INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
DK-7274

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

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

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product *Produit*	**Panel PC**
Name and address of the applicant *Nom et adresse du demandeur*	**Advantech Co Ltd** **4th Fl, 108-3 Ming-Chuan Rd** **Shing-Tien City, Taipei Hsien Taiwan**
Name and address of the manufacturer *Nom et adresse du fabricant*	**Advantech Co Ltd** **4th Fl, 108-3 Ming-Chuan Rd** **Shing-Tien City, Taipei Hsien Taiwan**
Name and address of the factory *Nom et adresse de l'usine*	**See Appendix**
Rating and principal characteristics *Valeurs norminales et caractéristiques principales*	**24 Vdc, 2.2A, Class III**
Trade mark (if any) *Marque de fabrique (si elle existe)*	**ADVANTECH**
Model/type Ref. *Ref. de type*	**TPC-650XXXX and P1-PXXXX**
Additional information (if necessary) *Information complémentaire (si nécessaire)*	**IPX0**

A sample of the product was tested and found to be in conformity with *Un échantillon de ce produit a été essayé et a été considéré conforme à la*	**PUBLICATION**	**EDITION**
	IEC 60950:1999	**3rd**

as shown in the Test Report Ref. No. which form part of this certificate
comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat

E180881-A29-CB-1

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

UL International Demko A/S
Lyskaer 8, P.O. Box 514
DK-2730 Herlev, Denmark
Telephone: +45 44856565
Fax: +45 44856500

Date **2003-11-28**

Signature

Karina Christiansen
Certification Manager

Internal Ref.:
Jakob Petersen

An Affiliate of Underwriters Laboratories Inc.®

Appendix to
CB Certificate No. 7275

Production Site:

Advantech Co Ltd
5th Fl 1 Lane 169 Kang-Ning St., Xi-Zhi Town,
Taipei Hsien Taiwan

Advantech Co Ltd
3rd Fl 10 Lane 130 Ming Chuan Rd
Hsin-Tien
Taipei Hsien Taiwan

Superior Co Ltd
Tiensong Area Qingxing Town
Dongguan Guangdong China

Advantech Co Ltd
No. 600 Han-Pu Road Yu-Shan
Kun-Shan Jiangsu China

Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd.
No.7, 6th Street, Shang Di Zone, Haidian District, Beijing, P.R.China.

Herlev, 2003-11-28

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Certification Manager

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Product *Produit*	**Panel PC**
Name and address of the applicant *Nom et adresse du demandeur*	**Advantech Co Ltd** **4th Fl, 108-3 Ming-Chuan Rd** **Shing-Tien City, Taipei Hsien Taiwan**
Name and address of the manufacturer *Nom et adresse du fabricant*	**Advantech Co Ltd** **4th Fl, 108-3 Ming-Chuan Rd** **Shing-Tien City, Taipei Hsien Taiwan**
Name and address of the factory *Nom et adresse de l'usine*	**See Appendix**
Rating and principal characteristics *Valeurs norminales et caractéristiques principales*	**24 Vdc, 1.5A, Class III**
Trade mark (if any) *Marque de fabrique (si elle existe)*	**ADVANTECH**
Model/type Ref. *Ref. de type*	**TPC-642XXX-XXXX**
Additional information (if necessary) *Information complémentaire (si nécessaire)*	**IPX0**
A sample of the product was tested and found to be in conformity with *Un échantillon de ce produit a été essayé et a été considéré conforme à la*	**PUBLICATION** **IEC 60950:1999** — **EDITION** **3rd**
as shown in the Test Report Ref. No. which form part of this certificate *comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat*	**E180881-A29-CB-1**

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Appendix to
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Advantech Co Ltd
No. 600 Han-Pu Road Yu-Shan
Kun-Shan Jiangsu China

Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd.
No.7, 6th Street, Shang Di Zone, Haidian District, Beijing, P.R.China.

