 148,3°C Max. Voltage: 25,66 Vac
8	Output terminal (AA-2450BN)	S	264	10 min.	—	0,3	Observation: Thermal fuse opened, no hazard. Damage: — Temp: 208,2°C Max. Voltage: —

supplementary information
S: Short-circuited; **O:** Open-circuited; **O/L:** Overloaded
Observation: The operation condition of the EUT during the fault condition.
Damage: Which component (components) damaged during the fault condition test.
Temp: The maximum temperature of CPU.
Max. Voltage: the maximum accessible voltage during the fault condition.

IEC 60950			
Clause	Requirement - Test	Result	Verdict
A.6.5	TABLE: flammability test for classifying materials V-0, V-1 or V-2		N
sample No. / ref.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$	
1/A			
2/A			
3/A			
4/A			
5/A			
6/B			
7/B			
8/B			
9/B			
10/B			
supplementary information:			
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.			
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.			

A.6.6	TABLE: flammability re-test for classifying materials V-0, V-1 or V-2		N
sample No.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$	
11			
12			
13			
14			
15			
supplementary information:			
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			

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Clause	Requirement - Test			Result	Verdict
A.7.4, A.7.5, A.7.6 and A.7.7	TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF				N
sample No. / ref.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)	
1/A					
2/A					
3/A					
4/A					
5/A					
6/B					
7/B					
8/B					
9/B					
10/B					
supplementary information:					
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.					
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.					

A.7.8	TABLE: flammability re-test for classifying foam materials HF-1 or HF-2				N
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment	
11					
12					
13					
14					
15					
supplementary information:					

IEC 60950					
Clause	Requirement - Test			Result	Verdict
A.7.9	TABLE: flammability re-test for classifying foam materials HBF				N
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)	
11					
12					
13					
14					
15					
supplementary information:					

A.8.5			TABLE: flammability test for classifying materials HB		N
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)			
1					
2					
3					
supplementary information:					

A.8.6			TABLE: flammability re-test for classifying materials HB		N
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)			
4					
5					
6					
supplementary information:					

IEC 60950					
Clause	Requirement - Test			Result	Verdict
A.9.6	TABLE: flammability test for classifying materials 5V				N
sample	test bars		test plaques		
No./ref.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
1/A			A		
2/A			B		
3/A			C		
4/A			D		
5/A			—	—	—
6/B			A		
7/B			B		
8/B			C		
9/B			D		
10/B			—	—	—
supplementary information:					
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.					
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.					

A.9.7	TABLE: flammability re-test for classifying materials 5V				N
sample	test bars		test plaques		
No.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
11			A		
12			B		
13			C		
14			D		
15			—	—	—
supplementary information:					

IEC 60950			
Clause	Requirement - Test	Result	Verdict

<p>IEC 60950, 3rd ed.</p> <p>GROUP DIFFERENCES, NATIONAL DEVIATIONS AND SPECIAL NATIONAL CONDITIONS IN THE CENELEC COUNTRIES</p> <p>S = Special National Condition</p> <p>D = National Deviation</p> <p>C = CENELEC Common Modification</p> <p>F = other information</p>			
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	C: Delete all the "country" notes that appear on the following pages of the reference document (IEC 60950:1999): 85, 91, 99, 103, 117, 119, 123, 125, 149, 171, 213, 215, 219, 251, 283, 325, 327, 331, 333 and 407.		P
1.2.4.1	S (DK): In Denmark, certain types of Class I appliances (see subclause 3.2.1) may be provided with a plug not establishing earthing continuity when inserted into Danish socket-outlets.		N
1.5.1	S (CH): Switzerland (Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury) Add the following: NOTE: in Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.		N
	S (SE): Add the following: NOTE: In Sweden switches containing mercury such as thermostats, relays and level controllers are not allowed.		N
1.5.8	S (NO): In Norway, due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V).		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
1.7.2	<p>S (DK): Denmark (Heavy Current Regulations)</p> <p>Supply cords of CLASS I EQUIPMENT, which are delivered without a plug must be provided with a visible tag with the following text:</p> <p>"Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket</p> <p>(IEC 60417, No. 5019 eller IEC 60417, No. 5017)."</p> <p>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:</p> <p>"For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."</p>		N
	<p>S (NO): In Norway, CLASS I PLUGGABLE EQUIPMENT A intended for connection to other equipment or a communication network shall, if safety relies on connection to protective earth, require a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p>		N
	<p>"Apparatet må kun tilkoples jordet stikkontakt" or</p>		N
	<p>"Jordet stikkontakt skal benyttes når apparatet tilkoples datanett".</p>		N
	<p>S (SE): In Sweden, if the separation between the mains and SELV terminal relies upon connection to the safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet.</p> <p>The marking text shall be in Swedish and as follows:</p> <p>"Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk."</p>		N
1.7.5	<p>D (DK): Denmark (Heavy Current Regulations)</p> <p>CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.</p>		P
	<p>S (DK): In Denmark, 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.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
1.7.12	<p>D (DE): Germany (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 Gerätesicherheitsgesetzes" [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)</p> <p>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.</p> <p>NOTE Of this requirement, rules for use even only by service personnel are not exempted.</p>		N
1.7.15	<p>D (CH): Switzerland (Ordinance on environmentally hazardous substances SR 814.013)</p> <p>Annex 4.10 of SR 814.013 applies for batteries.</p>	No lithium battery used in the unit.	N
	F (ALL): warning texts for lithium batteries.		N
	Languages.....:		—
2.2.4	S (NO): In Norway, requirements according to this annex, sub-clauses 1.7.2 and 6.1.2.1 apply.		N
2.3.2	S (NO): In Norway, requirements according to this annex, sub-clause 6.1.2.1 apply.		N
2.3.3	S (NO): In Norway, requirements according to this annex, sub-clause 6.1.2.1 apply.		N
2.3.4	S (NO): In Norway, requirements according to this annex, sub-clauses 1.7.2 and 6.1.2.1 apply.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
2.7.1	<p>C: Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short circuits and earth faults in primary circuits, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b), and c):</p> <p>a) Except as detailed in b) and c), protective devices necessary to comply with the requirements of subclause 5.3 shall be included as parts of the equipment.</p> <p>b) For components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short circuit and earth fault protection may be provided by protective devices in the building installation.</p> <p>c) It is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instruction.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket-outlet.</p>	Replaced	P
2.7.2	C: This subclause has been declared "void".		N
2.10.3.1	S (NO): In Norway, due to the IT power distribution system used (see annex V, figure 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.		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
3.2.1	<p>S (CH): In Switzerland, 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 dimensions sheets:</p> <p>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</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2:1998 Plug Type 25 3L+N+PE 230/400 V, 16 A 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</p>		N
	<p>S (DK): In Denmark, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with Standard Sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 10 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations Section 107-2-D1 or EN 60309-2.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
	<p>S (ES): In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts, or which are intended to be used locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N
	<p>S (GB): In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a "standard plug" in accordance with Statutory Instrument 1768:1994 – The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE: "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N
	<p>S (IE): In Ireland, 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.</p>		N
3.2.3	C: Delete NOTE 1, and in table 3A delete the conduit sizes in parentheses.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
3.2.5	<p>C: Replace</p> <p>"60245 IEC 53" by "H05 RR-F"</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F"</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2"</p> <p>In table 3B, replace the first four lines by the following:</p> <p>I Up to and including 6 I 0,75¹⁾ I</p> <p>I Over 6 up to and including 10 I (0,75)²⁾ 1,0 I</p> <p>I Over 10 up to and including 16 I (1,0)³⁾ 1,5 I</p> <p>In the Conditions applicable to table 3B, delete the words "in some countries" in condition ¹⁾.</p> <p>In NOTE 1, delete the second sentence.</p>		N
	<p>S (GB): In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with rated current over 10 A and up to and including 13 A.</p>		N
3.3.4	<p>C: In table 3D, delete the fourth line – conductor sizes for 10 to 13 A, and replace with the following:</p> <p>I Over 10 up to and including 16 I 1,5 to 2,5 I 1,5 to 4 I</p> <p>Delete the fifth line – conductor sizes for 13 to 16 A.</p>		N
	<p>S (GB): In the United Kingdom, 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:</p> <p>- 1,25 mm² to 1,5 mm² nominal cross-sectional area.</p>		N
4.3.6	<p>S (GB): In the United Kingdom, 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.</p>		P
	<p>S (IE): In Ireland, 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.</p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
4.3.13	<p>C: Replace the second compliance paragraph by: For equipment using LEDs or lasers, compliance is checked according to EN 60825-1.</p> <p>NOTE 1 – If equipment falling within the scope of EN 60950 is inherently a Class 1 laser product, i.e. it contains no embedded laser or LED of a higher class number, then a laser warning label or other laser warning statement is not required (see 1.1 of EN 60825-1).</p> <p>Renumber the NOTE below the third compliance paragraph 2S NOTE 2.</p>		N
6.1.2.1	<p>S (NO, SE): Add the following text between the first and second paragraph:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - 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. <p>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:</p> <ul style="list-style-type: none"> - 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 - is subjected to ROUTINE TETSING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p>		N
6.1.2.2	<p>S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B only.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex G.2	S (NO): In Norway, due to the IT power distribution system used (see annex V, figure 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.		P
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 μ Sv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the NOTE as follows: NOTE – These values appear in Directive 96/29/Euratom.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex H	<p>S (DE): Germany (Regulation on protection on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4)</p> <p>a) A licence is required by those who operate an X-ray emission source.</p> <p>b) A licence in accordance with clause 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if</p> <ol style="list-style-type: none"> 1) the local does rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that <ol style="list-style-type: none"> i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. <p>c) A licence in accordance with clause 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <ol style="list-style-type: none"> 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 <ol style="list-style-type: none"> i) X-rays are generated, ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local does rate in accordance with the type approval in not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. 		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex H (cont.)	<p>d) Furthermore, a licence in accordance with clause 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if</p> <ol style="list-style-type: none"> 1) the X-ray 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 generate are adequately screened by the intrinsically safe CRT. 		N
Annex P	<p>Replace the text of this annex by: See annex ZA.</p>		P
Annex Q	<p>Add the following notes for the standards indicated:</p> <p>IEC 60127 series NOTE: Harmonized as EN 60127 series (not modified)</p> <p>IEC 60269-2-1 NOTE: Harmonized as HD 630.2.1 S2:1997 (modified)</p> <p>IEC 60529 NOTE: Harmonized as EN 60529:1991 (not modified)</p> <p>IEC 61032 NOTE: Harmonized as EN 61032:1998 (not modified)</p>		P
Annex ZA (normative)	<p>Normative references to international publications with their relevant European publications</p> <p>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 referred to applies (including amendments).</p> <p>NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.</p>		P

