



Ref. Certif. No.

JPJQA-6515M2/B2

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

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

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

AC Adaptor

Name and address of the applicant
Nom et adresse du demandeur

Tamura Corporation
5-5-30 Chiyoda, Sakado, Saitama 350-0214
Japan

Name and address of the manufacturer
Nom et adresse du fabricant

Tamura Corporation
5-5-30 Chiyoda, Sakado, Saitama 350-0214
Japan

Name and address of the factory
Nom et adresse de l'usine

Tamura Electronics (Shenzhen) Co., Ltd.
No.1 Factory of Ban Tian Section, Ban Xue Gang Road, Ban
Tian Village, Bu ji Town, Long Gang District, Shen Zhen City
China

Ratings and principal characteristics
Valeurs nominales et caractéristiques principales

Input: AC100-240V, 50/60Hz, 0.7A, Class II
Output: DC12V, 2.5A

Trademark (if any)
Marque de fabrique (si elle existe)

Tamura

Model / Type Ref.
Ref. De type

DXW1225N

Additional information (if necessary)
Informations complémentaires (si nécessaire)

A sample of the product was tested and found
to be in conformity with
*Un échantillon de ce produit a été essayé et a été
considéré conforme à la*

IEC

PUBLICATION

EDITION

60950-1(ed.1)

As shown in the Test Report Ref. No.
which forms part of this Certificate
*Comme indiqué dans le Rapport d'essais numéro
de référence qui constitue partie de ce Certificat*

350-70373

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



JAPAN QUALITY ASSURANCE ORGANIZATION
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573 Japan

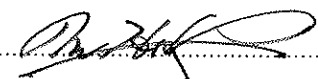
Original issued: 2007-08-07

This revised version substitutes JPJQA-6515M1/B2/350-70314, due to addition of alternate turns of insulation type on
T1 core bottom.

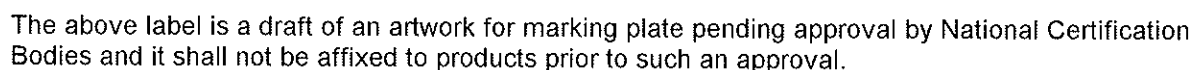
Date: 2007-10-30

Signature:

H. Inoue

TEST REPORT IEC 60950-1 and/or EN 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report reference No : <350-70178>	
Tested by (printed name and signature) : Takashi Kosai	
Approved by (printed name and signature) : Masatomo Higuchi	
Date of issue : August 6, 2007	
Contents : Report: 46 pages Appendix: see page 3.	
Testing Laboratory Name : Japan Quality Assurance Organization	
Address : 1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan	
Testing location : CBT ☒ CCATL ☐ SMT ☐ TMP ☐	
Address : Same as Testing Laboratory	
Applicant's Name : Tamura Corporation	
Address : 5-5-30 Chiyoda, Sakado, Saitama 350-0214 Japan	
Test specification	
Standard : IEC 60950-1:2001 (1 st Edition)	
Test procedure : CB-scheme	
Procedure deviation : CA, US: National differences to IEC60950-1, 1st edition (2001) in CB Bulletin No. 112A. JP: National differences to IEC60950, 3rd edition (1999) in CB Bulletin No. 112A, because of no national differences to IEC60950-1, 1st edition (2001).	
Non-standard test method : -	
Test Report Form No. : IECEN60950_1B	
TRF originator : SGS Fimko Ltd	
Master TRF : dated 2003-03	
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Copy of marking plate:



Summary of testing:**GENERAL**

1. This sample tested complies with the requirements of test specification.
2. The equipment is an AC Adaptor, which is intended to use with information technology equipment. (approx. size 57mm × 33mm × 121mm)
3. The equipment has been evaluated for use in Pollution Degree 2 environment.
4. Detachable power supply cord set was not checked. But it shall be approval type, which was evaluated by relevant IEC or other local standard.
5. DC output complied with CL 2.2 SELV circuit and CL 2.5 limited power source.

Normal operational condition

This equipment was operated at 12Vdc 2.5A with resistor load as normal operation.

APPENDIXES

- Enclosure 1: Procedure deviations (19 sheets)
- Enclosure 2: Attached photo: (3 sheets / 6 figures)
- Enclosure 3: Circuit Diagram (1 sheet)
- Enclosure 4: PCB pattern traces drawing (2 sheets)
- Enclosure 5: Transformer Construction figure (8 sheets)

Particulars: test item vs. test requirements

Equipment mobility : Movable
 Operating condition : Continuous
 Mains supply tolerance (%) : +10%, -10%
 Tested for IT power systems : No
 IT testing, phase-phase voltage (V) : -
 Class of equipment : Class II
 Mass of equipment (kg) : 0.3
 Operating ambient temperature(°C) : 40
 Protection against ingress of water : IP0

Test case verdicts

Test case does not apply to the test object .. : N/A
 Test item does meet the requirement : Pass
 Test item does not meet the requirement : F(ail)

Testing

Date of receipt of test item : June 18, 2007
 Date(s) of performance of test : June 19 to August 1, 2007

General remarks

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

The test result presented in this report relate only to the object(s) tested.

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

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

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

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

General product information:

See GENERAL.

Factory's Name / Address:

Tamura Electronics (Shenzhen) Co., Ltd.
 No. 1 Factory of Ban Tian Section, Ban Xue Gang Road, Ban Tian Village, Bu Ji Town, Long Gang District, Shen Zhen City, China

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

1	GENERAL		Pass
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1.5	Components		Pass
1.5.1	General	-	Pass
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	(see appended table 1.5.1)	Pass
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers	Switch mode type.	Pass
1.5.5	Interconnecting cables	Output cable.	Pass
1.5.6	Capacitors in primary circuits	X-capacitor C1 is certified as X2	Pass
1.5.7	Double insulation or reinforced insulation bridged by components	(see appended table 1.5.1)	Pass
1.5.7.1	General	-	Pass
1.5.7.2	Bridging capacitors	Bridging capacitors C15 is certified as Y1.	Pass
1.5.7.3	Bridging resistors	-	N/A
1.5.7.4	Accessible parts	See Sub-Clause 2.4.	Pass
1.5.8	Components in equipment for IT power systems	TN and Class II equipment	N/A

1.6	Power interface		Pass
1.6.1	AC power distribution systems	TN and Class II equipment	Pass
1.6.2	Input current	(see appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment	Movable equipment.	N/A
1.6.4	Neutral conductor	Class II equipment. Both primary conductors are isolated from other parts by double or reinforced insulation.	Pass

1.7	Marking and instructions		Pass
1.7.1	Power rating		Pass
	Rated voltage(s) or voltage range(s) (V)	100-240V	Pass
	Symbol for nature of supply, for d.c. only.....	-	N/A
	Rated frequency or rated frequency range (Hz) ..	50/60Hz	Pass
	Rated current (mA or A)	0.7A	Pass
	Manufacturer's name or trademark or identification mark	TAMURA.S	Pass
	Type/model or type reference.....	AP13015A	Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Symbol for Class II equipment only		Pass
	Other symbols	-	N/A
	Certification marks	Certification marks are tentative.	N/A
1.7.2	Safety instructions	Provided.	Pass
1.7.3	Short duty cycles	Continuous	N/A
1.7.4	Supply voltage adjustment	No voltage adjustment.	N/A
	Methods and means of adjustment; reference to installation instructions	-	N/A
1.7.5	Power outlets on the equipment	No primary outlet.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	F1 T3.15AH 250V	Pass
1.7.7	Wiring terminals	Appliance inlet used.	N/A
1.7.7.1	Protective earthing and bonding terminals	Non-polarity Class II equipment.	N/A
1.7.7.2	Terminal for a.c. mains supply conductors	-	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	-	N/A
1.7.8	Controls and indicators	No controls or indications.	N/A
1.7.8.1	Identification, location and marking	-	N/A
1.7.8.2	Colours	No safety relevant colour.	N/A
1.7.8.3	Symbols according to IEC 60417.....	No symbols	N/A
1.7.8.4	Markings using figures	-	N/A
1.7.9	Isolation of multiple power sources	Single power source.	N/A
1.7.10	IT power distribution systems	No need pre-caution for class II equipment.	N/A
1.7.11	Thermostats and other regulating devices	No adjustable thermostat or regulating device.	N/A
1.7.12	Language(s)	English version only checked.	—
1.7.13	Durability	-	Pass
1.7.14	Removable parts	Not on removable parts.	N/A
1.7.15	Replaceable batteries	No batteries.	N/A
	Language(s)		—
1.7.16	Operator access with a tool	No user servicing area in the equipment.	N/A
1.7.17	Equipment for restricted access locations.....	User installation equipment.	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

2	PROTECTION FROM HAZARDS		Pass
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2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	Protected from hazardous voltage circuits by electrical enclosure.	Pass
2.1.1.1	Access to energized parts	Output is SELV and Limited Power Source. See 2.5.	Pass
	Test by inspection	-	Pass
	Test with test finger	Test finger could not touch to hazardous voltage/energy circuits.	Pass
	Test with test pin	Test pin could not touch to hazardous voltage/energy circuits.	Pass
	Test with test probe	No TNV	N/A
2.1.1.2	Battery compartments	No TNV	N/A
2.1.1.3	Access to ELV wiring	No ELV	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance (mm) through insulation	-	—
2.1.1.4	Access to hazardous voltage circuit wiring	No accessible hazardous voltage circuit wiring.	Pass
2.1.1.5	Energy hazards	No energy hazard in operator access area. Output 36.8VA at 11.9V × 3.1A.	Pass
2.1.1.6	Manual controls	No manual controls.	N/A
2.1.1.7	Discharge of capacitors in equipment	X- capacitor C1 is 0.33μF	Pass
	Time-constant (s); measured voltage (V)	41.6V peak after 1 sec. Input: 373V peak	—
2.1.2	Protection in service access areas	No accidental touching during service.	Pass
2.1.3	Protection in restricted access locations	Normal location.	N/A

2.2	SELV circuits		Pass
2.2.1	General requirements	Less than 42.4Vpk or 60Vdc. (see appended table 5.3)	Pass
2.2.2	Voltages under normal conditions (V)	Maximum secondary output is DC12.2V under normal operation	Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.3	Voltages under fault conditions (V)	Max. output voltage was less than 42.4Vpk and 60Vdc after single fault. (see appended table 5.3)	Pass
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)	SELV circuit is separated from other circuit by double or reinforced insulation.	Pass
2.2.3.2	Separation by earthed screen (method 2)	-	N/A
2.2.3.3	Protection by earthing of the SELV circuit (method 3)	-	N/A
2.2.4	Connection of SELV circuits to other circuits	Y1-capacitor/ C15 bridges the SELV circuits to primary circuits.	Pass

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV	N/A
	Type of TNV circuits	-	—
2.3.2	Separation from other circuits and from accessible parts	-	N/A
	Insulation employed.....	-	—
2.3.3	Separation from hazardous voltages	-	N/A
	Insulation employed.....	-	—
2.3.4	Connection of TNV circuits to other circuits	-	N/A
	Insulation employed.....	-	—
2.3.5	Test for operating voltages generated externally	-	N/A

2.4	Limited current circuits		Pass
2.4.1	General requirements	C15 Input: 264V, 60Hz	Pass
2.4.2	Limit values	70mA	Pass
	Frequency (Hz).....	114kHz	—
	Measured current (mA).....	Shunt by 2k Ω resistor. 4.0mA peak	—
	Measured voltage (V)	383Vpk	—
	Measured capacitance (μ F)	470pF	—
2.4.3	Connection of limited current circuits to other circuits	Secondary side of bridging capacitor C15 (Y1) complies with the limited current circuit.	Pass

2.5	Limited power sources		Pass
	Inherently limited output	According to table 2B	Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Impedance limited output	-	N/A
	Overcurrent protective device limited output	-	N/A
	Regulating network limited output under normal operating and single fault condition	12V output was tested.	Pass
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition	-	N/A
	Output voltage (V), output current (A), apparent power (VA)	See appended table 2.5.	—
	Current rating of overcurrent protective device (A)	-	—

2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class II equipment.	N/A
2.6.2	Functional earthing	No functional earthing.	N/A
2.6.3	Protective earthing and protective bonding conductors	-	N/A
2.6.3.1	General	-	N/A
2.6.3.2	Size of protective earthing conductors	-	N/A
	Rated current (A), cross-sectional area (mm ²), AWG	-	—
2.6.3.3	Size of protective bonding conductors	-	N/A
	Rated current (A), cross-sectional area (mm ²), AWG	-	—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A)	-	N/A
2.6.3.5	Colour of insulation.....	-	N/A
2.6.4	Terminals	-	N/A
2.6.4.1	General	-	N/A
2.6.4.2	Protective earthing and bonding terminals	-	N/A
	Rated current (A), type and nominal thread diameter (mm).....	-	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	-	N/A
2.6.5	Integrity of protective earthing	-	N/A
2.6.5.1	Interconnection of equipment	-	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	-	N/A
2.6.5.3	Disconnection of protective earth	-	N/A
2.6.5.4	Parts that can be removed by an operator	-	N/A
2.6.5.5	Parts removed during servicing	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.5.6	Corrosion resistance	-	N/A
2.6.5.7	Screws for protective bonding	-	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	-	N/A

2.7	Overcurrent and earth fault protection in primary circuits		Pass
2.7.1	Basic requirements	A fuse-link according to IEC60127.	Pass
	Instructions when protection relies on building installation	No necessary.	N/A
2.7.2	Faults not covered in 5.3	Considered.	Pass
2.7.3	Short-circuit backup protection	High breaking capacity fuse.	Pass
2.7.4	Number and location of protective devices	One fuse in Class II equipment.	Pass
2.7.5	Protection by several devices	-	N/A
2.7.6	Warning to service personnel	-	N/A

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

2.9	Electrical insulation		Pass
2.9.1	Properties of insulating materials	Neither natural rubber nor materials containing asbestos is used as insulation.	Pass
2.9.2	Humidity conditioning	48 hours	Pass
	Humidity (%)	95	—
	Temperature (°C)	25	—
2.9.3	Grade of insulation	Primary and Secondary/Case: Double or Reinforced Insulation.	Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10	Clearances, creepage distances and distances through insulation		Pass
2.10.1	General	Pollution Degree 2.	Pass
2.10.2	Determination of working voltage	(see appended table 2.10.2)	Pass
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.1	General	-	Pass
2.10.3.2	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.3	Clearances in secondary circuits	5.3.4.c)	N/A
2.10.3.4	Measurement of transient voltage levels	-	N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	Pass
	CTI tests.....:	Material Group III.	—
2.10.5	Solid insulation	(see appended table 2.10.5)	Pass
2.10.5.1	Minimum distance through insulation		Pass
2.10.5.2	Thin sheet material	No thin sheet material as supplementary insulation or better.	N/A
	Number of layers (pcs)	-	—
	Electric strength test	-	—
2.10.5.3	Printed boards	-	N/A
	Distance through insulation	-	N/A
	Electric strength test for thin sheet insulating material	-	—
	Number of layers (pcs)	-	N/A
2.10.5.4	Wound components	In Transformer T1, triple insulated wire is used as secondary winding tested to Annex U by VDE.	Pass
	Number of layers (pcs)	-	Pass
	Two wires in contact inside wound component; angle between 45° and 90°	One layer of polyester tape on the contacting points.	Pass
2.10.6	Coated printed boards	No coated printed boards	N/A
2.10.6.1	General	-	N/A
2.10.6.2	Sample preparation and preliminary inspection	-	N/A
2.10.6.3	Thermal cycling	-	N/A
2.10.6.4	Thermal ageing (°C)	-	N/A
2.10.6.5	Electric strength test	-	—
2.10.6.6	Abrasion resistance test	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Electric strength test	-	—
2.10.7	Enclosed and sealed parts	-	N/A
	Temperature $T_1 = T_2 + T_{ma} - T_{amb} + 10K$ (°C)	-	N/A
2.10.8	Spacings filled by insulating compound	PHC1 was tested component.	Pass
	Electric strength test	-	—
2.10.9	Component external terminations	-	N/A
2.10.10	Insulation with varying dimensions	-	N/A

3	WIRING, CONNECTIONS AND SUPPLY	Pass
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3.1	General		Pass
3.1.1	Current rating and overcurrent protection	The cross-sectional area of output wires is adequate.	Pass
3.1.2	Protection against mechanical damage	-	Pass
3.1.3	Securing of internal wiring	-	Pass
3.1.4	Insulation of conductors	-	Pass
3.1.5	Beads and ceramic insulators	No beads or similar ceramic	N/A
3.1.6	Screws for electrical contact pressure	No electrical contact pressure by screw fixing.	N/A
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating materials in primary circuits.	N/A
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used for electrical connection.	N/A
3.1.9	Termination of conductors	-	Pass
	10 N pull test	-	Pass
3.1.10	Sleeving on wiring	No sleeving as supplementary insulation on wire	N/A