Herlev, 2003-11-28

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COVER PAGE FOR TEST REPORT

Test Item Description:	Panel PC
Model/Type Reference:	P1-PXXXX, TPC-650XXXX and TPC-642XXX-XXXX where X may be any alphanumeric character or blank.
Rating(s):	24 Vdc, 2.2 A for Model TPC-650XXXX and P1-PXXXX; 24 Vdc, 1.5 A for Model TPC-642XXX-XXXX
Standards:	IEC60950, Third Edition (1999)
Applicant Name and Address:	ADVANTECH CO LTD 4TH FL 108-3 MING-CHUAN RD SHING-TIEN CITY TAIPEI HSIEN TAIWAN
Factory Location(s):	1) ADVANTECH CO., LTD. 5TH, FL. 1, LANE 169 KANG-NING STREET, XI-ZHI TOWN TAIPEI HSIEN, TAIWAN 2) ADVANTECH CO., LTD. 3RD FL, 10 LANE 130, MING CHUAN RD, HSIN-TIEN CITY, TAIPEI HSIEN 231, TAIWAN 3) SUPERIOR CO., LTD. TIENSONG AREA, QINGXING TOWN, DONGGUAN, GUANGDONG, CHINA 4) ADVANTECH CO., LTD. NO. 600, HAN-PU ROAD, YU-SHAN, KUN-SHAN, JIANG SU, CHINA 5) BEIJING YAN HUA XING YE ELECTRONIC SCIENCE & TECHNOLOGY CO., LTD NO.7, 6TH STREET, SHANG DI ZONE, HAIDIAN DISTRICT, BEIJING, P.R.CHINA

This Report includes the following parts, in addition to this cover page:

1. Specific Technical Criteria
2. Clause Verdicts
3. Critical Components
4. Test Results
5. National Differences
6. Enclosures

All applicable tests according to the above standard(s) have been carried out.
Test results are valid only for the tested equipment.
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TEST REPORT
IEC 60950
Safety of information technology equipment

Report Reference No ..... :	E180881-A29-CB-1
Compiled by (+ signature) ..... :	Rasul M. Balacu
Reviewed by (+ signature) ..... :	Jakob Petersen
Approved by (+ signature) ..... :	Jakob Petersen
Date of issue ..... :	2003-11-26
CB Testing Laboratory ..... :	UL International Demko A/S
Address ..... :	Lyskaer 8, 2730, Herlev, Denmark
Testing location/procedure ..... :	CBTL [x] SMT [ ] TMP [ ] WMT [ ]
Address ..... :	UL International Demko A/S, Lyskaer 8, 2730, Herlev, Denmark
Applicant's name ..... :	ADVANTECH CO LTD
Address ..... :	4TH FL 108-3 MING-CHUAN RD SHING-TIEN CITY TAIPEI HSIEN TAIWAN
Test specification:	
Standard ..... :	IEC60950, Third Edition (1999)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	I950__F/00-03
TRF originator ..... :	FIMKO
Master TRF ..... :	dated 00-02

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Test item description ..... :	Panel PC
Trade Mark ..... :	ADVANTECH
Model/Type reference ..... :	P1-PXXXX, TPC-650XXXX and TPC-642XXX-XXXX where X may be any alphanumeric character or blank.
Manufacturer ..... :	SAME AS APPLICANT
Rating ..... :	24 Vdc, 2.2 A for Model TPC-650XXXX and P1-PXXXX; 24 Vdc, 1.5 A for Model TPC-642XXX-XXXX

Marking Plate - Refer to Enclosure titled Miscellaneous for copy.

Particulars: test item vs. test requirements	
Equipment mobility ..... :	movable
Operating condition ..... :	continuous
Mains supply tolerance (%) ..... :	No direct connection to mains supply - no tolerances applied
Test for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class III (supplied by SELV)
Mass of equipment (kg) ..... :	2
Protection against ingress of water ..... :	IP X0
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)

General remarks:

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

The test results presented in this report relate only to the object 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:	
Report Summary	
All applicable tests according to the referenced standard(s) have been carried out.	
Product Description	
- The Panel PC is used with either CB approval power adaptor, see appended table 1.5.1, or non-CB approval power adaptor, see enclosed power adaptor test report.	
Model Differences	
- The model P1-PXXXX is same as model TPC-650XXXX except for model designation. - The model TPC-642XXX-XXXX is similar to model TPC-650XXXX except for inpur current rating and LCD panel size.	
Additional Information	
Unless otherwise indicated, all tests were conducted on Model TPC-642XXX-XXXX.	
Engineering Consideration	
The product was submitted and tested for use at the manufacturer's recommended ambient temperature (Tmra) of:	40°C
The following accessible locations (with circuit/schematic designation) are within a limited current circuit	Secondary side of D/A Inverter
Engineering Conditions of Acceptability	
When installed in an end-product, consideration must be given to the following:	