IEC 60950						
Clause	Requirement - Test		Result		Verdict	
	<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>	
	IEC 60050-151	1978	International Electrotechnical Vocabulary Chapter 151: Electrical and magnetic devices	—	—	
	IEC 60050-195	1998	International Electrotechnical Vocabulary Chapter 195: Earthing and protection against electric shock	—	—	
	IEC 60065 (mod)	1985	Safety requirements for mains operated electronic and related apparatus for household and similar general use	EN 60065 ¹ + corr. Nov.	1993 1993	
	IEC 60073	1996	Basic and safety principles for man-machine interface, marking and identification – Coding principles for indicating devices and actuators	EN 60073	1996	
	IEC 60085	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990	
	IEC 60112	1979	Methods for determining the comparative and the proof tracking indicates of solid insulating materials under moist conditions	HD 214 S2	1980	
	IEC 60227 (mod)	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V	HD 21 ²	Series	
	IEC 60245 (mod)	Series	Rubber insulated cables of rated voltages up to and including 450/750V	HD 22 ³	Series	
	IEC 60309	Series	Plugs, socket-outlet and couplers for industrial purposes	EN 60309	Series	
	IEC 60320 (mod)	Series	Appliance couplers for household and similar general purposes	EN 60320	Series	
	IEC 60364-3 (mod)	1993	Electrical Installation of buildings – Part 3: Assessment of general characteristics	HD 384-3 S2	1995	
	IEC 60364-4-41 (mod)	1992	Electrical Installation of buildings – Part 4: Protection for safety – Chapter 41: Protection against electric shock	HD 384-4-41 S2	1996	
	IEC 60384-14	1993	Fixed capacitors for use in electronic equipment – Sectional specification: Fixed capacitors for radio interference suppression. Selection of methods of test and general requirements	—	—	
	IEC 60417-1	1998	Graphical symbols for use on equipment Part 1: Overview and application	EN 60417-1	1999	

IEC 60950						
Clause	Requirement - Test			Result		Verdict
(cont.)	IEC 60417-2	1998	Graphical symbols for use on equipment	EN 60417-2	1999	
			Part 2: Symbol originals			
	IEC 60664-1 (mod)	1992	Insulation co-ordination for equipment within lowvoltage systems – Part 1: Principles, requirements and tests	HD 625.1 S1 + corr. Nov.	1996 1996	
	IEC 60695-2-1/1 + corr. May	1994 1995	Fire hazard testing – Part 2: Test methods – Section 1/sheet 1: Glow-wire end-product test and guidance	EN 60695-2-2/1	1996	
	IEC 60695-2-2	1991	Fire hazard testing – Part 2: Test methods – Section 2: Needle-flame test	EN 60695-2-2	1994	
	IEC 60695-10-2	1995	Fire hazard testing – Part 10: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Section 2: Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test.	—	—	
	IEC 60730-1 (mod)	1993	Automatic electrical controls for household and similar use – Part 1: General requirements	EN 60730-1	1995	
	IEC 60825-1	1993	Safety of Laser products – Part 1: Equipment classification, requirements and use guide	EN 60825-1 + corr. Feb. + A11	1994 1995 1996	
	IEC 60851-3	1996	Winding wires – Test methods – Part 3: Mechanical properties	EN 60851-3	1996	
	IEC 60851-5	1996	Winding wires – Test methods – Part 5: Electrical properties	EN 60851-5	1996	
	IEC 60851-6	1996	Methods of test for winding wires – Part 6: Thermal properties	EN 60851-6	1996	
	IEC 60885-1	1987	Electrical test methods for electric cables – Part 1: Electrical tests for cables, cords and wires up to and including 450/750V	—	—	
	IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1990	
	IEC 61058-1	1996	Switches for appliances – Part 1: General requirements	—	—	
	ISO 261	1973	ISO general purpose metric screw threads – General plan	—	—	
	ISO 262	1973	ISO general purpose metric screw threads – Selected sizes for screws, bolts and nuts	—	—	

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Clause	Requirement - Test		Result	Verdict	
(cont.)	ISO 3864	1984	Safety colours and safety signs	—	—
	ISO 4046	1978	Paper, board, pulp and related terms – Vocabulary	—	—
	ISO 7000	1989	Graphical symbols for use on equipment – Index and synopsis	—	—
	ITU-T Recommendation K.17:1988, Tests on power-fed repeaters using solid-state devices in order to check the arrangements for protection from external interference.				
	ITU-T Recommendation K.21:1996, Resistibility of subscribers' terminals to overvoltages and overcurrents.				
<p>¹ EN 60065:1993 is superseded by EN 60065:1998 + corrigendum June 1999, which is based on IEC 60065:1998, mod.</p> <p>² The HD 21 series is related to, but not directly equivalent with the IEC 60227 series.</p> <p>³ The HD 22 series is related to, but not directly equivalent with the IEC 60245 series.</p>					

IEC 60950			
Clause	Requirement - Test	Result	Verdict
National differences Australia (AU) IEC 60950, 3rd ed.			