3.2	Connection to an a.c. mains supply or a d.c. mains supply		Pass
3.2.1	Means of connection	An appliance inlet.	Pass
3.2.1.1	Connection to an a.c. mains supply	-	Pass
3.2.1.2	Connection to a d.c. mains supply	-	N/A
3.2.2	Multiple supply connections	Single supply connection.	N/A
3.2.3	Permanently connected equipment	Not permanently connected equipment.	N/A
	Number of conductors, diameter (mm) of cable and conduits	-	—
3.2.4	Appliance inlets	According to IEC60320.	Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.5	Power supply cords	Detachable power supply cord.	N/A
3.2.5.1	AC power supply cords	Not provided.	N/A
	Type	-	—
	Rated current (A), cross-sectional area (mm ²), AWG	-	—
3.2.5.2	DC power supply cords	-	N/A
3.2.6	Cord anchorages and strain relief	An appliance inlet.	N/A
	Mass of equipment (kg), pull (N)	-	—
	Longitudinal displacement (mm)	-	—
3.2.7	Protection against mechanical damage	-	N/A
3.2.8	Cord guards	-	N/A
	D (mm); test mass (g)	-	—
	Radius of curvature of cord (mm)	-	—
3.2.9	Supply wiring space	-	N/A

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

3.4	Disconnection from the mains supply		Pass
3.4.1	General requirement	-	Pass
3.4.2	Disconnect devices	An appliance coupler according to IEC 60320.	Pass
3.4.3	Permanently connected equipment	-	N/A
3.4.4	Parts which remain energized	No energized parts after disconnect.	Pass
3.4.5	Switches in flexible cords	No switch and flexible cord.	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.4.6	Single-phase equipment and d.c. equipment	Disconnect both poles simultaneously by inlet	Pass
3.4.7	Three-phase equipment	Single phase.	N/A
3.4.8	Switches as disconnect devices	No switch in the equipment.	N/A
3.4.9	Plugs as disconnect devices	-	N/A
3.4.10	Interconnected equipment	-	N/A
3.4.11	Multiple power sources	Single power sources	N/A

3.5	Interconnection of equipment		Pass
3.5.1	General requirements	The output connector is SELV	Pass
3.5.2	Types of interconnection circuits..... :	Ditto	Pass
3.5.3	ELV circuits as interconnection circuits	No ELV circuits.	N/A

4	PHYSICAL REQUIREMENTS		Pass
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4.1	Stability		N/A
	Angle of 10°	No hazardous, if over balance for lightweight equipment.	N/A
	Test: force (N) :	-	N/A

4.2	Mechanical strength		Pass
4.2.1	General	-	Pass
4.2.2	Steady force test, 10 N	Applied to internal components, and no damaged.	Pass
4.2.3	Steady force test, 30 N	-	N/A
4.2.4	Steady force test, 250 N	Applied to the plastic enclosure on top, side and bottom surfaces Results: no damage	Pass
4.2.5	Impact test	Applied to the plastic enclosure on top surfaces, no damage. Applied to the plastic enclosure on side surfaces and then PCB cracked slightly, but no hazard. Applied to the plastic enclosure on bottom surfaces and then PCB cracked slightly, but no hazard.	Pass
	Fall test	-	Pass
	Swing test	-	Pass
4.2.6	Drop test	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.2.7	Stress relief test	Complete sample was placed on 98°C oven. After the test, enclosure was not distorted.	Pass
4.2.8	Cathode ray tubes	No CRT.	N/A
	Picture tube separately certified.....:	-	N/A
4.2.9	High pressure lamps	No high pressure lamps.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)	No wall or ceiling mounting means.	N/A

4.3	Design and construction		Pass
4.3.1	Edges and corners	Neither edge nor corners on the unit represent any hazard to the operator.	Pass
4.3.2	Handles and manual controls; force (N)	No handles or similar devices.	N/A
4.3.3	Adjustable controls	No voltage selector.	N/A
4.3.4	Securing of parts	-	Pass
4.3.5	Connection of plugs and sockets	No interchangeable connector.	Pass
4.3.6	Direct plug-in equipment	-	N/A
	Dimensions (mm) of mains plug for direct plug-in:	-	N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)	-	N/A
4.3.7	Heating elements in earthed equipment	No heating element.	N/A
4.3.8	Batteries	No batteries.	N/A
4.3.9	Oil and grease	No oil and grease.	N/A
4.3.10	Dust, powders, liquids and gases	No liquid and gas. No producing dust.	N/A
4.3.11	Containers for liquids or gases	No flammable liquid or gases.	N/A
4.3.12	Flammable liquids	-	N/A
	Quantity of liquid (l)	-	N/A
	Flash point (°C)	-	N/A
4.3.13	Radiation; type of radiation	The unit does not generate ionizing radiation and does not contain flammable liquid or gases.	N/A
4.3.13.1	General	-	N/A
4.3.13.2	Ionizing radiation	-	N/A
	Measured radiation (pA/kg)	-	—
	Measured high-voltage (kV)	-	—
	Measured focus voltage (kV)	-	—
	CRT markings	-	—

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	-	N/A
	Part, property, retention after test, flammability classification	-	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation	-	N/A
4.3.13.5	Laser (including LEDs)	No LED indicator.	N/A
	Laser class	-	—
4.3.13.6	Other types	-	N/A

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

4.5	Thermal requirements		Pass
4.5.1	Maximum temperatures	(see appended table 4.5)	Pass
	Normal load condition per Annex L	Continuous operation.	Pass
4.5.2	Resistance to abnormal heat	L1 bobbin was tested	Pass

4.6	Openings in enclosures		Pass
4.6.1	Top and side openings	No openings.	Pass
	Dimensions (mm)	-	—
4.6.2	Bottoms of fire enclosures	No openings.	Pass
	Construction of the bottom.....	-	—
4.6.3	Doors or covers in fire enclosures	No doors or covers	Pass
4.6.4	Openings in transportable equipment	Not transportable equipment	N/A
4.6.5	Adhesives for constructional purposes	No adhesive for fixing barrier or screen for fire hazard protection.	N/A
	Conditioning temperature (°C)/time (weeks)	-	—

4.7	Resistance to fire		Pass
4.7.1	Reducing the risk of ignition and spread of flame	-	Pass
	Method 1, selection and application of components wiring and materials	Suitable fire enclosure is provided.	Pass
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	Pass
4.7.2	Conditions for a fire enclosure	-	Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.7.2.1	Parts requiring a fire enclosure	All internal components.	Pass
4.7.2.2	Parts not requiring a fire enclosure	-	N/A
4.7.3	Materials		Pass
4.7.3.1	General	-	Pass
4.7.3.2	Materials for fire enclosures	Enclosure, rated V-0. (See appended table 1.5.1)	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures	Neither components nor other parts outside fire enclosure. (See appended table 1.5.1 as for DC output cable)	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Principal components are V-2 or better. All electrical components are mounted on PCB rated min. V-1.	Pass
4.7.3.5	Materials for air filter assemblies	No air filter assemblies.	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components.	N/A

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS	Pass
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5.1	Touch current and protective conductor current		Pass
5.1.1	General	Touch current only for class II equipment.	Pass
5.1.2	Equipment under test (EUT)	Single power source.	N/A
5.1.3	Test circuit	For TN power system.	Pass
5.1.4	Application of measuring instrument	Fig. D.1 was used as measuring instrument.	Pass
5.1.5	Test procedure	Input polarity was reversed alternatively.	Pass
5.1.6	Test measurements	Fig. D.1	Pass
	Test voltage (V)	264V, 60Hz	—
	Measured touch current (mA)	0.06mA at output terminal and less than 0.01mA at foil wrapped enclosure.	—
	Max. allowed touch current (mA)	0.25	—
	Measured protective conductor current (mA)	-	—
	Max. allowed protective conductor current (mA) ..	-	—
5.1.7	Equipment with touch current exceeding 3.5 mA	-	N/A
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	This equipment is not connected to telecommunication networks.	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system	-	N/A
	Test voltage (V) :	-	—
	Measured touch current (mA) :	-	—
	Max. allowed touch current (mA) :	-	—
5.1.8.2	Summation of touch currents from telecommunication networks..... :	-	N/A

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

5.3	Abnormal operating and fault conditions		Pass
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	Pass
5.3.2	Motors	No motor.	N/A
5.3.3	Transformers	(see appended table 5.3)	Pass
5.3.4	Functional insulation..... :	Method c)	Pass
5.3.5	Electromechanical components	No electromechanical components.	N/A
5.3.6	Simulation of faults	(see appended table 5.3)	Pass
5.3.7	Unattended equipment	No thermostats, temperature limiter and thermal cut-out.	N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire/electrical hazard.	Pass

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

6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
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IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.2.1	Separation requirements	-	N/A
6.2.2	Electric strength test procedure	-	N/A
6.2.2.1	Impulse test	-	N/A
6.2.2.2	Steady-state test	-	N/A
6.2.2.3	Compliance criteria	-	N/A

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

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

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

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

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

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

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		Pass
	Position	Transformer, T1	—
	Manufacturer	(see appended table 1.5.1)	—
	Type	(see appended table 1.5.1)	—
	Rated values	(see appended table 1.5.1)	—
	Method of protection.....	-	—
C.1	Overload test	Tested in Unit. (see appended table 5.3)	Pass
C.2	Insulation	Double or Reinforced Insulation between primary and secondary.	Pass
	Method of protection.....	Bobbin flange and adhesive tape	Pass

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

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		Pass
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Summary of the procedure for determining minimum clearances	-	N/A
G.2	Determination of mains transient voltage (V)	-	N/A

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

H	ANNEX H, IONIZING RADIATION (see 4.3.13)	N/A
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal used	Class II	—

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

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

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction	-	N/A
M.2	Method A	-	N/A
M.3	Method B	-	N/A
M.3.1	Ringling signal	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
M.3.1.1	Frequency (Hz)	-	—
M.3.1.2	Voltage (V)	-	—
M.3.1.3	Cadence; time (s), voltage (V)	-	—
M.3.1.4	Single fault current (mA).....	-	—
M.3.2	Tripping device and monitoring voltage	-	N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage	-	N/A
M.3.2.2	Tripping device	-	N/A
M.3.2.3	Monitoring voltage (V)	-	N/A

N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		N/A
N.1	ITU-T impulse test generators	-	N/A
N.2	IEC 60065 impulse test generator	-	N/A

P	ANNEX P, NORMATIVE REFERENCES		Pass
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Q	ANNEX Q, BIBLIOGRAPHY		Pass
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R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)	-	N/A
R.2	Reduced clearances (see 2.10.3)	-	N/A

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment	-	N/A
S.2	Test procedure	-	N/A
S.3	Examples of waveforms during impulse testing	-	N/A

T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
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U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		Pass
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V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		Pass
V.1	Introduction	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
V.2	TN power distribution systems	-	Pass

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

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

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

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001, Annex ZB and Annex ZC)				N/A	
General	C: Delete all the "country" notes in the reference document according to the following list: 1.5.1 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.1 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2			-	N/A
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.			N/A	
1.5.1	A (SE, Ordinance 1990:944 and CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.			N/A	
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).			N/A	
1.7.2	S (FI, NO, SE): CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:			N/A	
	FI: "Laite on liitettävä suojamaadoitus-koskettimilla varustettuun pistorasiaan"			N/A	
	NO: "Apparatet må tilkoples jordet stikkontakt"			N/A	
	SE: "Apparaten skall anslutas till jordat uttag"			N/A	

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."	-	N/A
1.7.5	S (DK): Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	-	N/A
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	-	N/A
1.7.12	A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des 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): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	-	N/A
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	A (DE, Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	-	N/A
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	-	N/A
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	-	N/A
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.	-	N/A
2.7.1	C: Replace the subclause as follows: <i>Basic requirements</i> To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	-	N/A
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	-	N/A
2.7.2	C: Void.	-	N/A
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	-	N/A
3.2.1.1	S (CH): Supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A SEV 6534-2.1991, Plug type 12, L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998, Plug type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A	-	N/A
	S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If ply-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	S (ES): Supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	-	N/A
	S (GB): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Socket etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	-	N/A
	S (IE): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	-	N/A
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	-	N/A

IEC 60950-1 / EN 60950-1						
Clause	Requirement – Test	Result – Remark	Verdict			
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 0,75¹⁾ Over 6 up to and including 10 (0,75)²⁾ 1,0 Over 10 up to and including 16 (1,0)³⁾ 1,5 In the Conditions applicable to Table 3B delete the words "in some countries" in condition ¹⁾. In Note 1, applicable to Table 3B, delete the second sentence.	-	N/A			
3.2.5.1	S (GB): A power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	-	N/A			
3.3.4	C: In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: <table><tr><td>"Over 10 up to and including 16</td><td>-</td><td>N/A</td></tr></table> Delete the fifth line: conductor sizes for 13 to 16 A.	"Over 10 up to and including 16	-	N/A	- -	N/A N/A
"Over 10 up to and including 16	-	N/A				
3.3.4	S (GB): The range of conductor sizes of flexible cords to be accepted by terminals for equipment with A RATED CURRENT of over 10 A up to and including 13 A is: - 1,25 mm² to 1,5 mm² nominal cross-sectional area.	-	N/A			
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 and the plug part OF DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.	-	N/A			
	S (IE): DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	-	N/A			
4.3.13.6	C: Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.	-	N/A			

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and - is subject to ROUTING TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a service person.	-	N/A
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	-	N/A
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	-	N/A
Annex H	C: Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 μ Sv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete Note 2.	-	N/A
Annex P	C: Replace the text of this annex by: See annex ZA.	-	N/A
Annex Q	C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.	-	N/A

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

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	EN ISO 178:1996	ISO 178:1993	
	EN ISO 179 Series	ISO 179 Series	
	EN ISO 180:2000	ISO 180:1993	
	—	ISO 261:1998	
	—	ISO 262:1998	
	EN ISO 527 Series	ISO 527 Series	
	—	ISO 386:1984	
	EN ISO 4892 Series	ISO 4892 Series	
	—	ISO 7000:1989	
	EN ISO 8256:1996	ISO 8256:1990	
	—	ISO 9772:1994	
	EN ISO 9773:1998	ISO 9773:1998	
	—	ITU-T:1988 Recommendation K.17	
	—	ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
Top / bottom Enclosure	GE Plastic	CH6410	PC+ABS, V-0, t=2.0mm	UL94, UL746	UL (QMFZ2)	
PCB	Various	Various	V-0, 130°C	UL94, UL796	UL (ZPMV2)	
Supply cord set	Various	Various	--	--	--	
Ex. For North America	Various	Various	Detachable, > 1.5m and < 4.5m long, rated 125V, 7A, Type SPT-2 or NISPT-2, 2×18AWG flexible cord, marked VW- 1;one end terminates in polarized or non- polarized parallel-blade non-grounding type attachment plug, Other end in appliance coupler.	--	UL, CSA	
Appliance inlet	Nicoon Industry Co., Ltd.	NC-133L-D- 1.6-K	AC250V, 2.5A, Standard sheet C8	IEC/EN60320-1	VDE, SEMKO UL (AXUT2)	
Transformer/ T1	Tamura Corp.	TO-5831	Class B Core: Ferrite, 25 ×28×12mm	--	Tested in the unit.	
Insulation system	Tamura Corp.	SBI4 Class 130(B)	600V	UL1446	UL (OBJY2)	
TIW as sec. coil	Furukawa Electric Co., Ltd.	TEX-E	Class B	IEC/EN60950 UL2353	VDE, UL (OBJT2)	
Bobbin	Sumitomo Bakelite Co., Ltd.	PM-9820 or PM-9720	V-0, Phenolic, 150°C, t=0.75mm	UL94, UL746	UL (QMFZ2)	

IEC 60950-1 / EN 60950-1					
Clause	Requirement – Test		Result – Remark		Verdict
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Inductor/ L1	TOKYO PARTS	0R7A223F24Y NP	AC250V, 0.7A, Class E	--	Tested in the unit.
Bobbin	Chang Chun Plastics Co., Ltd.	4115	PBT, V-0, 120°C	UL94, UL746	UL (QMFZ2)
Alternate for L1	KORIN	HL-24R-E223	AC250V, 0.7A, Class E	--	Tested in the unit.
Bobbin	Chang Chun Plastics Co., Ltd.	4115	PBT, V-0, 120°C	UL94, UL746	UL (QMFZ2)
Fuse/ F1	LITTEL FUSE	215	T3.15AH, AC250V	IEC/EN60127 UL248	SEMKO, PSE UL (JDYX2)
Varistor/ VS1	Matsushita	ERZV10D471D (471U)	470V	IEC61051-1 IEC61051-2/ CECC42200	VDE, PSE, UL (XUHT2)
Bleeder resistor/ R1, R2	Various	Various	220kΩ, 1/8W	--	--
Silicone tube for IC2	NIKKAN INDUSTRIES CO., LTD.	S-693-600	VW-1, 200°C, 600V	--	UL (UZFT2)
Compound used in above tube	MOMENTIVE PERFORMANC E MATERIALS JAPAN L L C	TSE3941	V-1, 105°C	UL94, UL746	UL (QMFZ2)
Opto Coupler/ PHC1	NEC Compound Semiconductor Devices Ltd.	PS2561A-1-V- A (PS2561A-1)	Reinforced type, 100°C	IEC/EN60950 UL1577	BSI, CSA, UL (FPQU2)
X-capacitor / C1	Alcotronics (Nissei Corp)	R.46	AC275V, 0.33μF, X2, 40/100/56/C	IEC60384-14 EN132400 UL1414	ENEC-IMQ, CSA, UL (FOWX2)
Alternate for C1	Matsushita Electric Industries Co., Ltd.	ECQUL	AC275V, 0.33μF, X2, 40/100/21/C	IEC60384-14 EN132400 UL1414	VDE, SMKO, CSA, UL (FOWX2)