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

1	**GENERAL**		Pass

1.5	**Components**		Pass
1.5.1	Comply with IEC 950 or relevant component standard	(see appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	Components certified to IEC harmonized standard and checked for correct application. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950 and the relevant component Standard. Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950.	Pass
	Dimensions (mm) of mains plug for direct plug-in . :	Not direct plug-in unit.	N/A
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) ..... :		N/A
1.5.3	Thermal controls	There are no thermal controller used.	N/A
1.5.4	Transformers	Evaluated as an element of power supply certification.	Pass
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors in primary circuits ..... :	Evaluated during separate certification of power supply.	Pass
1.5.7	Double or reinforced insulation bridged by components		N/A
1.5.7.1	Bridging capacitors	Evaluated as part of the power supply.	N/A
1.5.7.2	Bridging resistors	Evaluated as part of the power supply.	N/A

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.7.3	Accessible parts	Evaluated as part of the power supply.	Pass
1.5.8	Components in equipment for IT power systems	Evaluated during separate certification of power supply.	N/A
1.6	**Power Interface**		Pass
1.6.1	AC power distribution systems	Class III unit intended to be supplied by an external non-energy hazardous SELV power supply.	N/A
1.6.2	Input current	(see appended table 1.6.2) The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under NORMAL LOAD.	Pass
1.6.3	Voltage limit of hand-held equipment	The unit is not a hand-held equipment.	N/A
1.6.4	Neutral conductor	Neutral insulation is provided in the power supply.	Pass

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
1.7	**Marking and Instructions**		Pass
1.7.1	Power rating	Unit not provided with means for connection to mains.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	Optional, 24 Vdc	Pass
	Symbol for nature of supply for d.c..... :	Optional.	Pass
	Rated frequency or frequency range (Hz) ..... :	dc	N/A
	Rated current (A)..... :	Optional, 2.2 A (for Model TPC-650XXXX and P1-PXXXX) or 1.5 A (for Model TPC-642XXX-XXXX)	Pass
	Manufacturer's name/Trademark ..... :	ADVANTECH	Pass
	Type/model ..... :	P1-PXXXX, TPC-650XXXX and TPC-642XXX-XXXX where X may be any alphanumeric character or blank.	Pass
	Symbol of Class II ..... :		N/A
	Other symbols..... :	Additional symbols may be provided when submitted for National Approval.	Pass
	Certification marks ..... :	UL, C-UL.	Pass
1.7.2	Safety instructions	Safety instructions in English. Other languages will be provided when submitted for national approval.	Pass
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment ..... :	Evaluated as an element of power supply certification.	N/A
1.7.5	Power outlets on the equipment..... :	No standard power outlets are provided.	N/A
1.7.6	Fuse identification ..... :	Evaluated as an element of power supply certification.	N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking ..... :		N/A

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.2	Colours.....:	A green LED is illuminated when the unit is operating and Only functional indicators use color.	Pass
1.7.8.3	Symbols according to IEC 60417.....:	There are no switches in the equipment.	N/A
1.7.8.4	Markings using figures .....:	Figures are not used for indicating different positions of controls.	N/A
1.7.9	Isolation of multiple power sources .....:	Class III unit intended to be supplied by an external non-energy hazardous SELV power supply.	N/A
1.7.10	IT power system	Evaluated during separate certification of power supply.	N/A
1.7.11	Thermostats and other regulating devices	No thermostats or similar regulating devices.	N/A
1.7.12	Language .....:		-
1.7.13	Durability	The marking(s) withstood the required test.	Pass
1.7.14	Removable parts	No marking is located on (a) removable part(s).	Pass
1.7.15	Replaceable batteries	The required warning is in both the operation and service manuals.	Pass
	Language .....:	Reviewed only English markings/instructions. May be provided in other languages when the equipment will be applied for other national certificated.	-
1.7.16	Operator access with a tool.....:	No operator access areas require the use of a tool.	Pass
1.7.17	Equipment for restricted access locations.....:	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