	ZZ.1 Introduction This Annex sets out variations between this standard and IEC 60950:1999. These variations indicate national variations for purpose of the IECEE CB Scheme and will be published in the IECEE CB Bulletin. These variations are indicated within the body of the Standard by marginal bars.		P
	ZZ.2 Variations The variations are as follows: CLAUSE		P
1.2	Between the definitions for " frequency, rated " and " insulation, basic " <i>insert</i> the follows variation: Ignition, source potential		P
1.2.12.10	After definition 1.2.12.10, <i>add</i> the following variation. 1.12.12.11 POTENTIAL IGNITION SOURCE Possible fault such as a faulty contact or interruption in an electrical connection, including a conductive pattern on printed boards, which can start a fire if, under normal operating conditions, the open circuit voltage exceeds 50 V (peak) a.c. or d.c. and the product of this open circuit voltage and the measured current through this possible fault exceeds 15 VA.		P
1.5.1	<i>Add</i> the following variation to the first paragraph: " or the relevant Australian/ New Zealand Standard "		P
1.5.2	<i>Add</i> the following variation after the words " IEC component standard " in the first and third dash items: " or the relevant Australian/ New Zealand Standard "		P
1.6.1	<i>Add</i> the following variation: AC power distribution systems classified as TT or IT is not allowed.		P