IEC 60950-1 / EN 60950-1					
Clause	Requirement – Test		Result – Remark		Verdict
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾
Bridging capacitor/ C15	Murata Manufacturing	KX	AC250V, 470pF, Y1, 25/125/21/C	IEC60384-14 EN132400 UL1414	BSI, SEV, SEMKO, VDE, FIMKO, NEMKO, DEMKO, IMQ CSA, UL (FOWX2)
Alternate for C15	TDK Corporation	CD	AC250V, 470pF, Y1, 25/125/21/B	IEC60384-14 EN132400 UL1414	VDE, SEMKO, SEV, UL (FOWX2)
DC output cable	Chiang Yu Enterprise Inc	10922	AWG18, 1.2m, VW-1, 30V, 80°C	UL758	UL (AVLV2)
Marking and Labeling Systems	E-LIN ADHESIVE LABEL CO., LTD.	EL-15	Polyester film	--	UL (PGDQ2.MH1 6283)
D1, as reference only	Shindengen	D2SB60-7001	600V, 1.5A	--	--
C2, as reference only	Chemicon	EKXG401ELL8 20MM25S	82µF, 400V	--	--
1) an asterisk indicates a mark which assures the agreed level of surveillance					

1.6.2	TABLE: electrical data (in normal conditions)					Pass
fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status
F1	-	90, 50/60Hz	36.5 / 36.5	0.697 / 0.712	0.697 / 0.712	Resistor load/ DC12V, 2.5A
Ditto	0.7	100, 50/60Hz	36.0 / 36.0	0.642 / 0.657	0.642 / 0.657	Ditto
Ditto	0.7	120, 50/60Hz	35.5 / 35.5	0.567 / 0.580	0.567 / 0.580	Ditto
Ditto	0.7	240, 50/60Hz	35.0 / 35.0	0.367 / 0.357	0.367 / 0.357	Ditto
Ditto	-	264, 50/60Hz	35.1 / 35.1	0.342 / 0.333	0.342 / 0.333	Ditto
supplementary information						
-						

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IEC 60950-1 / EN 60950-1						
Clause	Requirement – Test			Result – Remark		Verdict
2.5	TABLE: limited power source					Pass
Measured	Fault condition	Uoc [V]	Isc [A]	S [VA]		Result in Table 2B
				Limit	Measured	
DC output	(Normal)	12.2	3.1	61.0	36.8	Pass
ditto	D4, shorted	12.2	3.6	61.0	42.4	Pass
ditto	D5, shorted	0.0	0.0	# 61.0	0.0	Pass
ditto	Q4 B-E, shorted	12.2	3.1	61.0	36.8	Pass
ditto	Q4 C-E, shorted	0.0	0.0	# 61.0	0.0	Pass
ditto	Q5 B-E, shorted	12.2	3.1	61.0	36.8	Pass
ditto	Q5 C-E, shorted	0.0	0.0	# 61.0	0.0	Pass
ditto	IC1 1-4, shorted	12.2	4.2	61.0	49.5	Pass
ditto	IC1 3-4, shorted	0.0	0.0	# 61.0	0.0	Pass
ditto	PHC1, 1-2, shorted	18.3	0.0	91.5	0.0	Pass
ditto	PHC1, 3-4, shorted	0.0	0.0	# 61.0	0.0	Pass
ditto	IC2 A-K, shorted	1.1	4.0	5.5	2.8	Pass
ditto	C10, shorted	12.3	3.2	61.5	38.4	Pass
supplementary information						
Input: 264V, 60Hz Isc [A] Limit: 8 A S [VA] Limit: 5 × Uoc VA # 61.0: limit value in normal condition						

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

2.10.2	TABLE: determination of working voltage		Pass
measured between:	R.M.S. voltage (V)	Peak voltage (V)	
T1, pin 2 to pin 8	257 (maximum)	475 (maximum)	
T1, pin 2 to pin 12	243	458	
T1, pin 3 to pin 8	213	350	
T1, pin 3 to pin 12	214	404	
T1, pin 5 to pin 8	212	350	
T1, pin 5 to pin 12	214	362	
T1, pin 6 to pin 8	212	345	
T1, pin 6 to pin 12	214	358	
T1, pin 7 to pin 8	215	425	
T1, pin 7 to pin 12	212	362	
T1, pin 8 to pin 12	25.9	65.0	
PC1, pin 1 to pin 3	221	358	
PC1, pin 1 to pin 4	220	354	
PC1, pin 2 to pin 3	221	358	
PC1, pin 2 to pin 4	219	354	
supplementary information			
Input: AC240V, 60Hz			

IEC 60950-1 / EN 60950-1						
Clause	Requirement – Test			Result – Remark		Verdict
2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					Pass
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Primary pattern traces to outer enclosure, as reinforced	340	240	4.0	8.0	4.8	8.0
Primary component (F1) to outer enclosure, as reinforced	340	240	4.0	7.1	4.8	7.1
Primary pattern traces on PCB to accessible screw head, as reinforced	340	240	4.0	7.2	4.8	7.2
Primary component (D1) to accessible screw head, as reinforced	340	240	4.0	7.8	4.8	7.8
Primary opposite pattern traces on PCB (appliance inlet), as functional	340	240	1.5	3.0	2.4	3.0
Primary component (C5) to outer enclosure, as reinforced	475 max.	257 max.	4.2	6.1	5.2	6.1
T1, primary core to SELV component (D7), as reinforced	475 max.	257 max.	4.2	6.5	5.2	>10
T1, primary core to SELV component body (IC2), as reinforced	475 max.	257 max.	4.2	6.8	5.2	6.8
T1, primary core to SELV lead (IC2), as reinforced	475 max.	257 max.	4.2	5.6	5.2	5.6
T1, primary core to SELV lead (C15), as reinforced	475 max.	257 max.	4.2	7.0	5.2	7.0
T1, primary to secondary terminal, as reinforced	475 max.	257 max.	4.2	>24	5.2	>24
T1, primary core to secondary bear lead/terminal, as reinforced	475 max.	257 max.	4.2	6.8	5.2	6.8
Primary to secondary pattern traces on PCB (PHC1), as reinforced	475 max.	257 max.	4.2	6.1	5.2	6.1
Primary to secondary pattern traces on PCB (C15), as reinforced	475 max.	257 max.	4.2	6.1	5.2	6.1
supplementary information						
T1 core is considered as primary parts, also TIW was used for secondary winding.						

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

2.10.5	TABLE: distance through insulation measurements				Pass
distance through insulation di at/of:		Up (V)	test voltage (V)	required di (mm)	di (mm)
Enclosure		475	AC3000	0.4	2.0
Silicone tubing for IC2		475	AC3000	0.4	0.5
Cross-over insulation between primary and secondary coil in T1		475	AC1707	1 layer	0.025
supplementary information					
T1 secondary: TIW					

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

4.5	TABLE: maximum temperatures								Pass	
	test voltage (V).... :	See bellow.							—	
	t _{amb2} (°C)..... :	40 (adjusted)							—	
maximum temperature T of part/at:		T (°C)							allowed	
Condition		A	B	C	D	E	F	G	H	T _{max} (°C)
Appliance inlet		59	50	59	50	60	49	61	50	70
X-capacitor C1		72	58	72	59	71	57	72	58	100
Inductor L1 coil		97	65	97	65	93	62	93	64	105 ^{#1}
Rectifier D1		98	68	99	68	99	68	100	69	130 ^{#2}
Electrolytic capacitor C2		96	85	97	85	95	83	97	84	105 ^{#3}
Heatsink for Q1		104	92	105	92	103	90	105	91	130 ^{#2}
Transformer T1 coil		97	96	97	96	97	94	98	95	110 ^{#4}
Transformer T1 core		93	93	93	93	93	92	95	93	-
Optical Isolator PHC1		86	83	86	83	89	85	90	85	100
Bridging capacitor C15		80	79	80	78	81	79	83	80	125
Heatsink for D7		106	105	107	105	105	103	106	103	130 ^{#2}
Enclosure, bottom inside		85	84	85	84	78	78	80	79	-
Enclosure, top inside		82	83	82	82	87	85	88	86	-
Enclosure, bottom outside		79	79	80	78	71	70	72	70	95
Enclosure, top outside		70	70	71	70	76	74	78	75	95
supplementary information										
Condition A: 90V, 60Hz , normal position (Screw heads are the under side.)										
Condition B: 264V, 60Hz , normal position (Screw heads are the under side.)										
Condition C: 90V, 50Hz , normal position (Screw heads are the under side.)										
Condition D: 264V, 50Hz , normal position (Screw heads are the under side.)										
Condition E: 90V, 60Hz , reverse position (Screw heads are the upper side.)										
Condition F: 264V, 60Hz , reverse position (Screw heads are the upper side.)										
Condition G: 90V, 50Hz , reverse position (Screw heads are the upper side.)										
Condition H: 264V, 50Hz , reverse position (Screw heads are the upper side.)										
Resistor load/ 12VDC, 2.5A										
#1: as Class E										
#2: as PCB										
#3: by JIS										
#4: as Class B										

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
4.5.2	TABLE: ball pressure test of thermoplastic parts		Pass
	allowed impression diameter (mm).....:	≤ 2 mm	—
part		test temperature (°C)	impression diameter (mm)
L1 bobbin, type 4115, by Chang Chun Plastics		125	1.0
supplementary information			
-			

4.7	TABLE: resistance to fire				Pass
part	manufacturer of material	type of material	thickness (mm)	flammability class	
Top / bottom Enclosure	GE Plastic	CH6410	2.0	V-0	
supplementary information					
See table 1.5.2.					

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests		Pass
test voltage applied between:		test voltage (V) a.c. / d.c.	breakdown Yes / No
Primary to enclosure		3000AC	No
Primary to output connector		3000AC	No
supplementary information			
-			

IEC 60950-1 / EN 60950-1						
Clause	Requirement – Test				Result – Remark	
5.3	TABLE: fault condition tests					Pass
	ambient temperature (°C)				25-26	—
	model/type of power supply				-	—
	manufacturer of power supply				-	—
	rated markings of power supply				-	—
Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	Result
<i>- SELV RELIABILITY TEST -</i>						
D7	S-C	264	-	-	-	Output: 12.2V→0.0V Shut down immediately, no output in SELV. No electrical hazard.
IC2, A-K	S-C	264	-	-	-	Output: 12.2V→1.0V d.c. No electrical hazard.
PHC1, 1-2	S-C	264	-	-	-	Output: 12.2V→18.3V peak No electrical hazard.
<i>- FAULT CONDITION TEST -</i>						
D1, + to ~	S-C	264	<1 sec.	F1	15A max.	F1 (T3.15AH) opened. No fire/electrical hazard.
C2	S-C	264	<1 sec.	F1	15A max.	F1 (T3.15AH) opened. No fire/electrical hazard.
Q1, D-S	S-C	264	<1 sec.	F1	15A max.	Q1, D11, D12 damaged, and then R10, F1 (T3.15AH) opened. No fire/electrical hazard.
C5	S-C	264	2 hours	-	-	Output shutdown. T1: 38°C at 26°C No component damaged. No fire/electrical hazard.
C10	S-C	264	4 hours	-	-	Normal output, T1 heated and stabilized. T1: 103°C at 26°C No component damaged. No fire/electrical hazard.

IEC 60950-1 / EN 60950-1						
Clause	Requirement – Test			Result – Remark		Verdict
Component No.	Fault	Test voltage (V)	Test time	Fuse No.	Fuse current (A)	Result
- OVER LOAD -						
T1, secondary	Overload, 3.1A (at C12)	264	6 hours	-	-	T1 heated and stabilized. T1: 106°C at 27°C No fire/electrical hazard.
T1, secondary	Overload, 3.2A (at C12)	264	1 hour	-	-	Unit shutdown. No fire/electrical hazard.
Output connector	S-C	264	3 hours	-	-	No fire/electrical hazard. T1: 34°C at 25°C
supplementary information						
Same results in 50 or 60Hz input.						

Appendix CA/US		
Clause	Requirement/Comments	Verdict

National Deviations for CANADA and UNITED STATES to IEC 60950-1, 1 st ed	
CA	US
Canada and the United States of America have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950-1/UL60950-1, First Edition, which is based on IEC 60950-1, First Edition. Effective April 1, 2003, this standard may be used for product certification immediately, however, the previous version of the standard may also be used until July 1, 2006. <i>Note: The previous version is CAN/CSA C22.2 No.60950-00/UL 60950 Third Edition, based on IEC 60950, 3rd Edition. Refer to the "IEC 60950, 3rd Edition, CA" section of this CB bulletin for the national differences in this version of the standard.</i> This bi-national standard should be consulted for further details on the Special National Conditions and Other Differences summarized below.	The United States of America and Canada have adopted a single, bi-national standard, CAN/CSA C22.2 No. 60950-1/UL60950-1, First Edition, which is based on IEC 60950-1, First Edition. This bi-national standard should be consulted for further details on the national conditions and differences summarized below.

Appendix CA/US	
SPECIAL NATIONAL CONDITIONS	
CA	US
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. Notes: "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.	The following is a summary of the key national differences based on national regulatory requirements, such as the National Electrical Code (NEC), ANSI/NFPA 70-2002, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations.

Appendix CA/US		
Clause	Requirement/Comments	Verdict
1.1.1 B109A	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75. Comments:	Pass
1.4.14 B109A	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A. Comments:	Pass

National Deviations for CANADA and UNITED STATES		
Clause	Requirement/Comments	Verdict
1.5.5 B109A	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC. For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings. Comments: Secondary output cable is 1.2m long.	N/A
1.7.1 B109A	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 "Normal Operating Conditions." Likewise, a voltage rating shall not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions." Comments: Single phase model.	N/A
2.5 B109A	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. Comments: LPS was not limited by a fuse.	N/A
2.7.1 B109A	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch circuit protection is not suitable. Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection. Comments:	N/A
3.2 B109A	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC/CEC. Comments:	N/A

Appendix CA/US		
Clause	Requirement/Comments	Verdict
3.2.1 B109A	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment. Comments: An appliance inlet.	Pass
3.2.3 B109A	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs. Comments:	N/A
3.2.5 B109A	Power supply cords are required to be no longer than 4.5 m in length. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC. Comments: No longer than 4.5m, Type SPT-2 or NISPT-2, 18AWG	Pass
3.2.9 B109A	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space. Comments:	N/A
3.3 B109A	Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0. Comments:	N/A

National Deviations for CANADA and UNITED STATES		
Clause	Requirement/Comments	Verdict
3.3.3 B109A	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3mm ²). Comments:	N/A
3.3.4 B109A	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified (1.7.7). Comments:	N/A
3.4.2 B109A	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). Comments:	N/A
3.4.8 B109A	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position. Comments:	N/A
3.4.11 B109A	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. Comments:	N/A
4.3.12 B109A	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30. Comments:	N/A
4.3.13	Equipment with lasers is required to meet the Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	N/A

Appendix CA/US		
Clause	Requirement/Comments	Verdict
B109A	Comments:	
4.7 B109A	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/A
	Comments:	
4.7.3.1 B109A	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/A
	Comments:	
Annex H B109A	Equipment that produces ionizing radiation is required to comply with the Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	N/A
	Comments:	

Appendix CA/US National Deviations for CANADA and UNITED STATES	
OTHER DIFFERENCES	
The following key national differences are based on requirements other than national regulatory requirements.	
1.5.1	
CA The following key national differences are based on requirements other than national regulatory requirements. The bi-national standard (CAN/CSA C22.2 No 60950-1/ UL 60950-1, First Edition) referenced above should be consulted for further details on the national differences summarized below.	US The following key national differences are based on requirements other than national regulatory requirements.