2	**PROTECTION FROM HAZARDS**	Pass

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

2.1	**Protection from electric shock and energy hazards**		Pass
2.1.1	Protection in OPERATOR access areas		Pass
2.1.1.1	Access to energized parts	The operator has access to bare parts of SELV CIRCUITS.	Pass
	Test by inspection ..... :	Operator can not contact with any parts with only basic insulation to ELV or hazardous voltage.	Pass
	Test with test finger ..... :	The test finger was unable to contact bare hazardous parts, basic insulation, or ELV circuits.	Pass
	Test with test pin ..... :	The test pin was unable to contact bare hazardous parts.	Pass
	Test with test probe ..... :	No TNV present.	N/A
2.1.1.2	Battery compartments ..... :		N/A
2.1.1.3	Access to ELV wiring	Internal wiring in an ELV circuit is not user accessible.	N/A
	Working voltage (V); distance (mm) through insulation ..... :		-
2.1.1.4	Access to hazardous voltage circuit wiring	No internal wiring accessible to the user.	N/A
2.1.1.5	Energy hazards ..... :	Class III unit intended to be supplied by an external non-energy hazardous SELV power supply.	N/A
2.1.1.6	Manual controls	The equipment does not contain any knobs, handles, levers, or the like.	N/A
2.1.1.7	Discharge of capacitors in the primary circuit	Evaluated as an element of power supply certification.	N/A
	Time-constant (s); measured voltage (V) ..... :		-
2.1.2	Protection in service access areas	No bare parts operating at HAZARDOUS VOLTAGES in a service access area.	N/A
2.1.3	Protection in restricted access locations		N/A

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

2.2	**SELV Circuits**		Pass
2.2.1	General requirements	SELV levels are maintained after single fault condition.	Pass
2.2.2	Voltages under normal conditions (V) ..... :	All accessible voltages are less than 42.4 Vp or 60 V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V) ..... :	All critical SELV reliability are considered in seperate power supply evaluation.	Pass
2.2.3.1	Separation by double or reinforced insulation (method 1)	The critical seperation betwee SELV and Primary considerd in power supply investigation.	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 ..... :	SELV connected to limited current circuit.	Pass

2.3	**TNV Circuits**		N/A
2.3.1	Limits	No TNV circuit.	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

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

2.4	**Limited Current Circuits**		Pass
2.4.1	General requirements		Pass
2.4.2	Limit values	70 mA peak.	Pass
	Frequency (Hz) ..... :	Frequency not exceeding 100 KHz in normal condition and exceed 100 KHz in fault conditions.	-
	Measured current (mA) ..... :	The steady-state current drawn through a non-inductive resistor did not exceed 70 mA peak.	-
	Measured voltage (V)..... :	Max. 472 V	-
	Measured capacitance (µF) ..... :	Maximum normal circuit voltage less than 15 kV peak or dc. Circuit capacitance is 2200 pF.	-
2.4.3	Connection of limited current circuits to other circuits	The LIMITED CURRENT CIRCUIT connected to other circuits complies with the requirements of Sub-clause 2.4.1.	Pass

2.5	**Limited Power Sources**		N/A
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition		N/A
	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) ..... :		-
	Current rating of overcurrent protective device (A) :		-

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

2.6	**Provisions for Earthing and Bonding**		N/A
2.6.1	Protective earthing	Class III equipment.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm²), AWG ..... :		-
2.6.3.2	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm²), AWG ..... :		-
2.6.3.3	Rated current (A), type and nominal thread diameter (mm)..... :		N/A
	Resistance (Ohm) of earthing conductors and their terminations, test current (A)..... :		N/A
2.6.3.4	Colour of insulation ..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	Protective earthing and bonding terminals		N/A
	Rated current (A), type and nominal thread diameter (mm)..... :		-
2.6.4.2	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network		N/A

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

2.7	**Overcurrent and Earth Fault Protection in Primary Circuits**		N/A
2.7.1	Basic requirements		N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
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 interlock used.	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	Interlocks with moving parts		N/A
2.8.6	Overriding an interlock		N/A
2.8.7	Switches and relays in interlock systems		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 (V)	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