IEC 60950																																																																			
Clause	Requirement - Test	Result	Verdict																																																																
1.7.12	<p>Add the following variation to the first paragraph:</p> <p>All the safety instructions and safety markings shall be in English.</p>		P																																																																
	<p>Table 3B</p> <p>Replace Table 3B in 3.2.5 with the following variation:</p> <p style="text-align: center;">Table 3B – Sizes of conductors</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="3" style="text-align: center;">RATED CURRENT OF EQUIPMENT A</th> <th colspan="2" style="text-align: center;">Minimum conductor sizes</th> </tr> <tr> <th style="text-align: center;">Nominal cross-section area</th> <th style="text-align: center;">AWG or Kcmil (cross-section area in mm²)</th> </tr> <tr> <th style="text-align: center;">mm²</th> <th style="text-align: center;">See note 1</th> </tr> </thead> <tbody> <tr> <td>Over 0.2 up to and including 3</td> <td style="text-align: center;">0,5 ¹⁾</td> <td style="text-align: center;">18 (0,8)</td> </tr> <tr> <td>Over 3 up to and including 6</td> <td style="text-align: center;">0.75</td> <td style="text-align: center;">16 (1,3)</td> </tr> <tr> <td>Over 6 up to and including 10</td> <td style="text-align: center;">(0,75) 1,00</td> <td style="text-align: center;">16 (1,3)</td> </tr> <tr> <td>Over 10 up to and including 16</td> <td style="text-align: center;">(1,0) 1,5</td> <td style="text-align: center;">14 (2)</td> </tr> <tr> <td>Over 16 up to and including 25</td> <td style="text-align: center;">2,5</td> <td style="text-align: center;">12 (3)</td> </tr> <tr> <td>Over 25 up to and including 32</td> <td style="text-align: center;">4</td> <td style="text-align: center;">10 (5)</td> </tr> <tr> <td>Over 32 up to and including 40</td> <td style="text-align: center;">6</td> <td style="text-align: center;">8 (8)</td> </tr> <tr> <td>Over 40 up to and including 63</td> <td style="text-align: center;">10</td> <td style="text-align: center;">6 (13)</td> </tr> <tr> <td>Over 63 up to and including 80</td> <td style="text-align: center;">16</td> <td style="text-align: center;">4 (21)</td> </tr> <tr> <td>Over 80 up to and including 100</td> <td style="text-align: center;">25</td> <td style="text-align: center;">2 (33)</td> </tr> <tr> <td>Over 100 up to and including 125</td> <td style="text-align: center;">35</td> <td style="text-align: center;">1 (42)</td> </tr> <tr> <td>Over 125 up to and including 160</td> <td style="text-align: center;">50</td> <td style="text-align: center;">0 (53)</td> </tr> <tr> <td>Over 160 up to and including 190</td> <td style="text-align: center;">70</td> <td style="text-align: center;">000 (85)</td> </tr> <tr> <td>Over 190 up to and including 230</td> <td style="text-align: center;">95</td> <td style="text-align: center;">0000 (107)</td> </tr> <tr> <td>Over 230 up to and including 260</td> <td style="text-align: center;">120</td> <td style="text-align: center;">250 kcmil (126)</td> </tr> <tr> <td>Over 260 up to and including 300</td> <td style="text-align: center;">150</td> <td style="text-align: center;">300 kcmil (152)</td> </tr> <tr> <td>Over 300 up to and including 340</td> <td style="text-align: center;">185</td> <td style="text-align: center;">400 kcmil (202)</td> </tr> <tr> <td>Over 340 up to and including 400</td> <td style="text-align: center;">240</td> <td style="text-align: center;">500 kcmil (253)</td> </tr> <tr> <td>Over 400 up to and including</td> <td style="text-align: center;">300</td> <td style="text-align: center;">600 kcmil (304)</td> </tr> </tbody> </table> <p>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 the 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 Note 2 to table 2.17 of AS/NZS 3191).</p> <p>NOTE 1 – AWG and Kcmil sizes are provided for information only. The associated cross-sectional areas, in square brackets, have been rounded to show significant figures only. AWG refers to the American Wire Gauge and term "cmil" refers to circular mils where one circular mil is equal to the area of a circle having a diameter of one mil (one thousandth of an inch). These items are commonly used to designate wire sizes in North America.</p>	RATED CURRENT OF EQUIPMENT A	Minimum conductor sizes		Nominal cross-section area	AWG or Kcmil (cross-section area in mm ²)	mm ²	See note 1	Over 0.2 up to and including 3	0,5 ¹⁾	18 (0,8)	Over 3 up to and including 6	0.75	16 (1,3)	Over 6 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)	Over 16 up to and including 25	2,5	12 (3)	Over 25 up to and including 32	4	10 (5)	Over 32 up to and including 40	6	8 (8)	Over 40 up to and including 63	10	6 (13)	Over 63 up to and including 80	16	4 (21)	Over 80 up to and including 100	25	2 (33)	Over 100 up to and including 125	35	1 (42)	Over 125 up to and including 160	50	0 (53)	Over 160 up to and including 190	70	000 (85)	Over 190 up to and including 230	95	0000 (107)	Over 230 up to and including 260	120	250 kcmil (126)	Over 260 up to and including 300	150	300 kcmil (152)	Over 300 up to and including 340	185	400 kcmil (202)	Over 340 up to and including 400	240	500 kcmil (253)	Over 400 up to and including	300	600 kcmil (304)		N
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IEC 60950			
Clause	Requirement - Test	Result	Verdict
4.3.6	<p>Replace the third paragraph with the following variation:</p> <p>Equipment having pins for insertion into socket-outlets shall comply with 2.8.1, 2.8.4, 2.8.10, 2.12.6 and 2.14.6 of AS/NZS 3112, using the 10 A gauge in Appendix A of AS/NZS 3112. In addition, the equipment is inserted, as in normal use, into a socket-outlet capable of accepting a 10 A plug complying with figure 2.1(a) of AS/NZS 3112. The socket-outlet and in the plane of the lower intersection of the centre-lines of the contact apertures.</p> <p>NOTE:</p> <p>The above clause references to AS/NZS 3112 apply to a previous edition of AS/NZS 3112.</p> <p>The clause references in AS/NZS 3112:2000 are:</p> <p>Clause 2.8.1 → Clause 2.8.1 Clause 2.8.4 → Clause 2.8.4 Clause 2.10 → Clause 2.10 Clause 2.12.6 → Clause 2.12.6 Clause 2.14.6 → Clause 2.14.6 Clause 2.1 → Clause 2.1 Appendix A → Appendix A</p> <p>The additional torque to be applied to maintain the engagement face in the vertical plane shall not exceed 0,25 Nm.</p>		N
4.3.13	<p>After the third paragraph <i>insert</i> the following variation:</p> <p>NOTE: For the purpose of this standard compliance with AS/NZS 2211.1 is deemed to be compliance with the IEC 60825.1.</p>		N
4.7	<p>Add After Clause 4.7 the following variation:</p> <p>For alternative test refer to Annex YY.</p>		N
6.2.2	<p>Replace the first paragraph with the following variation:</p> <p>In Australia (this variation does not apply in New Zealand), compliance with 6.2.2 is checked by the tests both 6.2.2.1 and 6.2.2.2.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
6.2.2.1	<p>In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to 10 impulses of alternating polarity, using the impulse test generator of annex N for 10/700 μs impulses. The interval between successive impulses is 60 s and the initial voltage, U_c, is:</p> <ul style="list-style-type: none"> - for 6.2.1 a): 7,0 kV for hand-held telephones and for headsets and 2,5 kV for other equipment; and - for 6.2.1 b) and 6.2.1 c) 1,5 kV <p>NOTE 1 – The 7 kV impulse simulates lighting surges on typical rural and semi-rural network lines.</p> <p>NOTE 2 – 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.</p>		N
6.2.2.2	<p><i>Replace</i> the second paragraph of Clause 6.2.2.2 with the following variation:</p> <p>In Australia (this variation does not apply in New Zealand), the electrical separation is subjected to an electric strength test according to 5.2.2.</p> <p>The a.c. test voltage is:</p> <ul style="list-style-type: none"> - for 6.2.1 a) 3 kV, and - for 6.2.1 b) and 6.2.1 c) 1,5 kV <p>NOTE 1 – Where there are capacitors across the insulation under test, it is recommended that d.c. test voltage are used.</p> <p>NOTE 2 – The 3 kV and 1,5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex P	<p>Replace the marginally barred normative references with the following:</p> <p>AS 1852.151 – 1998, <i>International Electrotechnical Vocabulary – Part 151: Electrical and magnetic devices (indicates to IEC 60050-151)</i></p> <p>AS/NZS 60065: 2000, <i>Safety requirements for Mains operated electronic and related apparatus for household and similar general use</i></p> <p>AS/NZS 2768 – 1985, <i>Electrical insulating materials – Evaluation and classification based on thermal endurance</i></p> <p>AS/NZS 4695.112:1996, <i>Fire hazard testing of electrotechnical products Part 112: Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions (identical to IEC 60112:1979)</i></p> <p>AS/NZS 3109.1:1996, <i>Approval and test specification – Appliance couplers for household and similar general purposes Part 1: General requirements</i></p> <p>AS/NZS 4695.2.11:1996, <i>Fire hazard testing of electrotechnical products – Part 2.11: test methods – Glow-wire end product test and guidance</i></p> <p>AS/NZS 4695.2.2:1996, <i>Fire hazard testing of electrotechnical products – Part 2.2: test methods – Needle-flame test</i></p> <p>AS/NZS 4695.10.2:1997, <i>Fire hazard testing of electrotechnical products – Part 10.2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test (identical to IEC60695-10-2: 1995)</i></p> <p>AS/NZS 2211.1:1997, <i>Laser safety, Part 1: Equipment classification, requirements and user's guide.</i></p> <p>NOTE: For the purpose of this standard with AS/NZS 2211.1 is deemed to be compliance IEC 60825.1.</p> <p>AS 1721 – 1985, <i>General purpose screw metric threads</i></p> <p>AS.1721 – 1985, <i>General purpose metric screw threads</i></p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex Q	<p>Replace the marginally barred informative references with the following:</p> <p>AS 2005.21.1 – 1990, <i>Low voltage fuses – Fuses enclosed fuse-links</i> <i>Part 21.1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Standardized fuse systems – Fuses with fuse-links with blade contacts</i></p> <p>AS 3859 – 1991, <i>Effects of current passing through the human body (identical to IEC 60479-1:1984)</i></p> <p>AS 1939 – 1990, <i>Degrees of protection provided by the enclosures for electrical equipment (IP code) (identical to IEC 60529:1989)</i></p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex YY (normative)	<p>Resistance to fire</p> <p>YY.1 Parts of non-metallic material shall be resistant to ignition and spread of fire.</p> <p>This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following:</p> <p>(a) Components that are contained in an enclosure having a flammability category of FV-0 according to AS/NZS 4695.707 and having openings only for the connecting wires filling the openings completely, and for the ventilation not exceed 1 mm in width regardless of the length.</p> <p>(b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> - 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 mm³, 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. <p>NOTE – In considering how to minimize propagation of fire and what " small parts " are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another.</p> <p>Compliance us checked by tests of YY.1.1. and YY.1.2.</p> <p>For the base material of printed boards, compliance is checked by the test of YY.1.3.</p> <p>The tests are carried out on parts of non-metallic material, which have been removed from the apparatus. When the glow-wire test is carried out, they are placed in the same orientation, as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
YY.1.1	<p>Parts of non-metallic material are subjected to glow-wire test of AS/NZS 4695.2.11, which is carried out at 550 °C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test is 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.</p>		N
YY.1.2	<p>Parts of insulating material supporting POTENTIAL IGNITION SOURCES are subject to the glow-wire test according to AS/NZS 4695.2.11, which is carried out at 750 °C.</p> <p>The test is also carried out on other parts of insulating material, which are within a distance of 3 mm of the connection.</p> <p>NOTE – Contacts in components such as switch contacts are considered to be connections.</p> <p>The test is not applicable to parts supporting welded connections;</p> <p>For parts, which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm are subjected to the needle-flame test. However, parts shielded by a barrier, which meets the needle-flame test, are not tested.</p> <p>The needle-flame test is made accordance with AS/NZS 4695.2.2 with the following modifications:</p> <p>5 Severities</p> <p><i>Replacement:</i></p> <p>The duration of application of the test is 30 s ± 1 s.</p> <p>8 Test procedure</p> <p><i>8.2 Modification:</i></p> <p>The specimen is arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.</p> <p><i>8.4 Modification:</i></p> <p>The first paragraph does not apply.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
YY.1.2 (cont.)	<p><i>Addition:</i></p> <p>If possible, the flame is applied at least 10 mm from a corner.</p> <p><i>8.5 Modification:</i></p> <p>The test is 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.</p> <p>10 Evaluation of test results</p> <p>The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</p> <p>The needle-flame test is not carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10 provided that the sample tested was not thicker than the relevant part.</p>		N
YY.1.3	<p>If parts, other than enclosures, do not withstand to glow-wire tests of YY.1.2, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in YY.1.2 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 YY.1.2. Parts shielded by a separate barrier, which meets the needle-flame test, are not tested.</p> <p>NOTE – If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirement of Annex YY without the need for consequential testing.</p> <p>NOTE – If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirement of Annex YY without the need for consequential testing.</p> <p>NOTE – Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting in contact with or in close proximity to connections.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
YY.2	<p>The base material of printed boards is subjected to needle-flame test of Clause YY.1.2. 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 from a POTENTIAL IGNITION SOURCE.</p> <p>The test is not carried out if fire –</p> <ul style="list-style-type: none"> - Printed board does not carry any POTENTIAL IGNITION SOURCE; - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c under normal operating conditions, is of flammability category FV-1 or better according to AS/NZS 4695.707, or the printed boards are protected by an enclosure meeting the flammability category FV-0 according to AS/NZS 4695.707, or made of metal, having openings only for connecting wires which fill the openings completely, or - Base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c under normal operating conditions, and base material printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category FV-0 according to AS/NZS 4695.707 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. <p>Compliance is determined using the smallest thickness of the material.</p> <p>NOTE – Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
National differences Canada (CA) IEC 60950, 3rd ed.			