Appendix CA/US		
Clause	Requirement/Comments	Verdict
	Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the applicable national (Canadian and/or U.S.) component or material standards, as far as they may apply. The acceptance will be based on the following: A 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. 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. 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. Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory.	Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include: attachment plugs, battery packs (rechargeable type, used with transportable equipment), cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, surge suppressors, switches (including interlock switches), thermal cutoffs, thermostats, multi-layer transformer winding wire, tubing, wire connectors, and wire and cables.
Comments:		Comments:

National Deviations for CANADA and UNITED STATES		
Clause	Requirement/Comments	Verdict
2.3.1 B109A	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.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/A
	Comments:	
2.3.2 B109A	In the event of a single fault, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.	N/A
	Comments:	
2.6.3.4 B109A	When subject to impedance testing, protective earthing and bonding are required to be subjected to the additional test conditions specified.	N/A
	Comments:	

Appendix CA/US		
Clause	Requirement/Comments	Verdict
3.2.1.2 B109A	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instructions requirements.	N/A
	Comments:	
4.2.8.1 B109A	Enclosures around CRTs with a face diameter of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.	N/A
	Comments:	
4.3.2 B109A	Equipment with handles is required to comply with special loading tests.	N/A
	Comments:	
5.1.8.3 B109A	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	N/A
	Comments:	
6.2.1 B109A	Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.	N/A
	Comments:	
6.4 B109A	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/A
	Comments:	
6.5 B109A	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/A
	Comments:	
M.2 B109A	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	N/A
	Comments:	

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions		N/A
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20 A		Pass
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of UL component standards in Annex P.1	See appended table 1.5.1.	Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of UL component standards (A. P.2.)	See appended table 1.5.1.	Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.	AWG18, 1.2m long is used.	Pass
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.	Secondary output is LPS.	N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the National Electrical Code	Non-detachable secondary output cable is 1.2m long.	N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A
1.5.5	Telephone line and extension cords and the like comply with UL 1863		N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor		N/A

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring		N/A
2.1.1	Screw shell of Edison-base lampholder tied to the neutral conductor		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4	No TNV	N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions		N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4		N/A
2.3.2	Enamel coating on signal transformer winding wire allowed as an alternative to Basic insulation in specific telecommunication applications when subjected to special construction requirements and routine testing		N/A
2.3.2	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts		N/A
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with higher rated devices, if operator replaceable	A fuse was not used for LPS limiter.	N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.	Class II model.	N/A
2.6.3.3	For Pluggable Equipment Type A, if neither a) or b) are applicable, the current rating of the circuit is taken as 20 A.		N/A

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the National Electrical Code		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.4	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.4 and Annex U.	TIW, Furukawa, TEX-E is R/C (OBJT2)	Pass
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.		Pass
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		Pass
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the National Electrical Code		N/A
3.2.1	Permitted use for flexible cords and plugs.	An appliance inlet.	Pass
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		Pass
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the National Electrical Code		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm ²) and not less than 152 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Length of power supply cord limited to between 1.5 and 4.5 m unless shorter length used when intended for a special installation.	1.5m < supply cord length < 4.5m	Pass
3.2.5	Conductors in power supply cords sized according to National Electrical Code	18AWG	N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.	SPT-2 or NISPT-2	N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.	Output cable	Pass
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.	An appliance inlet.	N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated.		N/A

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm ²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the United States		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 mechanical assembly requirements.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30 (Table NAE.6).		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 mm ³ of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22© of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.93 m ² or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.	SELV and LPS output cable	N/A
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.		N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.6	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.		N/A
5.3.6	Tests interrupted by opening of a component repeated two additional times.		Pass
5.3.8.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.		N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.2.1	Special requirements for enameled wiring used as electrical separation provided between parts connected to telecommunication network and telecommunication circuitry intentionally isolated from network.		N/A
6.2.1	Digital line termination equipment (e.g., NCTE) subject to separation requirements.		N/A

USA - National Differences to IEC 60950-1:2001, First Edition			
Clause	Requirement + Test	Result - Remark	Verdict
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
6.5	Acoustic pressure from an ear piece less than 136 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets, and 121 dBA for insert earphones, for long duration disturbances.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the National Electrical Code		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A

ADDITIONAL TEST

STRAIN RELIEF TEST:

Output cable strain relief, the output cable was subjected to a 20 lb pull for 1 min.

Model	Angle of pull	Observations
AP13015A	90°	No damage

Japan Differences to J60950 (H16) based on CB Bulletin No. 112A			
Clause	Requirement + Test	Result - Remark	Verdict
1.2	Addition: Add the following terms. Equipment, Class 0I 1.2.4.101 Material, VTM 1.2.12.101	Class II equipment.	N/A
1.2.4.101	Addition: CLASS 0I EQUIPMENT: Equipment where protection against electric shock is achieved by: a) using BASIC INSULATION, and b) 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 if the BASIC INSULATION fails, and c) using a supply cord without earthing conductor and a 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/A
1.2.12.1	Replacement: 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. 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. 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. 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.	Replaced.	Pass
1.2.12.101	Addition: 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.	Added.	N/A

Japan Differences to J60950 (H16) based on CB Bulletin No. 112A			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.101	Addition: Marking for CLASS 0I EQUIPMENT For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body: "Provide an earthing connection" 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: "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."	Class II equipment.	N/A
2.1.1.1	Replacement: Replace "IEC 60083" to "IEC 60083 or JIS C 8303" in 2.1.1.1 b).	Replaced.	Pass
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.	Class II equipment.	N/A
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:	Class II equipment.	N/A
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 150V. 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.	Class II equipment.	N/A
3.2.5	Delete 1) in Table 3B.	Deleted.	N/A
4.2.8	Addition: Add the following informative remark after the last sentence. Remark - IEC 61965 is also applicable instead of IEC 60065.	No CRT.	N/A

Japan Differences to J60950 (H16) based on CB Bulletin No. 112A			
Clause	Requirement + Test	Result - Remark	Verdict
4.5.1	Addition: Add the following to suffix 5) as specified in "Conditions applicable to Table 4A, Parts 1 and 2". 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. Add a suffix 7) in "Conditions applicable to Table 4A, Parts 1 and 2". 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)". Add 7) to Table 4A, Part 2 as follows. (OFF) IEC 60950, 3rd ed 941 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).	Added.	Pass
4.7.3.2	Addition: Add the following in 7th paragraph. - for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better.	Minimum VTM-1 or V-1.	Pass
5.1.6	Replacement: Replace Table 5A.	Replaced.	Pass
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;	Class II equipment	N/A
Annex A	Addition: Add the subclause A.101 with the title "Flammability tests for classifying materials VTM" and the following: Thin sheet materials shall comply with ISO 9773.	Added.	N/A
Annex G	Addition: Add the following to the Note for Table G.1. 2. In Japan, MAINS TRANSIENT VOLTAGE for equipment with a Nominal AC MAINS SUPPLY VOLTAGE of 100V is to be decided based on the column where Nominal AC MAINS SUPPLY VOLTAGE in Table G.1 is 150V.	Added.	N/A
Annex P	Addition: Add "IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes".	Added.	N/A

Japan Differences to J60950 (H16) based on CB Bulletin No. 112A			
Clause	Requirement + Test	Result - Remark	Verdict
U.2.1	Replacement: Electric strength The test sample is prepared according to IEC 60851-5:1996, 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: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V, or; - for REINFORCED INSULATION, 6000 V.	Tested to Annex U by VDE, BSI or TUV.	Pass
U.2.2	Replacement: Flexibility and adherence 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 be the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V.	-	Pass
Table U.1	Replacement: Mandrel diameter 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 $\pm$ 10 % (118 N/mm² $\pm$ 10 %).	-	Pass
U.2.3	Replacement: Replace the first paragraph with the following. Test 9 of IEC 60851-6:1996, followed by the electric strength test of 5.2.2 of this standard except applying the test voltage between the wire and the mandrel. A test voltage shall be the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V.	-	Pass
U.2.4	Replacement: Replace the third paragraph describing the test voltage with the following. The test voltage shall not be less than the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or; - for REINFORCED INSULATION, 3000 V. It is applied between the shot and the conductor.	-	Pass

Japan Differences to J60950 (H16) based on CB Bulletin No. 112A			
Clause	Requirement + Test	Result - Remark	Verdict
U.3.1	Replacement: Replace with the following. The test voltage for ROUTINE TESTING shall be the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V r.m.s. or 2100 V peak, or; - for REINFORCED INSULATION, 3000 V r.m.s. or 4200 V peak.	-	Pass
U.3.2	Replacement: Replace with the following. Twisted pair samples shall be tested in accordance with IEC 60851-5:1996, 4.4.1. The minimum breakdown 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: - for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V r.m.s. or 4200 V peak, or; - for REINFORCED INSULATION, 6000 V r.m.s. or 8400 V peak.	-	Pass

Table 5A			
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	CLASS 0I EQUIPMENT	-	5 % of input current
- subject to the conditions of 5.1.7		-	5 % of input current
HAND-HELD	Equipment main protective earthing terminal (if any)	0,5	-
Others	CLASS 0I EQUIPMENT	1,0	-

¹⁾ If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.

Japan Differences to J60950 (H16) based on CB Bulletin No. 112A

Clause	Requirement + Test	Result - Remark	Verdict
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Table U.1

Nominal Conductor diameter mm	Mandrel diameter mm $\pm$ 0,2 mm
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⁾

¹⁾ in compliance with IEC 60317-43.

Fig.1

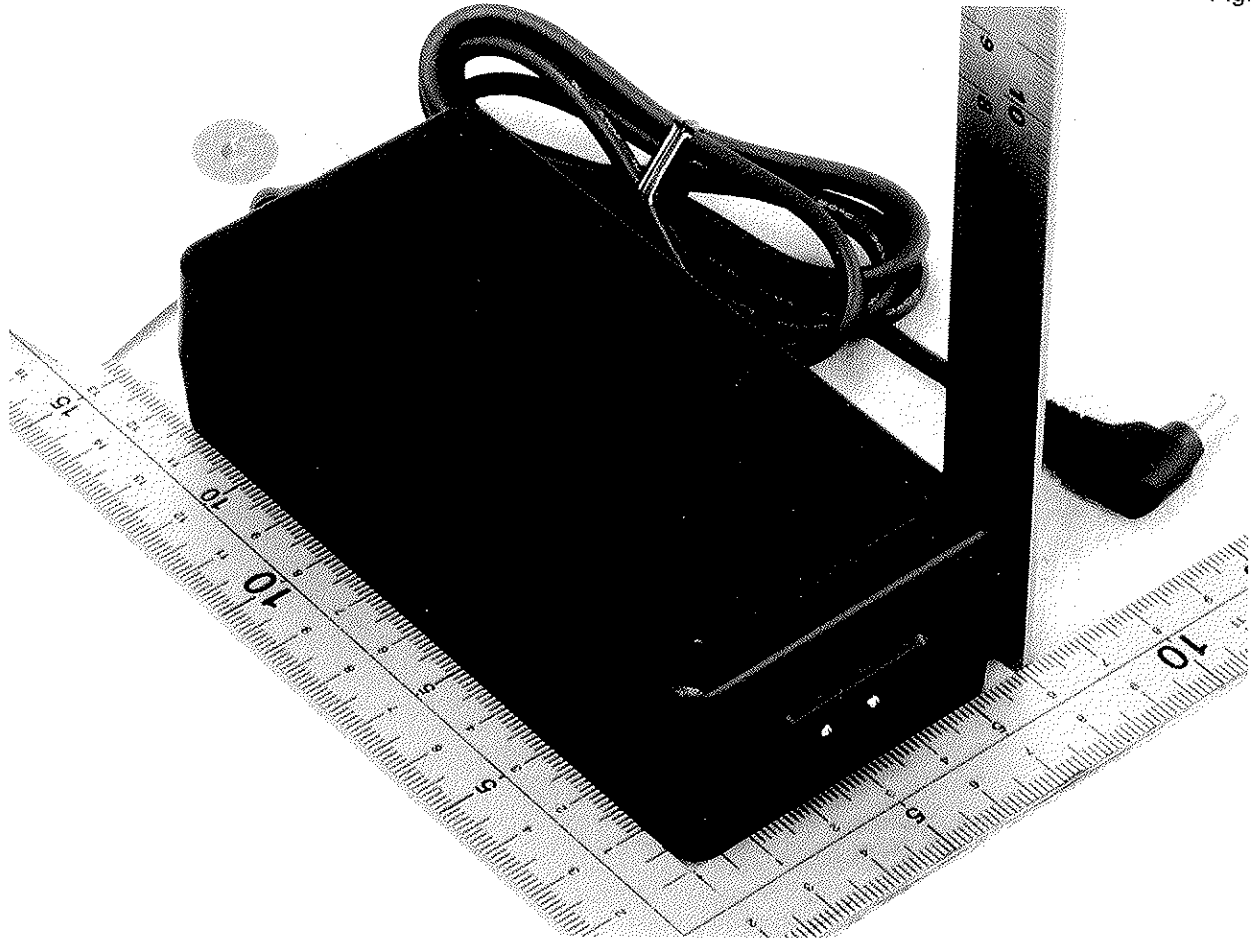


Fig.2



Fig.3

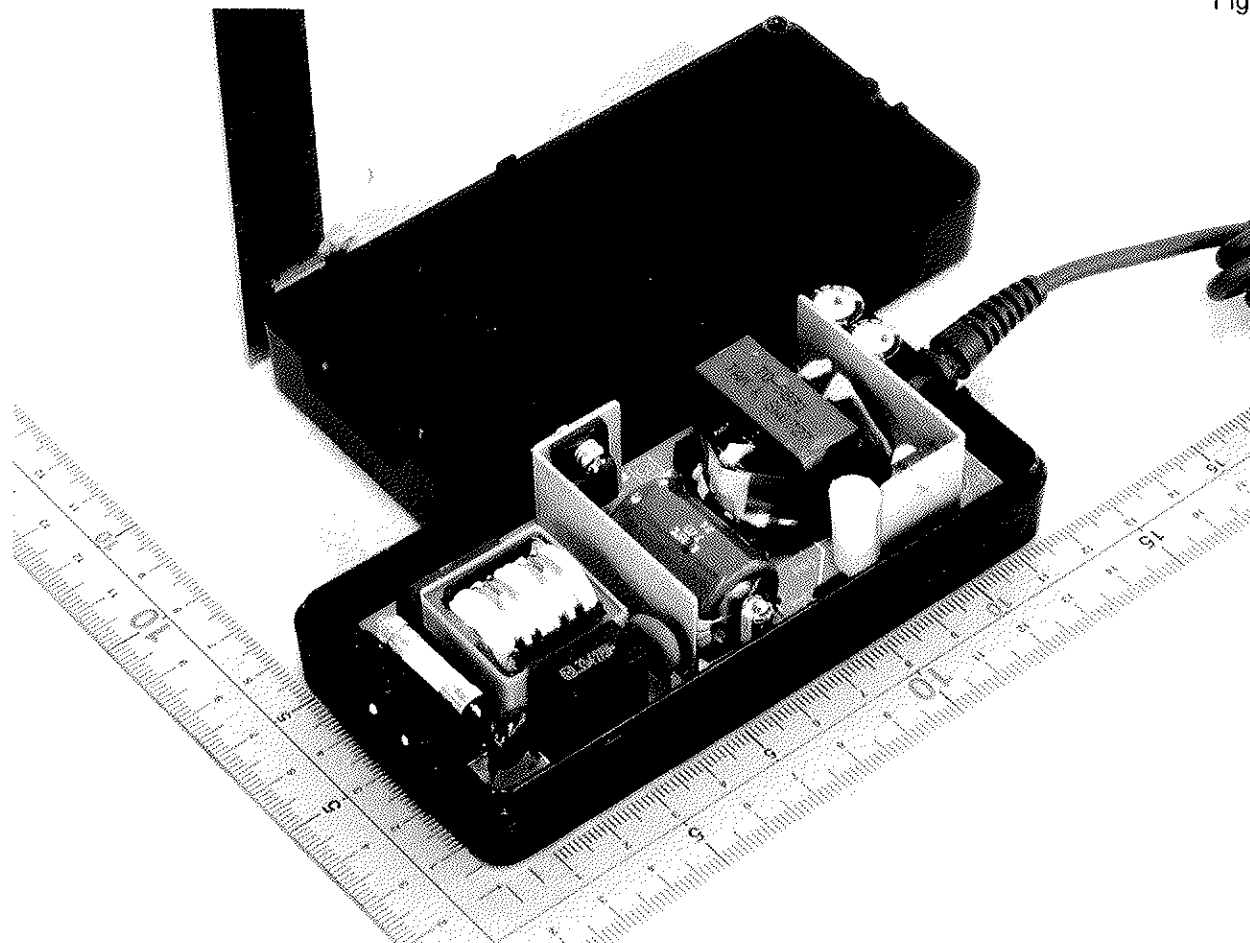


Fig.4

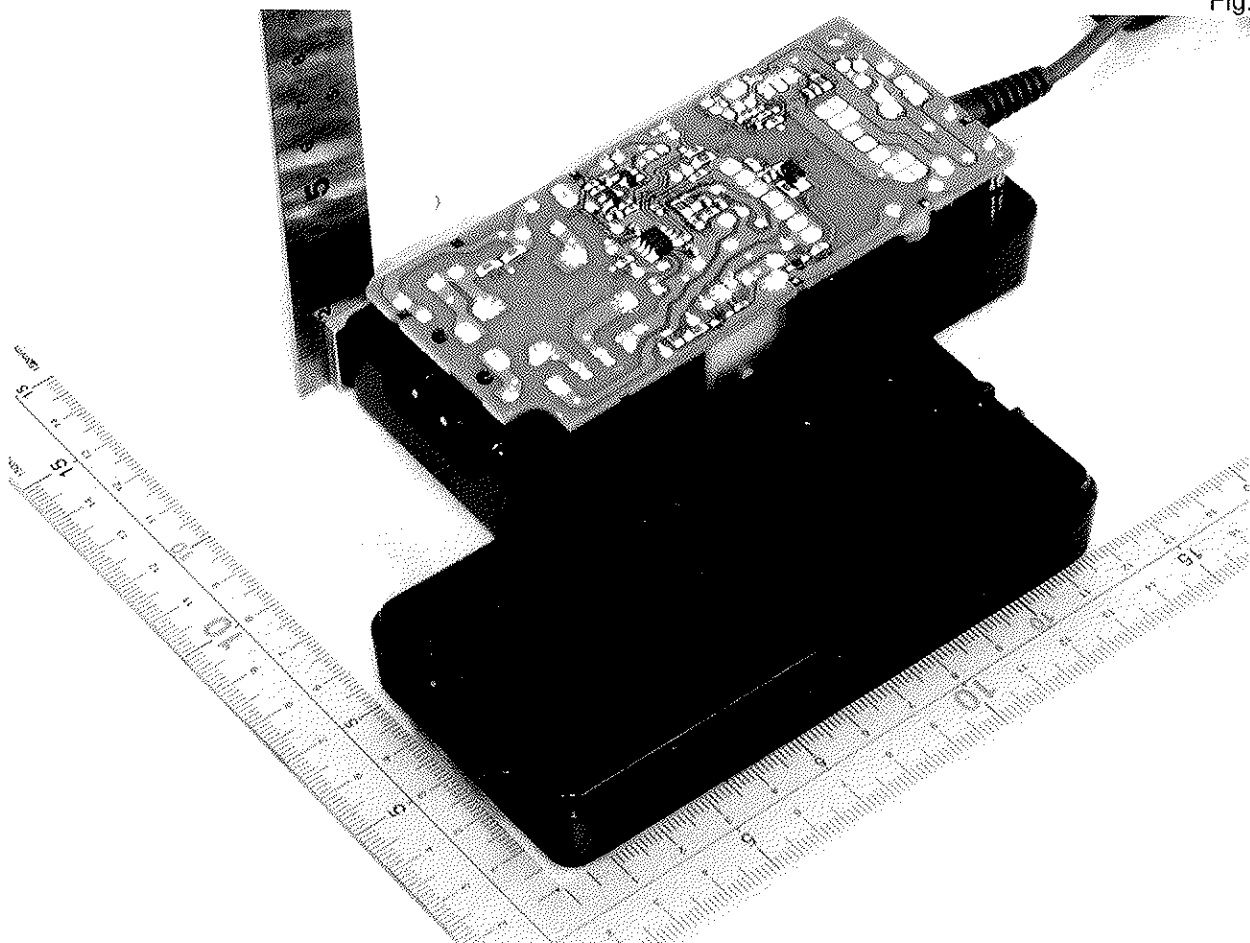


Fig.5

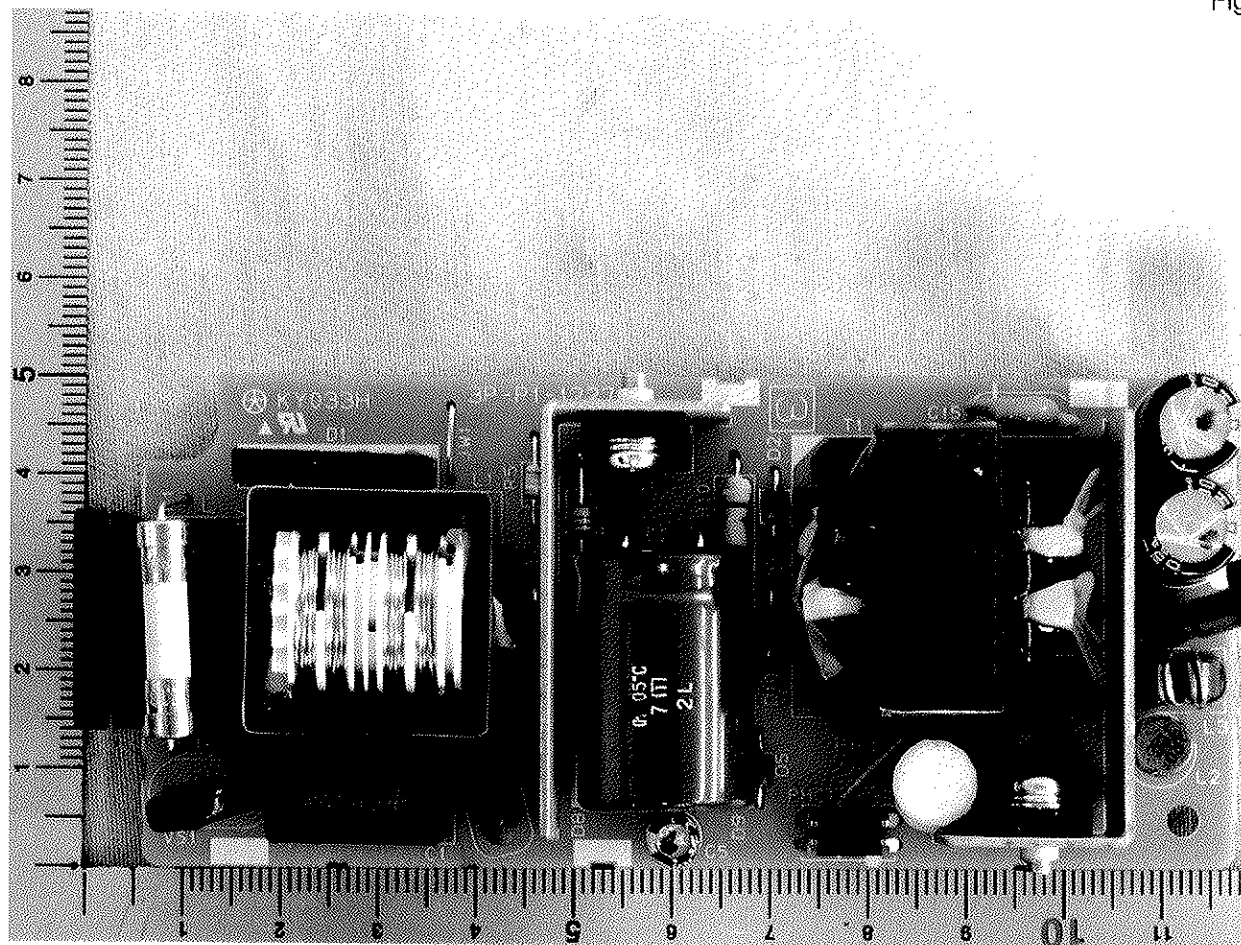
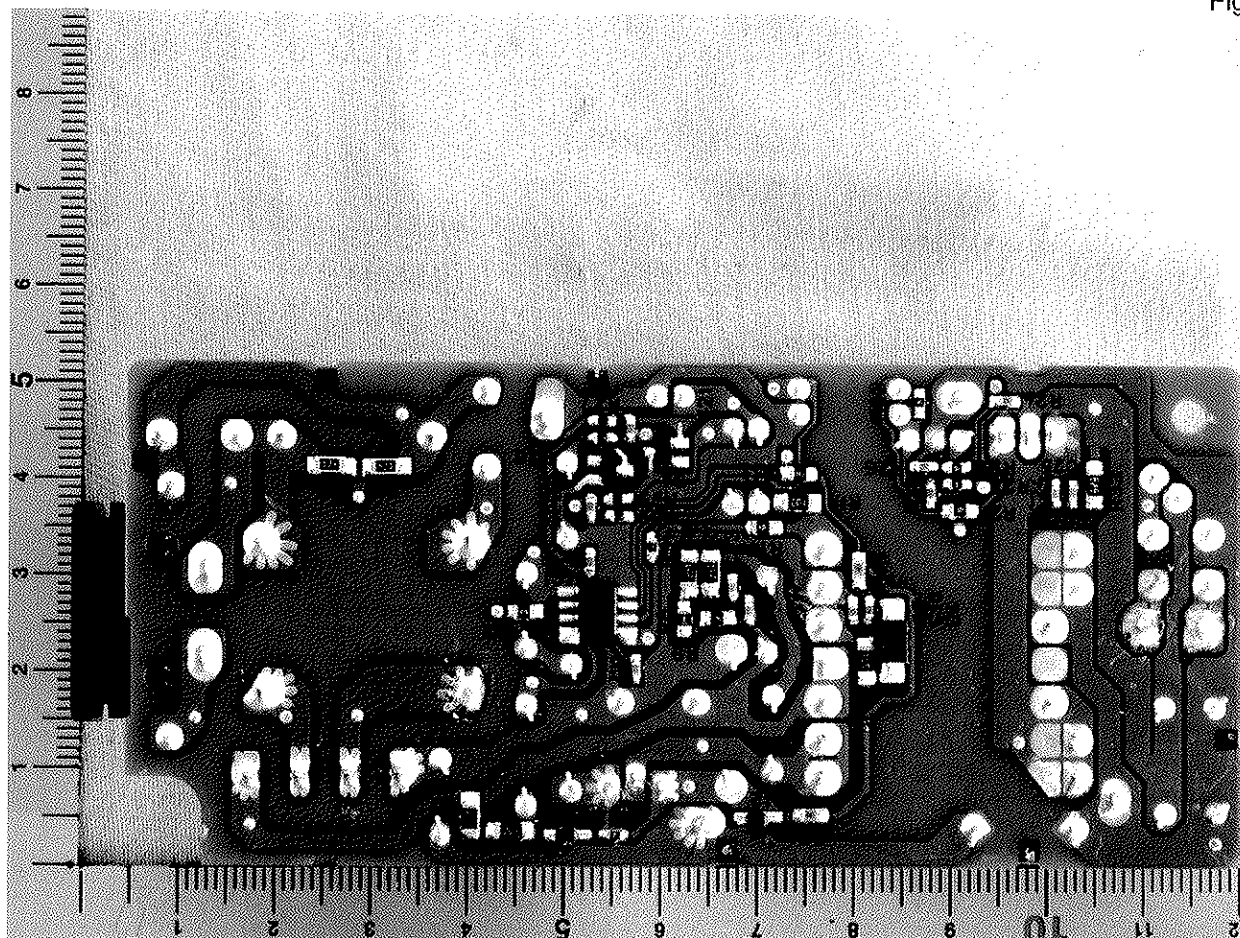
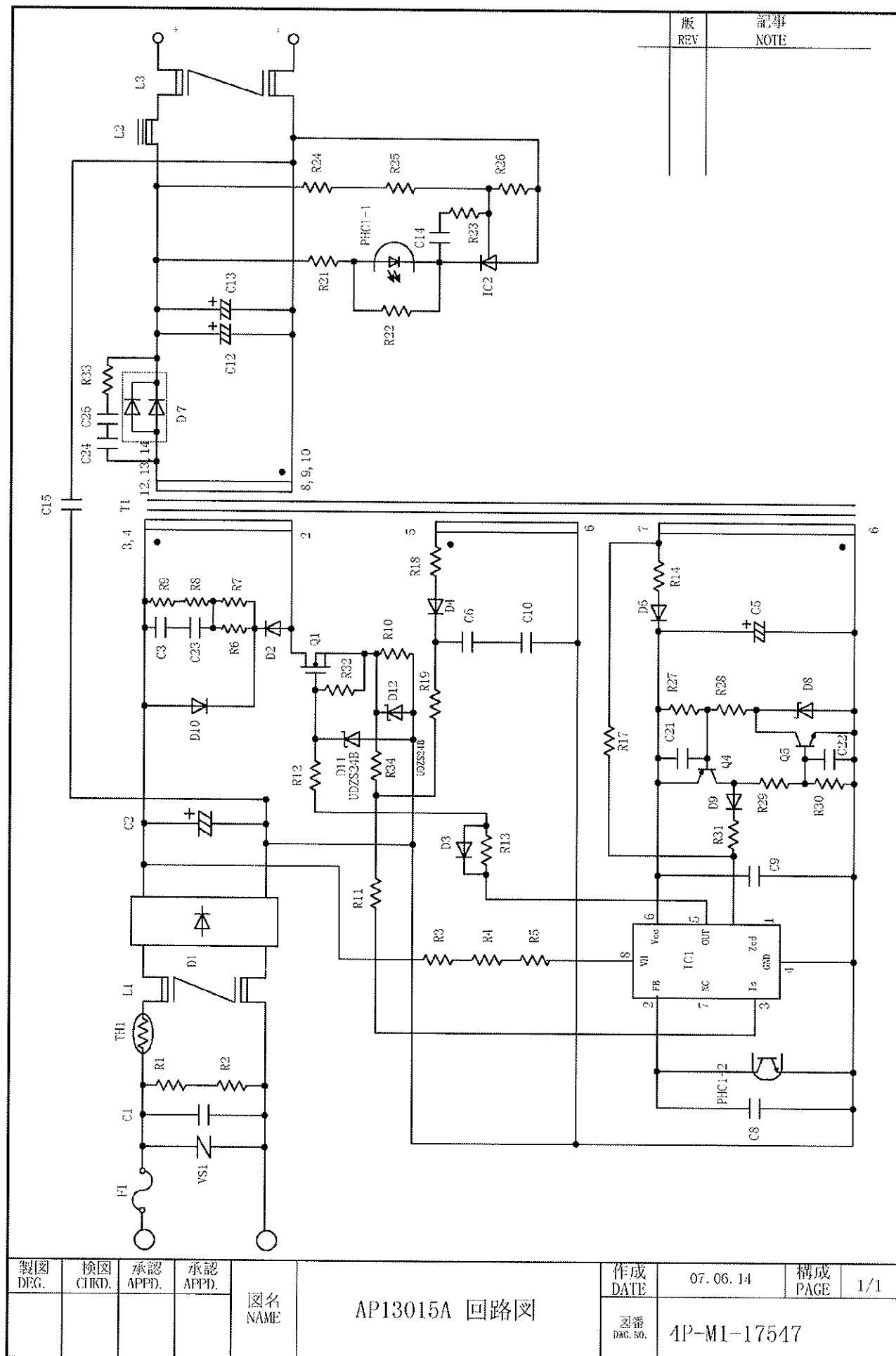


Fig.6





タムラ要求 (JT-S1-001) の使用禁止物質が
含まれていない事
No banned materials in Tamura Standard
(JT-S1-001) shall be contained

材料説明を添付して下さい
The Principal Certificate
Material Description
安全基準の番号を記入
Safety Standard Number
安全基準の番号を記入
Safety Standard Number
Applied for safety standard and required
Compliance
C C

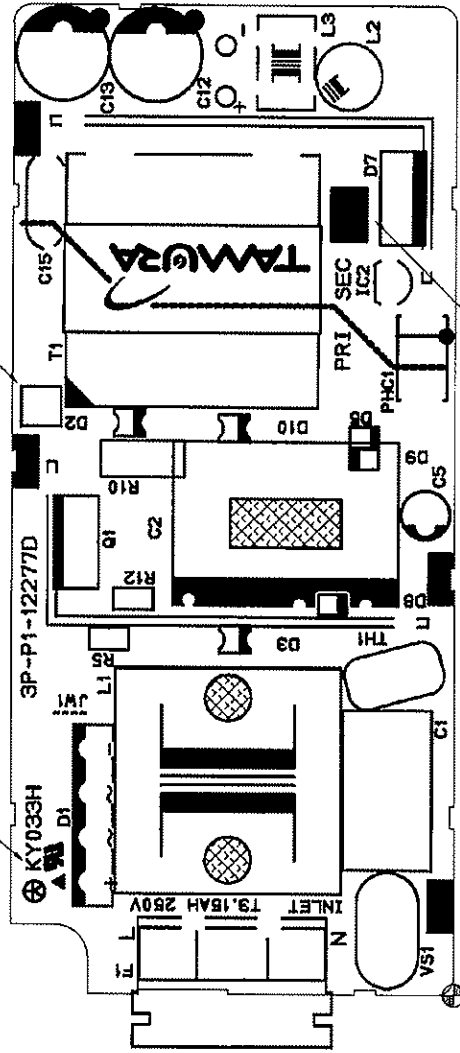
REV
D

記号
NOTE

UL ID MARK

面付け番号記入箇所
部品面シルク表示

レーザー発印



レビジョン表示
00000000000000000000
左からRevマーク印刷
00000000000000000000
左からRevマーク印刷

シルク図
(部品面)

X3P-P1-12277D 1/6

変更履歴

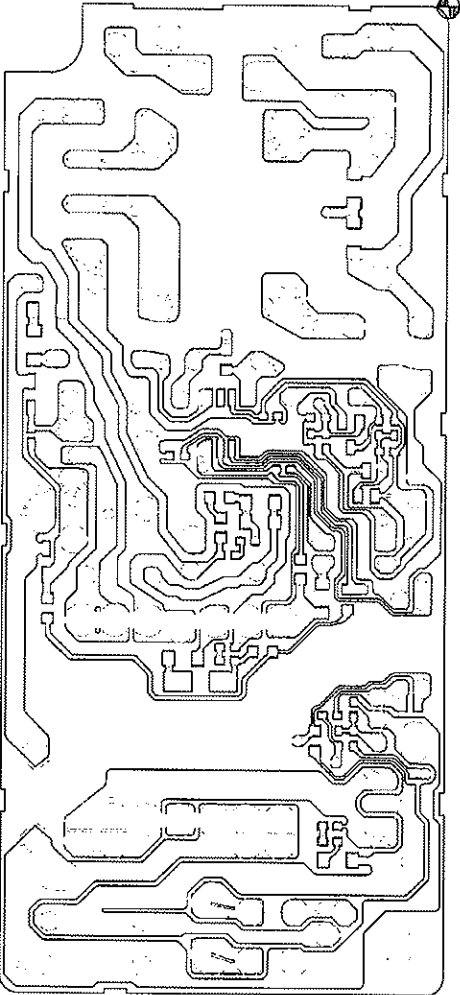
注) シルク、パターンのUL ID マークを表示のこと。

項目	シルク	パターン	金型	シルク	パターン	金型	シルク	パターン	金型	シルク	パターン	金型	シルク	パターン	金型
版	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