	<p>Canada and the United States of America have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950/UL 60950, Third Edition, based on IEC 60950, Third Edition. This standard may be used for product certification immediately, however, the previous version of the standard may also be used until April 1, 2003.</p> <p><i>Note: The previous version is CAN/CSA C22.2 No. 950-95/UL 1950-1997, Third Edition, based on IEC 60950, 2nd Edition including Amendments 1, 2, 3 and 4. Refer to the "IEC 60950, 2nd Edition + Amds 1 2, 3 & 4, CA" section of this bulletin for the national differences in this version of the standard.</i></p> <p>The following is a summary of the key national differences from IEC 60950, 3rd Edition. The standard (CAN/CSA C22.2 No. 60950/UL 60950, Third Edition) should be consulted for farther details on the national differences summarized below.</p> <p>SPECIAL NATIONAL CONDITIONS</p> <p>Those requirements are identified as Special National Conditions since they are directly related to the Canadian Electrical code (CEC), Part 1 and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and other building installations in Canada.</p> <p>Notes:</p> <ul style="list-style-type: none"> • "CEC" denotes Canadian Electrical Code. • "NEC" denotes US National Electrical Code. • Due to common Canadian and US national differences, products that are in compliance with the Canadian national differences are also considered in compliance with the US national differences. 		P
1.1.1	<p>All equipment design and installations are required to be in accordance with the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and with National Electrical Code (NEC), ANSI/NFPA 70, and, unless marked or otherwise identified, the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.</p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
1.5.5	<p>For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the CEC/NEC.</p> <p>For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies which are not types specified in the CEC/NEC are required to have special construction features and identification markings.</p>		N
1.7.1	<p>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.</p> <p>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 range that extends into the "Normal Operating Conditions."</p>		N
2.5	<p>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.</p>		N
2.7.1	<p>Suitable CEC/NEC branch circuit protection is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch circuit protection is not suitable.</p> <p>Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection.</p>		N
3.2	<p>Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the CEC/NEC.</p>		N
3.2.1	<p>Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.</p>		N
3.2.3	<p>Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.</p>		N
3.2.5	<p>Power supply cords are required to be no longer than 4.5 m in length.</p> <p>Flexible power supply cords are required to be compatible with Tables 11 & 12 of the CEC, and Article 400 of the NEC.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
3.2.9	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CAN/CSA C22.2 No. 0.		N
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N
3.3.4	Terminals for permanent wiring, including protective earthing terminals are required to be suitable for Canadian/U.S. wire gauge sizes, rated 125 percent of the equipment rating, and specially marked when specified (1.7.7).		N
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a nominal voltage rating greater than 120 V or is rated more than 1/3 hp (locked rotor current over 43 A).		N
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.		N
3.4.10	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.		N
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and/or Canadian Radiation Emitting Devices Act, REDR C1370, as applicable.		N
4.7.1	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² 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.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex H	Equipment that produces ionizing radiation is required to comply with Code of Federal Regulations, 21 CFR 1020 and/or Canadian Radiation Emitting Devices Act, REDR C1370, as applicable.		N
	OTHER DIFFERENCES		
	The following key national differences are based on requirements other than national regulatory requirements. The bi-national standard (CAN/CSA C22.2 No. 60950/UL 60950, Third Edition) referenced above should be consulted for further details on the national differences summarized below.		P
1.5.2	<p>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.</p> <p>The acceptance will be based on the following:</p> <p>E) 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.</p> <p>F) A component, which has a CB Test Certificate for compliance with a relevant IEC component standard, will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be 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.</p> <p>G) 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.</p> <p>H) Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory.</p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp 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.		N
2.6.3.3	When subject to impedance testing, protective earthing and bonding are required to be tested to the additional test conditions that originate in CAN/CSA C22.2 No. 0.4.		N
4.2.8.1	Enclosures around CRT's having a diagonal dimension of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.		N
4.3.2	Equipment with handles is required to comply with special loading tests.		N
5.1.8.1.1	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N
6.2.1	Enamel coating on winding wire not considered electrical separation unless subject to special investigation.		N
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.		N
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.		N
M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subject to special installation and performance restrictions.		N
Annex NAB	Equipment connected to centralized d.c. power systems is required to comply with special earthing, wiring, marking and insulation requirements in accordance with Annex NAB and 3.6.1.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
National differences China (CN) IEC 60950, 3rd ed.			

	<p>1. Supply tolerance</p> <p>Item 1.4.5 of IEC 60950 stipulates the tolerance of rated voltage is +6 % and -10 %, while GB4943-2001 makes a specification of tolerance of +10 % and -10 %.</p>		P
	<p>2. Power rating marking</p> <p>Item 1.7.1 of IEC 60950 does not specify concrete figures of markings of supply voltage and frequency, instead, descriptions are given by examples. But the examples do not include China's mains voltage. GB4943-2001 stipulates that:</p> <ul style="list-style-type: none"> - A single rated voltage shall expressed as 220 V - When a rated voltage range is given, the range shall cover 220 V - When a variety voltages or rated voltage ranges are given, one of them shall be set as 220 V when dispatched from the factory - Rated frequency or rated frequency range shall be 50 Hz or include 50 Hz - If a unit is not provided with means of direct connection to the AC mains supply, it need not be marked with any electrical rating 		P
	<p>3. Plate and warning marking in Chinese</p> <p>Item 1.7.12 of GB4943-2001 stipulates: instructions and equipment markings related to safety shall be in standardized Chinese.</p>	Shall be provided before marketing.	N
	<p>4. Power supply plug</p> <p>According to China's particular standard for power supply plug, it is added in article 3.2.1 of GB4943-2001 that plug connecting equipment with AC mains supply shall be in accordance with requirements of GB1002.</p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
National differences Japan (JP) IEC 60950, 3rd ed.			