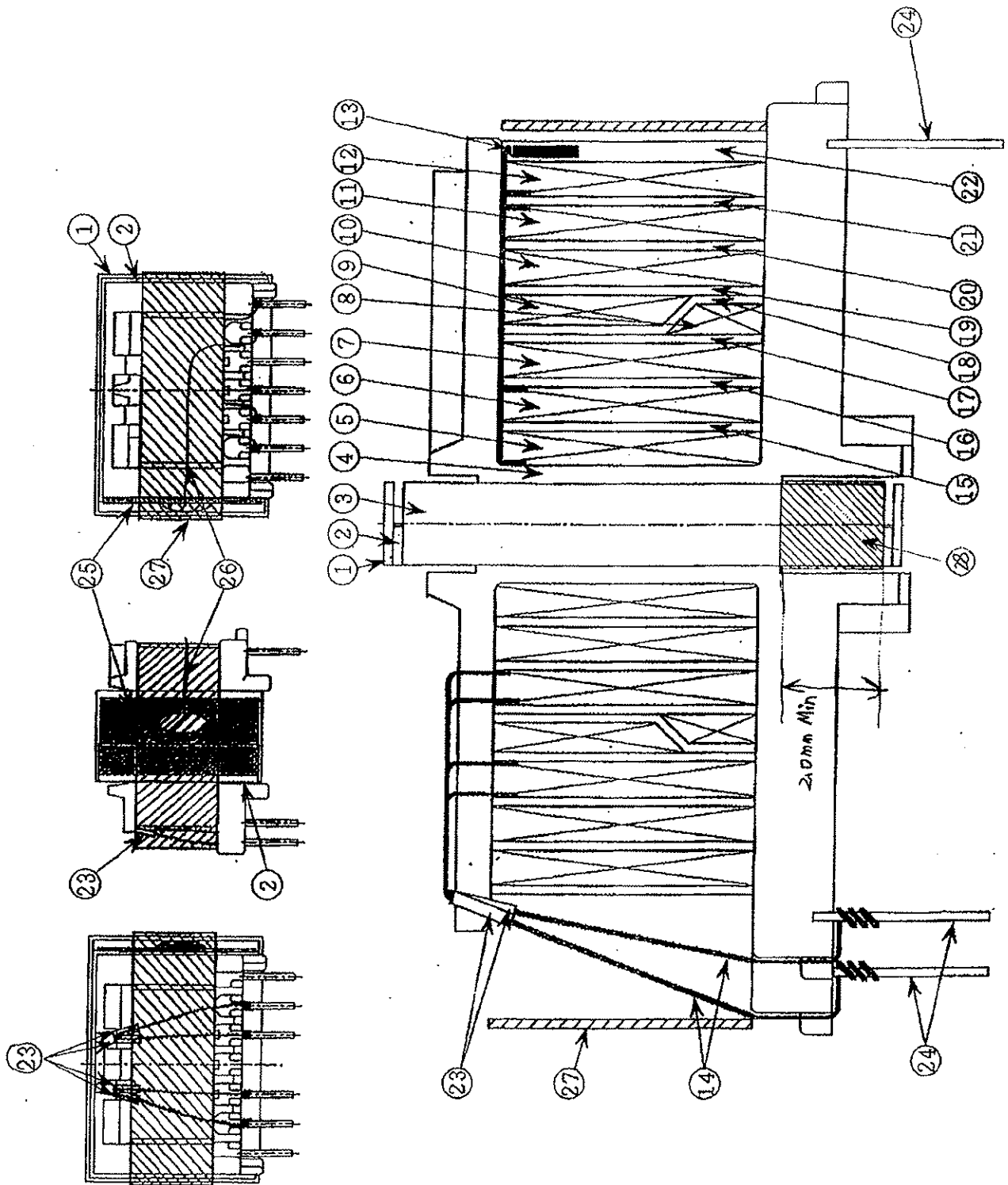
材料	FR-1	レジスト	色	シールド	色	シールド	色	シールド	色	シールド	色	シールド	色	シールド	色
MATERIAL	FR-1	UL 94V-0	RESIST	1-1.6	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm	3.5mm
PROCESS	銅箔グラビア	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔
DESIGN	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔
SCALE	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔
REM	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔
DF	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔
DI	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔
SAFETY	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔	銅箔

JAPAN QUALITY ASSURANCE ORGANIZATION

材料証明を添付して下さい Attach the Material Certificate 安全が確保できない場合は変更 If safety cannot be ensured, revision is required Approval for safety authority is required Approval for safety authority is required		REV	記号 NOTE
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材料 MATERIAL	FR-1 UL94V-0	レジスト RESIST	銅色 1-1.6	シンボル SYMBOL	導体線 白色 半田 黒色 35μ	図名 NAME	パターン図 {ハンダ面}
プロセス PROCESS	銅箔エッチング Copper Etching	銅箔 Copper	銅色 1-1.6	シンボル SYMBOL	導体線 白色 半田 黒色 35μ	図名 NAME	パターン図 {ハンダ面}
設計 DESIGN	CHKO	承認 APPRO	2	スケール SCALE	2	図番 DWG NO	X3P-P1-12277D 3/6
安全 SAFETY	安全 SAFETY	安全 SAFETY	安全 SAFETY	安全 SAFETY	安全 SAFETY	安全 SAFETY	安全 SAFETY



MATERIAL LIST Switching Transformer TO-5831				
No.	Appellation	Material	Thickness (mm)	Manufacturer
1	Core Outerwrap Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turns (Green)	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
2	Core Outerwrap Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
3	Core	Ferrite ML240 BH2 PC40 MB3 TP4 HE4B DMR40		Hitachi Metals, Ltd. Tokin Corporation TDK Corporation JFE Ferrite Corporation Zhejiang Tiantong Electronics Co., Ltd. Ruyuan Dongyangguang Magnetics Materials Co., Ltd. Zhejiang Dongyang Dmegg Magnetics Co., Ltd.
4	Coil Bobbin	Phenolic Resin (94V-0) PM-9820/PH-9720 E41429	0.75min.	Sumitomo Bakelite Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
5	Primary Winding	Polyurethane Enameled Copper Wire	φ 0.32	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
6	Primary Winding	Polyurethane Enameled Copper Wire	φ 0.50×3	Same as above
7	Secondary Winding	Triple Layer Insulated wire TYPE TEX-E consists of Polyester/Polyamide UL E206440 CSA LR104155-1 TUV T9251520	φ 0.50×2	The Furukawa Electric Wire Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
8	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.32 \times 3$	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
9	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.32 \times 3$	Same as above
10	Secondary Winding	Triple Layer Insulated wire TYPE TEX-E consists of Polyester/Polyester/Polyamide UL E206440 CSA LR104155-1 TUV T9251520	$\phi 0.50 \times 2$	The Furukawa Electric Wire Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
11	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.50 \times 3$	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FB Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
12	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.32$	Same as above
13	Primary Lead Wire	Polyurethane Enameled Copper Wire		Same as above
14	Secondary Lead Wire	Triple Layer Insulated wire TYPE TEX-E consists of Polyester/Polyamide UL E206440 CSA LR104155-1 TUV T9251520	$\phi 0.50 \times 2$	The Furukawa Electric Wire Co., Ltd.
15	Insulation between Primary and Primary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turn	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
16	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
17	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.05 1 Turn	0.05	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
18	Insulation between Primary and Primary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
19	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
20	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.05 1 Turn	0.05	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
21	Insulation between Primary and Primary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turn	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
22	Over Winding Insulation	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turns (Green)	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
23	Insulation Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Ply (Yellow)	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
24	Lead Pin	Tin-plated Low Carbon Steel Wire	φ 0.8	Kyowa Electric Wire Co., Ltd. Mitsubishi Cable Industries Ltd. Sumitomo Electric Industries Ltd. Well Fore Special Wire Corporation Orient Electric Leadwires (M) Sdn. Bhd.
25	Short Ring	Adhesive Copper Foil No.831S CP-3002	(0.05)	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
26	Lead Wire	Polyurethane Enameled Copper Wire	φ 0.32	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Toboku Maiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
27	Insulation Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
28	Insulation Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turn (Green)	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
	Impregnation	Varnish WP-2952F-2GY TVB-2180T, TVB-2180TE, TVB-2180TEM		Hitachi Chemical Industries Ltd. Kyocera Chemical Corporation

TAMURA CORPORATION

Replace pages to original test report, Ref. No. 350-70178

Modification on the appliances: 1. Addition of similar model, 2. Evaluation by CENELEC common modifications as Procedure deviation, and 3. Addition of other trade/brand name.

Modification to clause: 1.7.1

Page concerned in original report: 1-6, 25-35

TEST REPORT

IEC 60950-1 and/or EN 60950-1

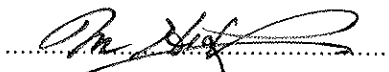
Information technology equipment – Safety – Part 1: General requirements

Report reference No. : <350-70314>

Tested by
(printed name and signature) : Takashi Kosai



Approved by
(printed name and signature) : Masatomo Higuchi



Date of issue : September 27, 2007

Contents : Report: 16 pages
appendix: see page 2.

Testing Laboratory Name : Japan Quality Assurance Organization

Address : 1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

Testing location : CBTL ☒ CCATL ☐ SMT ☐ TMP ☐

Address : Same as Testing Laboratory

Applicant's Name : Tamura Corporation

Address : 5-5-30 Chiyoda, Sakado, Saitama 350-0214 Japan

Test specification

Standard : IEC 60950-1:2001 (1st Edition)

Test procedure : CB-scheme

Procedure deviation : CA, US: National differences to IEC60950-1, 1st edition (2001) in
CB Bulletin No. 112A.

JP: National differences to IEC60950, 3rd edition (1999) in CB
Bulletin No. 112A, because of no national differences to IEC60950-
1, 1st edition (2001).

**CENELEC common modifications in accordance with CB
Bulletin No. 112A**

Non-standard test method : -

Test Report Form No. : IECEN60950_1B

TRF originator : SGS Fimko Ltd

Master TRF : dated 2003-03

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Test item description : AC adaptor

Trademark : Internet Initiative Japan Inc. (for AP13015A)
Tamura (for DXW1225N)

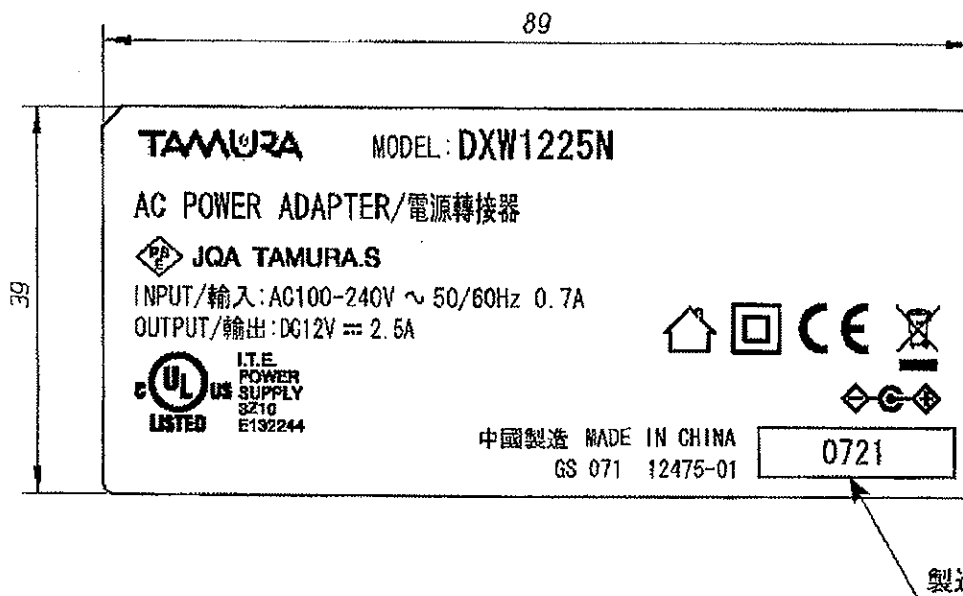
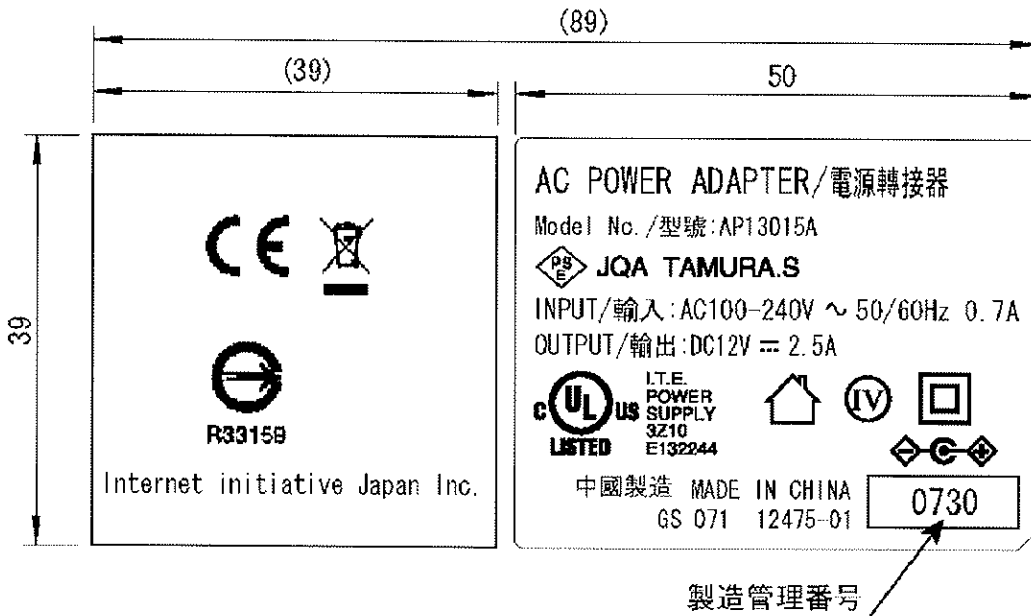
Manufacturer : Same as applicant

Model and/or type reference : AP13015A and DXW1225N

Serial number : --

Rating(s) : Input: AC100-240V, 50/60Hz, 0.7A
Output: DC12V, 2.5A

Copy of marking plate:



The above label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

Summary of testing:**GENERAL**

1. This sample tested complies with the requirements of test specification.
2. The equipment is an AC Adaptor, which is intended to use with information technology equipment. (approx. size 57mm × 33mm × 121mm)
3. The equipment has been evaluated for use in Pollution Degree 2 environment.
4. Detachable power supply cord set was not checked. But it shall be approval type, which was evaluated by relevant IEC or other local standard.
5. DC output complied with CL 2.2 SELV circuit and CL 2.5 limited power source.

Normal operational condition

This equipment was operated at 12Vdc 2.5A with resistor load as normal operation.

Modification

This report covers following evaluation of the subject model for the previously certified equipment under CB report number 350-70178.

1.
Addition of similar model DXW1225N (Tamura brand). Model DXW1225N is identical to original model AP13015A except for as follows, however these modifications cannot affect any safety aspects.

- R3: Deleted.
- D13 & D14: Addition
- R4, R5 & C5: Rating changed
- Modified PCB pattern traces for above components

2.
"Internet Initiative Japan Inc. " is registered to model AP13015A as trade/brand name.

3.
Additional evaluation by CENELEC common modifications as Procedure deviation.

Since above reason, only clause 1.7.1 and "CENELEC COMMON MODIFICATIONS" were tested.

ENCLOSURE

Enclosure 2b: Attached photo: (2 sheets) for model DXW1225N

Enclosure 3b: Circuit Diagram (1 sheet) for model DXW1225N

Enclosure 4b: PCB pattern traces drawing (2 sheets) for model DXW1225N

Particulars: test item vs. test requirements

Equipment mobility: Movable
 Operating condition: Continuous
 Mains supply tolerance (%): +10%, -10%
 Tested for IT power systems: No
 IT testing, phase-phase voltage (V): -
 Class of equipment: Class II
 Mass of equipment (kg): 0.3
 Operating ambient temperature(°C): 40
 Protection against ingress of water: IP0

Test case verdicts

Test case does not apply to the test object ..: N/A
 Test item does meet the requirement: Pass
 Test item does not meet the requirement: F(ail)

Testing

Date of receipt of test item: September 11, 2007
 Date(s) of performance of test: September 26, 2007

General remarks

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

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

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

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

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

General product information:

See GENERAL.

Factory's Name / Address:

Tamura Electronics (Shenzhen) Co., Ltd.
 No. 1 Factory of Ban Tian Section, Ban Xue Gang Road, Ban Tian Village, Bu Ji Town, Long Gang District, Shen Zhen City, China

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

1	GENERAL		Pass
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1.7	Marking and instructions			Pass
1.7.1	Power rating			Pass
	Rated voltage(s) or voltage range(s) (V)	100-240V		Pass
	Symbol for nature of supply, for d.c. only.....	-		N/A
	Rated frequency or rated frequency range (Hz) ..	50/60Hz		Pass
	Rated current (mA or A)	0.7A		Pass
	Manufacturer's name or trademark or identification mark	TAMURA.S Internet Initiative Japan Inc.	TAMURA.S	Pass
	Type/model or type reference.....	AP13015A	DXW1225N	Pass
	Symbol for Class II equipment only	☒		Pass
	Other symbols	-		N/A
	Certification marks	Certification marks are tentative.		N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict

CENELEC COMMON MODIFICATIONS [C], SPECIAL NATIONAL CONDITIONS [S] AND A-DEVIATIONS (NATIONAL DEVIATIONS) [A] (EN 60950-1:2001, Annex ZB and Annex ZC)			Pass
General	C: Delete all the "country" notes in the reference document according to the following list: 1.5.1 Note 2 1.5.8 Note 2 1.6.1 Note 1.7.2 Note 4 1.7.12 Note 2 2.1 Note 2.2.3 Note 2.2.4 Note 2.3.2 Note 2, 7, 8 2.3.3 Note 1, 2 2.3.4 Note 2,3 2.7.1 Note 2.10.3.1 Note 4 3.2.1.1 Note 3.2.3 Note 1, 2 3.2.5.1 Note 2 4.3.6 Note 1,2 4.7.2.2 Note 4.7.3.1 Note 2 6.1.2.1 Note 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7 Note 4 7.1 Note G2.1 Note 1, 2 Annex H Note 2	-	Pass
1.2.4.1	S (DK): Certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	-	N/A
1.5.1	A (SE, Ordinance 1990:944 and CH, Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury): Add NOTE – Switches containing mercury such as thermostats, relays and level controllers are not allowed.	-	N/A
1.5.8	S (NO): Due to the IT power system used (see annex V, Fig. V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	-	N/A
1.7.2	S (FI, NO, SE): CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows:	-	N/A
	FI: "Laite on liitettävä suojamaadoitus-koskettimilla varustettuun pistorasiaan"	-	N/A
	NO: "Apparatet må tilkoples jordet stikkontakt"	-	N/A
	SE: "Apparaten skall anslutas till jordat uttag"	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	A (DK, Heavy Current Regulations): Supply cords of class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram which shows the connection of the other conductors, or be provided with the following text: "For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."	-	N/A
1.7.5	S (DK): Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	-	N/A
1.7.5	A (DK, Heavy Current Regulations): CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.	-	N/A
1.7.12	A (DE, Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23rd October 1992, Article 3, 3rd paragraph, 2nd sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des 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): Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language. NOTE: Of this requirement, rules for use even only by service personnel are not exempted.	-	N/A
1.7.15	A (CH, Ordinance on environmentally hazardous substances SR 814.013): Annex 4.10 of SR 814.013 applies for batteries.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	A (DE, Regulation on protection against hazards by X-ray, of 8th January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4): a) A licence is required by those who operate an X-ray emission source. b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 µSv/h and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated and ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if 1) the X-ray emission source has been granted a type approval and 2) it is adequately indicated on the X-ray emission source that i) X-rays are generated ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer. d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if 1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6, 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT.	-	N/A
2.2.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.3.2	S (NO): Requirements according to this annex, 6.1.2.1 apply.	-	N/A
2.3.3 and 2.3.4	S (NO): Requirements according to this annex, 1.7.2 and 6.1.2.1 apply.	-	N/A
2.6.3.3	S (GB): The current rating of the circuit shall be taken as 13 A, not 16 A.	-	N/A
2.7.1	C: Replace the subclause as follows: <i>Basic requirements</i> To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	A fuse-link according to IEC/EN 60127.	Pass
	S (GB): To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT OF DIRECT PLUG-IN EQUIPMENT, protective device shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT.	-	N/A
2.7.2	C: Void.	Void	Pass
2.10.2	C: Replace in the first line "(see also 1.4.7)" by "(see also 1.4.8)".	Replaced	Pass
2.10.3.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage and will remain at 230 V in case of a single earth fault	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.1.1	S (CH): Supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991, Plug type 15, 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991, Plug type 11, L+N 250 V, 10 A SEV 6534-2.1991, Plug type 12, L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998, Plug type 25, 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998, Plug type 21, L+N 250 V, 16 A SEV 5934-2.1998, Plug type 23, L+N+PE 250 V, 16 A	-	N/A
	S (DK): Supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If ply-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	-	N/A

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	S (ES): Supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	-	N/A
	S (GB): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Socket etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE – 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	-	N/A
	S (IE): Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	-	N/A
3.2.3	C: Delete Note 1 and in Table 3A, delete the conduit sizes in parentheses.	See General 4 on page 3.	N/A

IEC 60950-1 / EN 60950-1												
Clause	Requirement – Test	Result – Remark	Verdict									
3.2.5.1	C: Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: <table><tr><td>Up to and including 6</td><td>0,75¹⁾</td><td></td></tr><tr><td>Over 6 up to and including 10</td><td>(0,75)²⁾</td><td>1,0</td></tr><tr><td>Over 10 up to and including 16</td><td>(1,0)³⁾</td><td>1,5</td></tr></table> In the Conditions applicable to Table 3B delete the words "in some countries" in condition ¹⁾. In Note 1, applicable to Table 3B, delete the second sentence.	Up to and including 6	0,75 ¹⁾		Over 6 up to and including 10	(0,75) ²⁾	1,0	Over 10 up to and including 16	(1,0) ³⁾	1,5	See General 4 on page 3.	N/A
Up to and including 6	0,75 ¹⁾											
Over 6 up to and including 10	(0,75) ²⁾	1,0										
Over 10 up to and including 16	(1,0) ³⁾	1,5										
3.2.5.1	S (GB): A power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.	-	N/A									
3.3.4	C: In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: <table><tr><td>"Over 10 up to and including 16</td><td>1,5 to 4"</td></tr></table> Delete the fifth line: conductor sizes for 13 to 16 A.	"Over 10 up to and including 16	1,5 to 4"	See General 4 on page 3.	N/A							
"Over 10 up to and including 16	1,5 to 4"											
3.3.4	S (GB): The range of conductor sizes of flexible cords to be accepted by terminals for equipment with A RATED CURRENT of over 10 A up to and including 13 A is: - 1,25 mm² to 1,5 mm² nominal cross-sectional area.	-	N/A									
4.3.6	S (GB): The torque test is performed using a socket outlet complying with BS 1363 and the plug part OF DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C.	-	N/A									
	S (IE): DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	-	N/A									
4.3.13.6	C: Add the following note: NOTE Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this recommendation are currently under development.	-	N/A									

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.1.2.1	S (FI, NO, SE): Add the following text between the first and second paragraph: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES AND CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV), and - is subject to ROUTING TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950:2000, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.	-	N/A

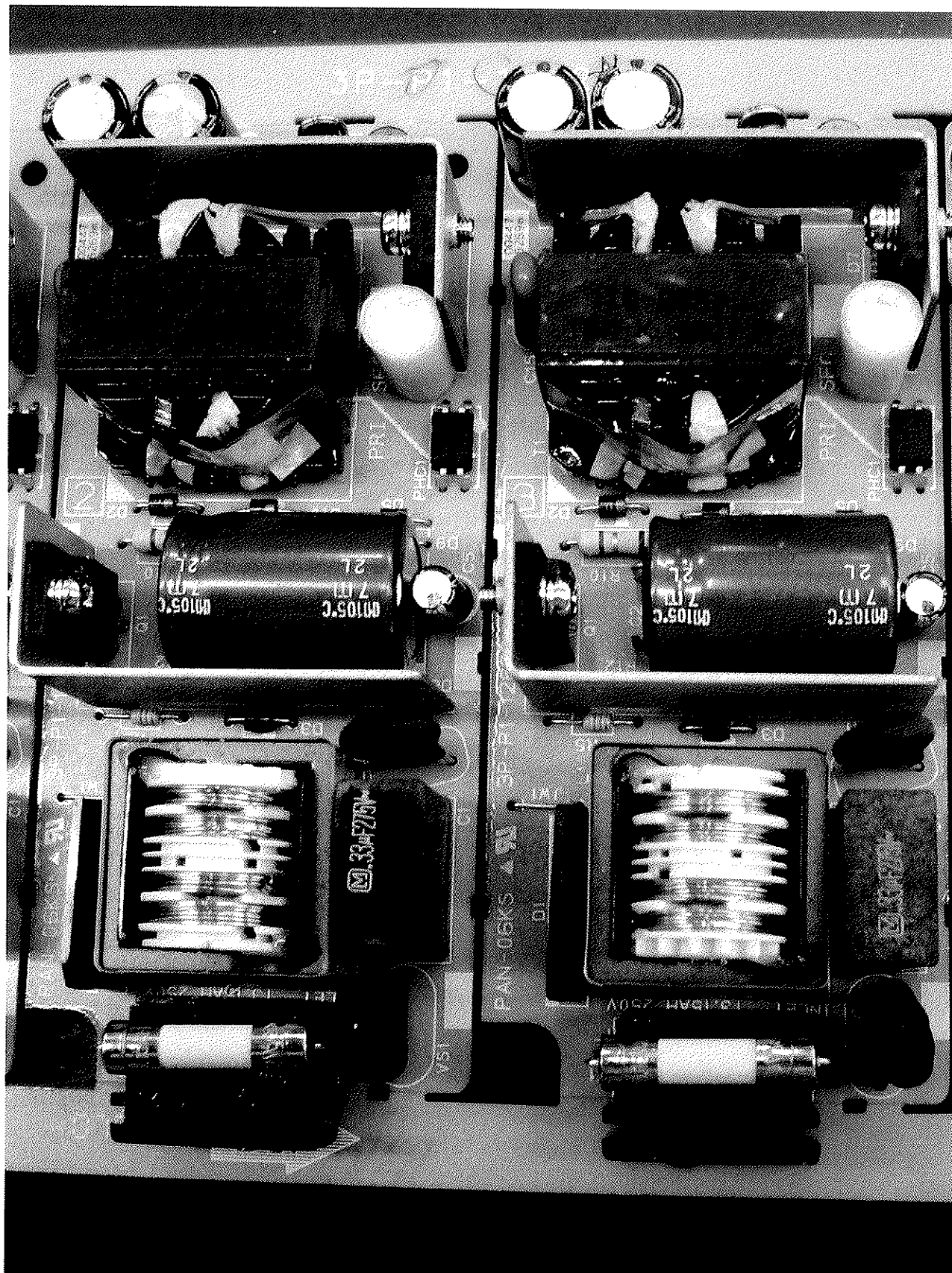
IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
6.1.2.2	S (FI, NO, SE): The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a service person.	-	N/A
7.1	S (FI, NO, SE): Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	-	N/A
G.2.1	S (NO): Due to the IT power distribution system used (see annex V, Fig. V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	-	N/A
Annex H	C: Replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see note). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete Note 2.	-	N/A
Annex P	C: Replace the text of this annex by: See annex ZA.	Replaced.	Pass
Annex Q	C: Replace the title of IEC 61032 by "Protection of persons and equipment by enclosures – Probes for verification". Add the following notes for the standards indicated: IEC 60127 NOTE Harmonized as EN 60127 (Series) (not modified) IEC 60269-2-1 NOTE Harmonized as HD 630.2.1 S4:2000 (modified) IEC 60529 NOTE Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE Harmonized as EN 61032:1998 (not modified) IEC 61140 NOTE Harmonized as EN 61140:2001 (not modified) ITU-T Recommendation K.31 NOTE in Europe, the suggested document is EN 50083-1.		Pass
Annex ZA	C: NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments). NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.		Pass

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	—	IEC 60050-151	
	—	IEC 60050-195	
	EN 60065:1998 + corr. June 1999	IEC 60065 (mod):1998	
	EN 60073:1996	IEC 60073:1996	
	HD 566 S1:1990	IEC 60085:1984	
	HD 214 S2:1980	IEC 60112:1979	
	HD 611.4.1.S1:1992	IEC 60216-4-1:1990	
	HD 21 ¹⁾ Series	IEC 60227 (mod) Series	
	HD 22 ²⁾ Series	IEC 60245 (mod) Series	
	EN 60309 Series	IEC 60309 Series	
	EN 60317-43:1997	IEC 60317-43:1997	
	EN 60320 Series	IEC 60320 (mod) Series	
	HD 384.3 S2:1995	IEC 60364-3 (mod):1993	
	HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992 ³⁾	
	EN 132400:1994 ⁴⁾	IEC 60384-14:1993	
	+ A2:1998 + A3:1998 + A4:2001		
	EN 60417-1	IEC 60417-1	
	HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992	
	EN 60695-2-2:1994	IEC 60695-2-2:1991	
	EN 60695-2-11:2001	IEC 60695-2-11:2000	
	—	IEC 60695-2-20:1995	
	—	IEC 60695-10-2:1995	
	—	IEC 60695-11-3:2000	
	—	IEC 60695-11-4:2000	
	EN 60695-11-10:1999	IEC 60695-11-10:1999	
	EN 60695-11-20:1999	IEC 60695-11-20:1999	
	EN 60730-1:2000	IEC 60730-1:1999 (mod)	
	EN 60825-1:1994 + corr. Febr. 1995 + A11:1996	IEC 60825-1:1993	
	+ corr. July 1997		
	EN 60825-2:2000	IEC 60825-2:2000	
	—	IEC 60825-9:1999	
	EN 60851-3:1996	IEC 60851-3:1996	
	EN 60851-5:1996	IEC 60825-5:1996	
	EN 60851-6:1996	IEC 60851-6:1996	
	—	IEC 60885-1:1987	
	EN 60990:1999	IEC 60990:1999	
	—	IEC 61058-1:2000	
	EN 61965:2001	IEC 61965:2000	

IEC 60950-1 / EN 60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	EN ISO 178:1996	ISO 178:1993	
	EN ISO 179 Series	ISO 179 Series	
	EN ISO 180:2000	ISO 180:1993	
	—	ISO 261:1998	
	—	ISO 262:1998	
	EN ISO 527 Series	ISO 527 Series	
	—	ISO 386:1984	
	EN ISO 4892 Series	ISO 4892 Series	
	—	ISO 7000:1989	
	EN ISO 8256:1996	ISO 8256:1990	
	—	ISO 9772:1994	
	EN ISO 9773:1998	ISO 9773:1998	
	—	ITU-T:1988 Recommendation K.17	
	—	ITU-T:2000 Recommendation K.21	
	1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series 2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series 3) IEC 60364-4-41:1992 is superseded by IEC 60364-4-41:2001 4) EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14		