1.2	Addition: Add the following terms. 1.2.4.101 Equipment, Class 0I 1.2.12.101 Material, VTM		P
1.2.4.101	Addition: CLASS 0I EQUIPMENT: equipment where protection against electric shock is achieved by: <ul style="list-style-type: none"> a) using BASIC INSULATION, and b) providing a means of connecting to the protective earthing conductor in the building wiring those conductive parts that are otherwise capable of assuming HAZARDOUS VOLTAGES is the BASIC INSULATION fails, and c) using a supply cord without earthing conductor and plug without earthing wire although the equipment has externally an earth terminal or a lead wire for earthing. Equipment provided with a cord set having a two-pin type plug with a lead wire for earthing is also regarded as Class 0I. NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation as well as an operating part as SELV circuit.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
1.2.12.1	<p>Replacement:</p> <p>FLAMMABILITY CLASSIFICATION OF MATERIALS: The recognition of the burning behaviour of materials and their ability to extinguish if ignited. Materials are classified as in 1.2.12.2 to 1.2.12.9, and 1.2.12.101 when tested in accordance with annex A.</p> <p>NOTE 1 – When applying the requirements in this standard, HF-1 CLASS FOAMED MATERIALS are regarded as better than those of CLASS HF-2, and HF-2 better than HBF.</p> <p>NOTE 2 – Similarly, other MATERIALS, including rigid (engineering structural) foam of CLASSES 5V or V-0 are regarded as better than those of CLASS V-1, V-1 better than V-2, and V-2 better than HB.</p> <p>NOTE 3 – Similarly, for thin MATERIALS, VTM-0 Class materials are regarded as better than those of VTM-1 Class, and VTM-1 better than VTM-2.</p>		P
1.2.12.101	<p>Addition:</p> <p>VTM CLASS MATERIAL: Thin MATERIALS fulfil the specified conditions during the test of clause A.101 applied for materials that the test and evaluation of clauses A.6 to A.10 is difficult to enforce. Materials are classified to three classifications as VTM-0, VTM-1 and VTM-2 according to the conditions after the removal of the test flame.</p>		P
1.7.101	<p>Addition:</p> <p>Marking for CLASS 0I EQUIPMENT</p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body:</p> <p>“Provide an earthing connection”</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>“Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p>		N
2.1.1.1	<p>Replacement:</p> <p>Replace “IEC 60083” to “IEC 60083 or JIS C 8303” in 2.1.1.1 b).</p>		P

IEC 60950			
Clause	Requirement - Test	Result	Verdict
2.6.3.1	Addition: Add the following after 1st paragraph. This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.		N
2.6.4.1	Replacement: Replace 2nd sentence in 1st paragraph. For CLASS I EQUIPMENT with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.		N
2.6.5.4	Replacement: Replace 1st sentence. Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following.		N
2.6.101	Addition: Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150 V. For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip. CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external where easily visible.		N
3.2.5	Delete 1) in Table 3B.		N
4.2.8	Addition: Add the following informative remark after the last sentence. Remark – IEC 61965 is also applicable instead of IEC 60065.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
4.5.1	<p>Addition:</p> <p>Add the following to suffix 5) as specified in "Conditions applicable to Table 4A, Parts 1 and 2".</p> <p>With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B) are also acceptable.</p> <p>Add a suffix 7) in "Conditions applicable to Table 4 A, Parts 1 and 2".</p> <p>In the right column of Table 4A, Part 1, add suffix 7) to "50" (K), corresponding to "-without T – marking" in the left column so as to become "50 7)".</p> <p>Add 7) to Table 4A, Part 2 as follows.</p> <p>7) This value shall apply only to wiring or cords complying with relevant IEC standards. Others shall comply with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B).</p>		P
4.7.3.2	<p>Addition:</p> <p>Add the following in 7th paragraph.</p> <p>- for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better.</p>		P

IEC 60950																																				
Clause	Requirement - Test	Result	Verdict																																	
5.1.6	Replacement: Replace Table 5A.		P																																	
	<table border="1"> <thead> <tr> <th>Type of equipment</th> <th>Terminal A of measuring instrument connected to:</th> <th>Maximum TOUCH CURRENT mA r.m.s.¹⁾</th> <th>Maximum PROTECTIVE CONDUCTOR CURRENT</th> </tr> </thead> <tbody> <tr> <td>ALL equipment</td> <td>Accessible parts and circuits not connected to protective earth</td> <td>0,25</td> <td>-</td> </tr> <tr> <td>HAND-HELD</td> <td rowspan="4">Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT</td> <td>0,75</td> <td>-</td> </tr> <tr> <td>MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)</td> <td>3,5</td> <td>-</td> </tr> <tr> <td>STATIONARY, PLUGGABLE TYPE A</td> <td>3,5</td> <td>-</td> </tr> <tr> <td>ALL other STATIONARY EQUIPMENT</td> <td rowspan="2">3,5</td> <td rowspan="2">-</td> </tr> <tr> <td>- not subject to the conditions of 5.1.7</td> <td></td> </tr> <tr> <td>- subject to the conditions of 5.1.7</td> <td></td> <td>5 % of input current</td> </tr> <tr> <td>HAND-HELD</td> <td rowspan="2">Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT</td> <td>0,5</td> <td>-</td> </tr> <tr> <td>Others</td> <td>1,0</td> <td>-</td> </tr> </tbody> </table>	Type of equipment		Terminal A of measuring instrument connected to:	Maximum TOUCH CURRENT mA r.m.s. ¹⁾	Maximum PROTECTIVE CONDUCTOR CURRENT	ALL equipment	Accessible parts and circuits not connected to protective earth	0,25	-	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS I EQUIPMENT	0,75	-	MOVABLE (other than HAND-HELD, but including TRANSPORTABLE EQUIPMENT)	3,5	-	STATIONARY, PLUGGABLE TYPE A	3,5	-	ALL other STATIONARY EQUIPMENT	3,5	-	- not subject to the conditions of 5.1.7		- subject to the conditions of 5.1.7		5 % of input current	HAND-HELD	Equipment main protective earthing terminal (if any) CLASS 0I EQUIPMENT	0,5	-	Others	1,0	-	
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¹⁾ If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.																																				
5.3.8.2	Replacement: Replace 3rd Item as follows. - BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;		P																																	

IEC 60950			
Clause	Requirement - Test	Result	Verdict
Annex A	<p>Addition:</p> <p>Add the subclause A.101 with the title "Flammability tests for classifying materials VTM" and the following:</p> <p>Thin sheet materials shall comply with ISO 9773.</p>		P
Annex G	<p>Addition:</p> <p>Add the following to the Note for Table G.1.</p> <p>2. In Japan, MAINS TRANSIENT VOLTAGE for equipment with a Nominal AC MAINS SUPPLY VOLTAGE of 100 V is to be decided based on the column where Nominal AC MAINS SUPPLY VOLTAGE in Table G.1 is 150 V.</p>		P
Annex P	<p>Addition:</p> <p>Add "IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes".</p>		N
Annex U	<p>Replacement:</p> <p>Replace 2nd paragraph.</p> <p>This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm.</p>		N
U.2.1	<p>Replacement:</p> <p>Electric strength</p> <p>The test sample is prepared according to IEC 60851-5:1997, 4.4.1 (for a twisted pair). The sample is then subjected to the test of 5.2.2 of this standard, with a test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows:</p> <ul style="list-style-type: none"> - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V, or; - for REINFORCED INSULATION, 6000 V. 		N

IEC 60950															
Clause	Requirement - Test	Result	Verdict												
U.2.2	<p>Replacement:</p> <p>Flexibility and adherence</p> <p>Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameters of table U.1. The test sample is then examined in accordance with IEC 60851-3:1996, 5.1.1.4, followed by the test of 5.2.2 of this standard except applying the test voltage between the wire and the mandrel. A test voltage shall not be less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows:</p> <ul style="list-style-type: none"> - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V. 		N												
Table U.1	<p>Replacement:</p> <p>Mandrel diameter</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Nominal Conductor diameter mm</th> <th style="text-align: center;">Mandrel diameter mm ± 0.2mm</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0,05-0,34</td> <td style="text-align: center;">4,0</td> </tr> <tr> <td style="text-align: center;">0,35-0,49</td> <td style="text-align: center;">6,0</td> </tr> <tr> <td style="text-align: center;">0,50-0,74</td> <td style="text-align: center;">8,0</td> </tr> <tr> <td style="text-align: center;">0,75-2,49</td> <td style="text-align: center;">10,0</td> </tr> <tr> <td style="text-align: center;">2,50-5,00</td> <td style="text-align: center;">4 times of the diameter of conductor ¹⁾</td> </tr> </tbody> </table> <p>¹⁾ in compliance with IEC 60317-43.</p> <p>The tension to be applied to the wire during winding on the mandrel is calculated from the wire diameter to be equivalent to 118 Mpa ± 10 % (118 N/mm² ± 10 %).</p>	Nominal Conductor diameter mm	Mandrel diameter mm ± 0.2mm	0,05-0,34	4,0	0,35-0,49	6,0	0,50-0,74	8,0	0,75-2,49	10,0	2,50-5,00	4 times of the diameter of conductor ¹⁾		N
Nominal Conductor diameter mm	Mandrel diameter mm ± 0.2mm														
0,05-0,34	4,0														
0,35-0,49	6,0														
0,50-0,74	8,0														
0,75-2,49	10,0														
2,50-5,00	4 times of the diameter of conductor ¹⁾														

IEC 60950			
Clause	Requirement - Test	Result	Verdict

National differences Korea (KR) IEC 60950, 3rd ed.			
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1.5.101	Addition Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305 and 8305).		P
7	Addition EMC The apparatus shall comply with the relevant CISPR standards.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
National differences United States (US) IEC 60950, 3rd ed.			

	<p>The United States of America and Canada have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950/UL 60950, Third Edition, based on IEC 60950, Third Edition.</p> <p>The following is a summary of the key national differences based on national regulatory requirements, such as the National Electrical Code (NEC), ANSI/NFPA 70-1999, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations. The bi-national standard referenced above should be consulted for further details on the national differences summarized below.</p>		P
1.1.1	<p>All equipment is to be designed to allow installations in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and, unless marked or otherwise identified, the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.</p>		P
1.5.5	<p>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.</p> <p>For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies which are not types specified in the NEC are required to have special construction features and identification markings.</p>		N
1.7.1	<p>Equipment for use on supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.</p> <p>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."</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
2.5	Where a fuse is used to provide Class 2, LPS (or TNV) current limiting, It shall not be operator-accessible unless it is not interchangeable.		N
2.7.1	Suitable NEC branch circuit protection is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch circuit protection is not suitable. Power distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection.		N
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC.		N
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.		N
3.2.3	Permanent connection of equipment to the mains by a power supply cord is not permitted.		N
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.		N
3.2.8	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N
3.3	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.		N
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N
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 specially marked when specified (1.7.7).		N
3.4.2	Motor control devices are required for cord-connected equipment with a motor if the motor (a) has a nominal voltage rating greater than 120 V, (b) is rated more than 12 A, or (c) is rated more than 1/3 hp (locked rotor current over 43 A).		N
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.		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
3.4.10	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.		N
4.3.12	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N
4.3.13	Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C1370.		N
4.7.1	For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m ² 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.		N
Annex H	Equipment that produces ionizing radiation is required to comply with Code of Federal Regulations, 21 CFR 1020 and Canadian Radiation Emitting Devices Act, REDR C1370.		N
	The following key national differences are based on requirements other than national regulatory requirements. The bi-national standard referenced above should be consulted for further details on the national differences summarized below.		

IEC 60950			
Clause	Requirement - Test	Result	Verdict
1.5.1	<p>Some components and materials associated within e risk of lire, 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:</p> <p>attachment plugs, cathode ray tubes, circuit breakers, communication circuit accessories, 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 (including interlock switches), thermal cutoffs, thermostats, transformer winding wire, tubing, wire connectors, and wire and cables.</p>		N
2.3.1	<p>For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp 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.</p>		N
2.6.3.3	<p>When subject to impedance testing, protective earthing and bonding is required to be tested subject per the specified test conditions that originate in CSA C22.2 No. 0.4.</p>		N
4.2.8.1	<p>Enclosures around CRTs with a face area of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.</p>		N
4.3.2	<p>Equipment with handles is required to comply with special loading tests.</p>		N
5.1.8.1.1	<p>Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.</p>		N
6.2.1	<p>Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.</p>		N
6.4	<p>Equipment intended far 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.</p>		N

IEC 60950			
Clause	Requirement - Test	Result	Verdict
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.		N
M2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N
Annex NAB	Equipment connected to centralized d.c. power systems is required to comply with special earthing, wiring, marking and insulation requirements in accordance with Annex NAB and 3.6.1.		N
National differences Argentina (AR), Brazil (BR), Israel (IL), Malaysia (MY), Poland (PL), Russia Federation (RU), Singapore (SG), Slovenia (SI), Turkey (TR), Ukraine (UA) and South Africa (ZA) IEC 60950, 3rd ed.			
	No National differences.		P

Equipment's combined with two-pole plug (Class II)

Supplementary tests on plug portion according to EN 50 075 or IEC 884-1

	Requirement - Test	References to clauses in		Result-Remark	Comply
		IEC 884-1	EN 50 075		
1	Plug portion				
	CEE 7 Standard Sheet			XVI	P
	EN 50 075				P
2	Dimensions				
	Checking dimensions by measuring and by gauges according to Standard sheet			See dimension check list	P
	The edges of the metal-pins , Chamfered or rounded off ?				P
3	Protection against electric shock				
a	Test finger (75N, 1 min in 35°C) or Applicable appliance standard	10.1	8.1		P
b	Single pole insertion. Checked with gauge: Fig 4 or C19A or C19B (CEE 7)	9.2	8.2		P P
c	Compression test 150 N, 5 min.	10.1	13.1		P
d	External parts made of insulating material	10.4	8.3	Insulating plastic	P
4	Construction				
a	Test on pins which are not solid	14.2	9.3		P
b	Pins shall be locked against rotation 0.4 Nm 1 min.	24.2	13.2		P

	Requirement - Test	References to clauses in		Result-Remark	Comply
		IEC 884-1	EN 50 075		
c	Pins shall be adequately fixed in the body 1 min. Temperature 70°C 40 N for plugs ≤ 2,5 A 50 N for plugs > 2,5 A	24.10	13.4		P
d	Pins of copper or copper alloy min 58% copper or equivalent	26.5-26.6	15.3	> 58% copper	P
e	Plug shall not impose undue strain on fixed socket-outlets, 0,25 Nm	14.23.2		Max. 0,25 Nm	P
f	Abrasion test on the insulating sleeves 20 000 movements	24.7	13.3		P
5	Resistance of insulating material to abnormal heat, to fire and to tracking				
a	Compression test 1 h in 80°C	25.4	14.1.2		N
b	Glow-wire test 750°C	26.1.1	17		P
c	Resistance to tracking 175V (other than ordinary)	28.2			N

Equipment's combined with Australia plug.