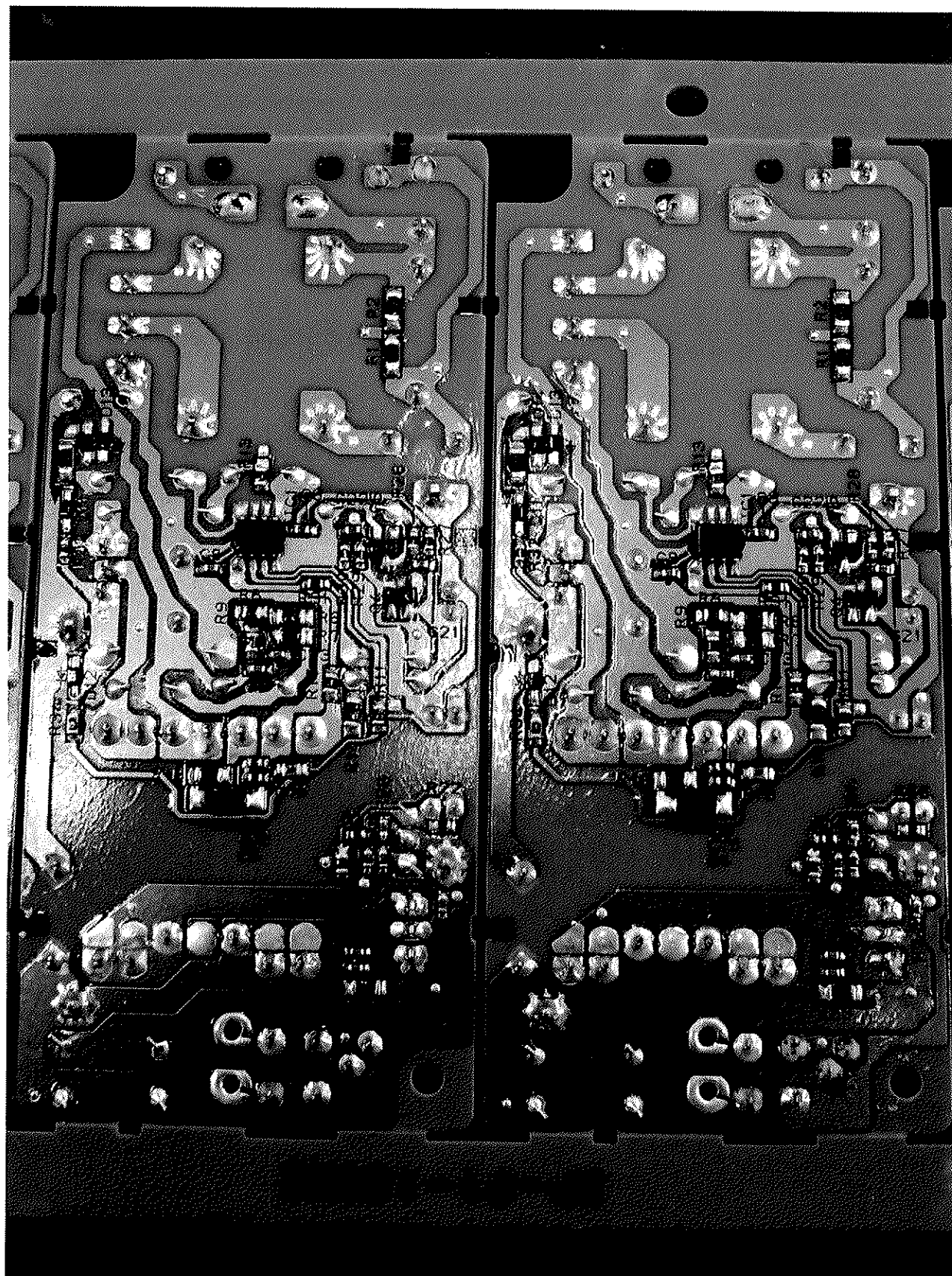
Model DXW1225N

Fig.1

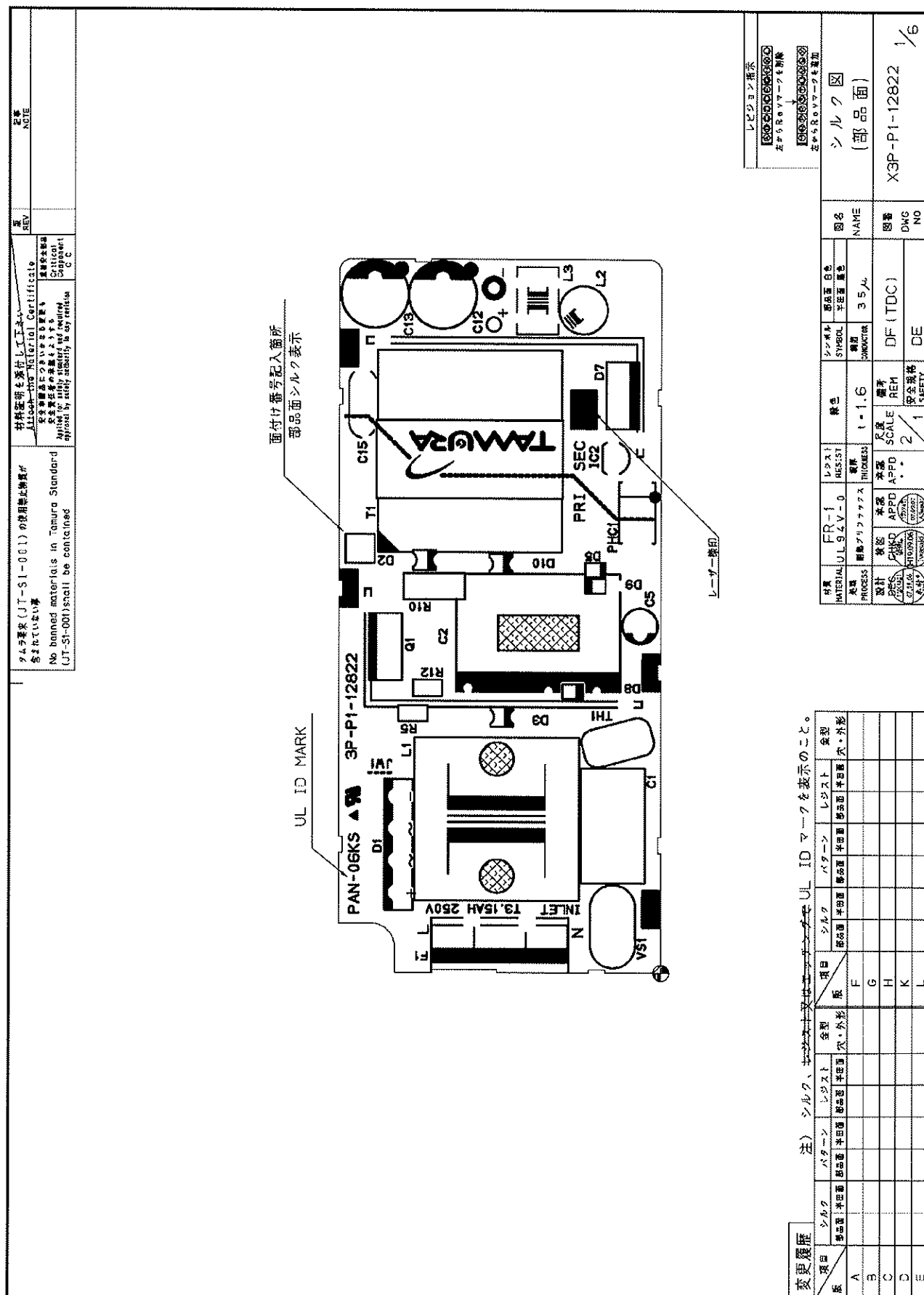


Model DXW1225N

Fig.2



						版 REV		記事 NOTE		
製図 DEG.	検図 CHKD.	承認 APPD.	承認 APPD.	図名 NAME	回路図		作成 DATE	07. 06. 14	構成 PAGE	1/1
							図番 DOC. NO.	4P-M1-18280		



Model DXW1225N

材料説明を添付して下さい Attach the Material Certificate		REV	記号 NOTE
安全な製品にする必要はありません It is not necessary to make a safe product. approved by safety authority in my opinion C.D.			

光学読取マーク

光学読取マーク

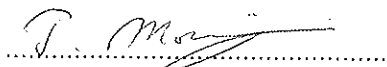
材質 MATERIAL	FR-1 UL94V-0	レジスト RESIST	銅色 t=1.6	シンボル SYMBOL	線径 WIRE GAUGE	板厚面 PLATE THICKNESS	公差 TOLERANCE
処理 PROCESS <td>銅箔リソグラフィ <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 </td></td></td></td></td></td></td>	銅箔リソグラフィ <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 </td></td></td></td></td></td>	銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 </td></td></td></td></td>	銅箔 <td>銅箔 <td>銅箔 <td>銅箔 <td>銅箔 </td></td></td></td>	銅箔 <td>銅箔 <td>銅箔 <td>銅箔 </td></td></td>	銅箔 <td>銅箔 <td>銅箔 </td></td>	銅箔 <td>銅箔 </td>	銅箔
設計 DESIGN	CHKD	APPD	REM	DF (TDC)	DE	安全規格 SAFETY STANDARD	安全規格 SAFETY STANDARD

Replace pages to original test report, Ref. No. 350-70178/350-70314
 Modification on the appliances: Addition of alternate turns of insulation tape on T1 core bottom.
 Page concerned in original report: 1-4.

TEST REPORT**IEC 60950-1 and/or EN 60950-1**
**Information technology equipment – Safety –
 Part 1: General requirements**

Report reference No : <350-70373>

Tested by
 (printed name and signature) : Takao Moriizumi



Approved by
 (printed name and signature) : Takashi Kosai



Date of issue : October 30, 2007

Contents : Report: 4 pages
 ENCLSOURE: see page 3.

Testing Laboratory Name : Japan Quality Assurance Organization

Address : 1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

Testing location : CBTL ☒ CCATL ☐ SMT ☐ TMP ☐

Address : Same as Testing Laboratory

Applicant's Name : Tamura Corporation

Address : 5-5-30 Chiyoda, Sakado, Saitama 350-0214 Japan

Test specification

Standard : IEC 60950-1:2001 (1st Edition)

Test procedure : CB-scheme

Procedure deviation : CA, US: National differences to IEC60950-1, 1st edition (2001) in
 CB Bulletin No. 112A.

JP: National differences to IEC60950, 3rd edition (1999) in CB
 Bulletin No. 112A, because of no national differences to IEC60950-
 1, 1st edition (2001).

CENELEC common modifications in accordance with CB Bulletin
 No. 112A

Non-standard test method : -

Test Report Form No. : IECEN60950_1B

TRF originator : SGS Fimko Ltd

Master TRF : dated 2003-03

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 is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will
 not assume liability for damages resulting from the reader's interpretation of the reproduced material due
 to its placement and context.

Summary of testing:**GENERAL**

1. This sample tested complies with the requirements of test specification.
2. The equipment is an AC Adaptor, which is intended to use with information technology equipment. (approx. size 57mm × 33mm × 121mm)
3. The equipment has been evaluated for use in Pollution Degree 2 environment.
4. Detachable power supply cord set was not checked. But it shall be approval type, which was evaluated by relevant IEC or other local standard.
5. DC output complied with CL 2.2 SELV circuit and CL 2.5 limited power source.

Normal operational condition

This equipment was operated at 12Vdc 2.5A with resistor load as normal operation.

Modification

This report covers following evaluation of the subject model for the previously certified equipment under CB report number 350-70178/350-70314.

Addition of alternate turns of insulation tape on T1 core bottom. T1 transformer construction figure, item 28 changed from "3 Turn" to "2 Turn or 3 Turn". One layer of the insulation tape has been evaluated as basic insulation and this modification cannot affect any safety aspects.

ENCLOSURE

Enclosure 5c: Transformer Construction figure (8 sheets. Page 8, Item 28 revised)

Particulars: test item vs. test requirements

Equipment mobility : Movable
 Operating condition : Continuous
 Mains supply tolerance (%) : +10%, -10%
 Tested for IT power systems : No
 IT testing, phase-phase voltage (V) : -
 Class of equipment : Class II
 Mass of equipment (kg) : 0.3
 Operating ambient temperature(°C) : 40
 Protection against ingress of water : IP0

Test case verdicts

Test case does not apply to the test object .. : N/A
 Test item does meet the requirement : Pass
 Test item does not meet the requirement : F(all)

Testing

Date of receipt of test item : October 30, 2007
 Date(s) of performance of test : October 30, 2007

General remarks

"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IEC 60950-1".

The test result presented in this report relate only to the object(s) tested.

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

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

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

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

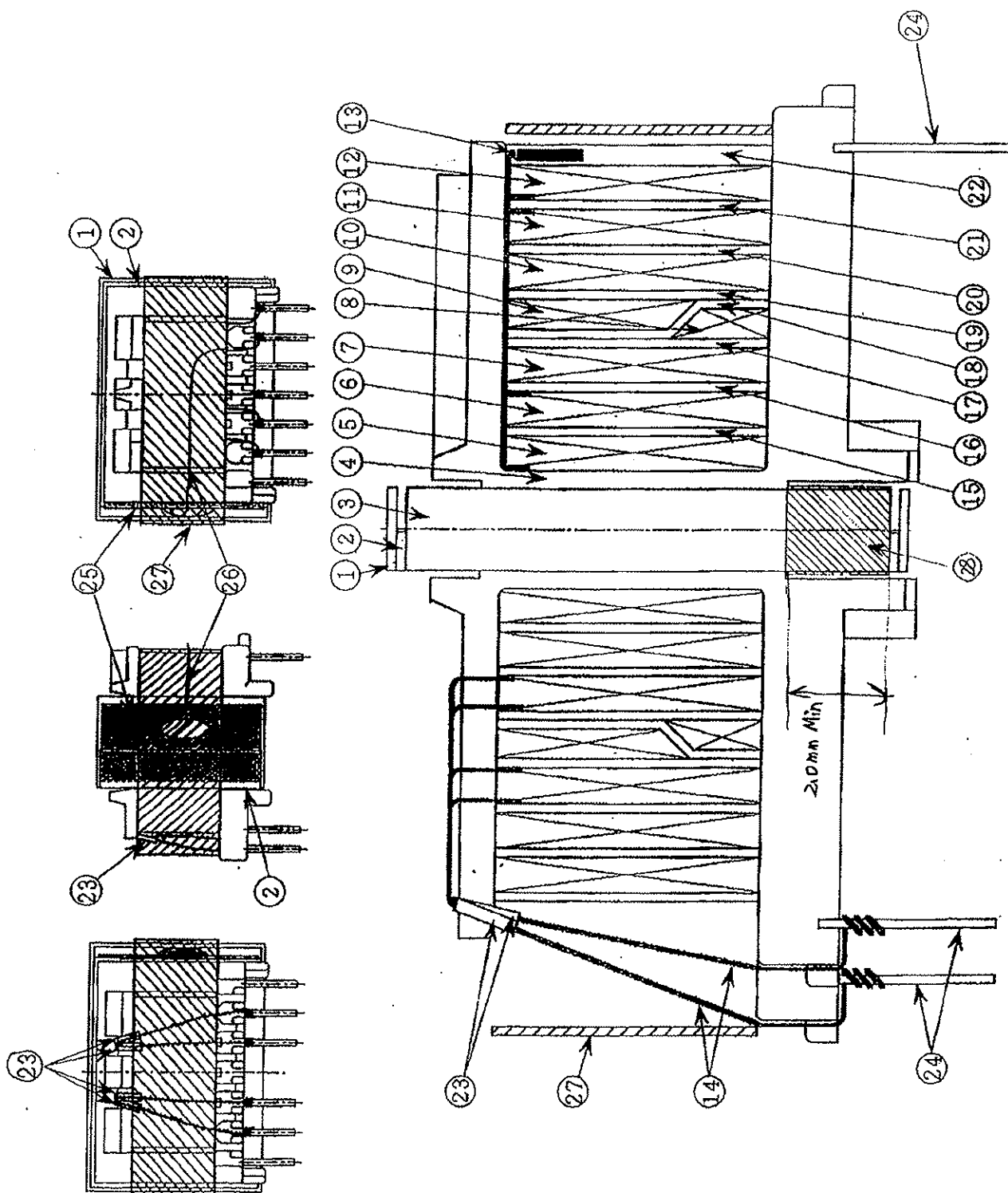
General product information:

See GENERAL.

Factory's Name / Address:

Tamura Electronics (Shenzhen) Co., Ltd.

No. 1 Factory of Ban Tian Section, Ban Xue Gang Road, Ban Tian Village, Bu Ji Town, Long Gang District, Shen Zhen City, China



MATERIAL LIST Switching Transformer TO-5831				
No.	Appellation	Material	Thickness (mm)	Manufacturer
1	Core Outerwrap Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turns (Green)	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
2	Core Outerwrap Tape	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
3	Core	Ferrite ML240 BH2 PC40 MB3 TP4 HE4B DMR40		Hitachi Metals, Ltd. Tokin Corporation TDK Corporation JFE Ferrite Corporation Zhejiang Tiantong Electronics Co., Ltd. Ruyuan Dongyangguang Magnetics Materials Co., Ltd. Zhejiang Dongyang Dmegc Magnetics Co., Ltd.
4	Coil Bobbin	Phenolic Resin (94V-0) PM-9820/PM-9720 E41429	0.75min.	Sumitomo Bakelite Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
5	Primary Winding	Polyurethane Enameled Copper Wire	φ 0.32	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daiichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-1 Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
6	Primary Winding	Polyurethane Enameled Copper Wire	φ 0.50×3	Same as above
7	Secondary Winding	Triple Layer Insulated wire TYPE TEX-E consists of Polyester/Polyester/Polyamide UL E206440 CSA LR104155-1 TUV T9251520	φ 0.50×2	The Furukawa Electric Wire Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
8	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.32 \times 3$	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daiichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Pine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
9	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.32 \times 3$	Same as above
10	Secondary Winding	Triple Layer Insulated wire TYPE TEX-E consists of Polyester/Polyester/Polyamide UL E206440 CSA LR104155-1 TUV T9251520	$\phi 0.50 \times 2$	The Furukawa Electric Wire Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
11	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.50 \times 3$	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daichi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Totoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
12	Primary Winding	Polyurethane Enameled Copper Wire	$\phi 0.32$	Same as above
13	Primary Lead Wire	Polyurethane Enameled Copper Wire		Same as above
14	Secondary Lead Wire	Triple Layer Insulated wire TYPE TEX-B consists of Polyester/Polyester/Polyamide UL E206440 CSA LR104155-1 TUV T9251520	$\phi 0.50 \times 2$	The Furukawa Electric Wire Co., Ltd.
15	Insulation between Primary and Primary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S E56086 CT, PZ E165111 CT, PZ E178516 0.025 3 Turn	0.075	Teraoka Seisakusho Co., Ltd. Jingiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
16	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
17	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.05 1 Turn	0.05	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
18	Insulation between Primary and Primary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
19	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
20	Insulation between Primary and Secondary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.05 1 Turn	0.05	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
21	Insulation between Primary and Primary Winding	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.025 3 Turn	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
22	Over Winding Insulation	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.025 3 Turns (Green)	0.075	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
23	Insulation Tape	Polyethylene Terephthalate Tape NO. 631S, 632S CT, PZ CT, PZ 0.025 1 Ply (Yellow)	0.025	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
24	Lead Pin	Tin-plated Low Carbon Steel Wire	φ 0.8	Kyowa Electric Wire Co., Ltd. Mitsubishi Cable Industries Ltd. Sumitomo Electric Industries Ltd. Well Fore Special Wire Corporation Orient Electric Leadwires (M) Sdn. Bhd.
25	Short Ring	Adhesive Copper Foil No.831S CP-3002	(0.05)	Teraoka Seisakusho Co., Ltd. Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.

No.	Appellation	Material	Thickness (mm)	Manufacturer
26	Lead Wire	Polyethylene Enameled Copper Wire	φ 0.32	Sumitomo Electric Industries Ltd. Shinetsu Electric Wire Co., Ltd. Riken Electric Wire Co., Ltd. Hitachi Cable, Ltd. Daitchi Denko Co., Ltd. The Furukawa Electric Co., Ltd. Showa Electric Wire and Cable Company Tohoku Meiden Co., Ltd. Tohoku Electric Co., Ltd. Fujikura Densen Co., Ltd. Fuji Fine Co., Ltd. LG Cable & Machinery Ltd. Jung Shing Wire Co., Ltd. Fujikura Federal Cable Sdn. Bhd. Tai-i Electric Wire & Cable Co., Ltd. Sumitomo Electric (S) Pte., Ltd. Hitachi Cable (S) Pte., Ltd. FE Magnet Wire (M) Sdn. Bhd. Pacific Thai Electric Wire & Cable Co., Ltd. Taiwan Riken Electric Wire Co., Ltd.
27	Insulation Tape	Polyethylene Terephthalate Tape NO. 631S, 632S B56086 CT, PZ E165111 CT, PZ E178516 0.025 1 Turn	0.025	Teraoka Seisakusho Co., Ltd. Jingliang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
28	Insulation Tape	Polyethylene Terephthalate Tape NO. 631S, 632S B56086 CT, PZ E165111 CT, PZ E178516 0.025 2 Turn or 3 Turn (Green)	0.025	Teraoka Seisakusho Co., Ltd. Jingliang Yahua Pressure Sensitive Glue Co., Ltd. Yahua Adhesive Tape Co., Ltd.
	Impregnation	Varnish WP-2952F-2G(Y) TVB-2180T, TVB-2180TE, TVB-2180TEM		Hitachi Chemical Industries Ltd. Kyocera Chemical Corporation

TAMURA CORPORATION