Supplementary tests on plug portion according to AS/NZS 3112: 2000.

	Requirement – Test	References to clauses in	Result-Remark	Comply
		AS/NZS 3112		
J2.2.1	Plug pins of plug portions			
	Pins of copper or copper alloy min. 58 % copper or stainless steel min. 13 % chromium.	2.2.1		P
J2.2.2	Ratings and dimensions for low voltage plug portions			
	Figure 2.1 (a1)	2.8.1/2.8.4		N
	Figure 2.1 (a2)	2.8.1/2.8.4		N
	Figure 2.1 (b)	2.8.1/2.8.4		N
	Figure 2.1 (c)	2.8.1/2.8.4		P
	Figure 2.1 (d1)	2.8.1/2.8.4		N
	Figure 2.1 (d2)	2.8.1/2.8.4		N
	Figure 2.1 (e)	2.8.1/2.8.4		P
	Figure 2.1 (f)	2.8.1/2.8.4		N
	Figure 2.1 (g)	2.8.1/2.8.4		N
	Checking dimensions by measuring and by gauges in Figure A1, Appendix A.	2.8.1/2.8.4		P
	Checking dimensions by measuring and by gauges in Figure B1, Appendix B.	2.8.1/2.8.4		N
	Checking dimensions by measuring and by gauges in Figure F1(a), Appendix F.	2.8.1/2.8.4		N
	Checking dimensions by measuring and by gauges in Figure F1(b), Appendix F.	2.8.1/2.8.4		N
J2.2.3	Internal connections for plug portions	2.9		N
J2.2.4	Arrangement of earthing connections for plug portions	2.10		N
J2.2.5	Configuration of plug portions	2.12.6		P
J2.2.6	Tests on plugs			
J2.2.6.2	High voltage test Clause 2.13.2 items (a) and (c), test voltage see table 2.3; Clause 2.13.2 items (b) and (d), test voltage is 3500 Vac, 1 min.; Clause 2.13.2 item (e), test voltage is 1250 Vac, 1 min.	2.13.3		P
J2.2.6.3	Tumbling barrel test EUT mass ≤ 250 g, 500 times drops; EUT mass > 250 g, 250 times drops.	2.13.7		P
J2.2.6.4	Temperature rise test The temperature rise of the pins shall not ≤ 45 K.	2.13.8		P

J2.2.6.5	Securement of pins of the plug portion			
	Movement of pins: 40 ± 1 °C for 1 h, 18 ± 1 N-push.	2.13.9.1		P
	Fixing of pins: 50 ± 2 °C for 1 h, 60 ± 0.6 N-push/pull, 10 min.	2.13.9.2		P
J.2.2.6.6	Tests on the insulation material of insulated pin plug portions			
	Pressure test at high temperature: 160 ± 5 °C for 2 h, 2.5 N.	2.13.13.2		P
	Static damp heat test: Db (12+12 h cycle), 95 % R.H., lower temperature 25 ± 3 °C and upper temperature 40 °C.	2.13.13.3		P
	Lower temperature test: -15 ± 2 °C for 24 h.	2.13.13.4		P
	Impact test at low temperature: -15 ± 2 °C for 24 h, falling weight mass 100 ± 1 g, falling height 100 mm, four impacts.	2.13.13.5		P
	Abrasion test: 4 N, 10 000 times in each direction (20 000 movements) at a rate of 30 movements per minute.	2.13.13.6		P
J2.2.6.7	Torque to socket-outlet test Plug shall not impose undue strain on fixed socket-outlets, 0,25 Nm	J2.2.6.7		P

Equipment's combined with UK plug.

Supplementary tests on plug portion according to BS 1363

	Requirement - Test	Result-Remark	Comply
1	Dimensions		
1.1	Checked according to figure 4		P
1.2	Gauge for plug pins according to figure 5		P
1.3	Part of line or neutral pin is ≥ 9.5 mm from the periphery of the plug along the engagement surface		P
1.4	Line and neutral plug pins are fitted with insulating sleeves and earthing plug pin not fitted		P
2	Accessibility of live part		
2.1	Plug mounted in an outlet (test pin II, 5 N)	Live part not accessible	P
2.2	Pressure test (figure 2, 240 N, 2 kV/1 min.)		N
2.3	Check with test finger III, 30 N	Live part not accessible	P
2.4	a) Metal in external part		N
	b) Metal in external part recessed 3 mm		N
3	Construction and mechanical strength		
3.1	a) Each plug cover fixed by screws, Pull test, 60 N/1 min., 70 °C		N
	b) For rewirable plugs have covers fixed by means other than screws and for non-moulded-on, non-rewirable plugs, Pull test, 60 N/1 min., 70 °C		N
	After test, test pin, figure 1, 5 N/1 min.		N
3.2	Pressure test, 20 N/1 h, 70 °C		N
3.3a	Solid plug pins, exposed surface is smooth and free from burrs or sharp edges and other irregularities		P
3.3b	Non-solid plug pins, those surfaces are visible when the plug is correctly assembled shall be free of apertures		N
3.3c	Non-solid plug pins, seams and joints are closed over their entire length		N
3.4	Plug pins are constructed of brass		P

3.5	Pull test on pins, 70 °C for 1 hour, 100 N/ 1 min.		P
3.6a	Electric strength test, 1250 Vac/ 1 min.		P
3.6b	Resistance to abrasion on pin sleeves		P
3.6c	Impression test, 2.5 N, 200 °C for 2 hours		N
3.7	Plug pin deflection test, deflection ≤ 3° 30'		N
4	Resistance to heat, fire and tracking		
4.1	Pressure test, 20 N/1 h, 75 °C		P
4.2	Glow wire test, 750 °C, (retaining live parts)		P
4.3	Glow wire test, 650 °C, (not retaining live parts)		N
4.4	Tracking test, 175 V		N

Equipment's combined with Korea plug.

Supplementary tests on plug portion according to IEC 61558

	Requirement - Test	Result-Remark	Comply
1	Dimensions		
1.1	Checked according to figure 1 of KSC 8305		P
2	Mechanical strength		
2.1	Drop Test (16.3)		P
2.2	Tumbling Barrel Test (a of 16.4)		P
2.3	Torque Test (b of 16.4)	Max. 0,25 Nm	P
2.4	Pull Test (c of 16.4)		P

Equipment's combined with China plug.

Supplementary tests on plug portion according to figure 1 of GB 1002-1996

	Requirement - Test	Result-Remark	Comply
1	Dimensions		
1.1	Checked according to figure 1 of GB 1002-1996		P
2	Mechanical strength		
2.1	Drop Test (16.3)		P
2.2	Tumbling Barrel Test (a of 16.4)		P
2.3	Torque Test (b of 16.4)	Max. 0.25 Nm	P
2.4	Pull Test (c of 16.4)		P