2.9	**Electrical Insulation**		Pass
2.9.1	Properties of insulating materials	All critical insulation property are covered in power supply investigation.	Pass
2.9.2	Humidity conditioning		N/A
2.9.3	Requirements for insulation		N/A
2.9.4	Insulation parameters		N/A
2.9.5	Categories of insulation	Functional.	Pass

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict
2.10	**Clearances, Creepage Distances and Distances Through Insulation**		Pass
2.10.1	General	Pollution degree 2 applicable.	Pass
2.10.2	Determination of working voltage		Pass
2.10.3	Clearances	All critical clearance distances are covered in power supply evaluation.	Pass
2.10.3.1	General		Pass
2.10.3.2	Clearances in primary circuit	Evaluated as an element of power supply certification.	N/A
2.10.3.3	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.4	Measurement of transient levels		N/A
2.10.4	Creepage distances	Creepages in primary circuits covered in power supply evaluation. (see appended table 2.10.3 and 2.10.4)	Pass
	CTI tests.....:	Material group IIIb; 100 <=CTI <175.	-
2.10.5	Solid insulation	Evaluated during separate certification of power supply.	N/A
2.10.5.1	Minimum distance through insulation		N/A
2.10.5.2	Thin sheet material	All critical distances through insulation are covered in power supply evaluation.	Pass
	Number of layers (pcs).....:		-
	Electric strength test.....:		-
2.10.5.3	Printed boards	PWB is not used as reinforced or supplementary insulation.	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	All critical distances through insulation are covered in power supply evaluation.	Pass
	Number of layers (pcs).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Two wires in contact inside component; angle between 45° and 90°		N/A
2.10.6	Coated printed boards	No special coating used.	N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C)..... :		N/A
2.10.6.5	Electric strength test..... :		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test..... :		-
2.10.7	Enclosed and sealed parts..... :	No hermetically sealed or enclosed components used.	N/A
	Temperature T1=T2 + Tmra - Tamb +10K (°C)..... :		N/A
2.10.8	Spacings filled by insulating compound ..... :		N/A
	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

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

3.1	**General**		Pass
3.1.1	Current rating and overcurrent protection	All internal wiring used in the distribution of primary power protected against overcurrent were evaluated as an element of power supply certification.	Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	Pass
3.1.4	Insulation of conductors	Uninsulated conductors have been adequately fixed to prevent, in normal use, any reduction of creepage or clearance distances below those prescribed by in 2.9.	Pass
3.1.5	Beads and ceramic insulators	The equipment does not have any beads or similar insulators.	N/A
3.1.6	Screws for electrical contact pressure	The equipment does not have any screw-type connections.	N/A
3.1.7	Non-metallic materials in electrical connections	No contact pressure through insulating material.	Pass
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections. Machine screws only.	Pass
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	Sleeving is not used as supplementary insulation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.2	**Connection to A.C. Mains Supplies**		N/A
3.2.1	Means of connection ..... :	Investigated as an element of power supply certification.	N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter (mm) of cable and conduits..... :		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
	Type ..... :		-
	Rated current (A), cross-sectional area (mm²),AWG ..... :		-
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) ..... :		-
	Longitudinal displacement (mm) ..... :		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm); test mass (g) ..... :		-
	Radius of curvature of cord (mm)..... :		-
3.2.9	Supply wiring space		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.3	**Wiring Terminals for Connection of External Conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Rated current (A), cord/cable type, cross-sectional area (mm²) ..... :		N/A
3.3.5	Rated current (A), type and nominal thread diameter (mm)..... :		N/A
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 A.C. Mains Supply**		N/A
3.4.1	General requirement	Evaluated as an element of power supply certification.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Single-phase equipment		N/A
3.4.7	Three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

3.5	**Interconnection of Equipment**		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits..... :	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

4	**PHYSICAL REQUIREMENTS**	Pass

4.1	**Stability**		N/A
	Angle of 10°	Based on construction, the test was deemed not necessary.	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		Pass
4.2.3	Steady force test, 30 N	The equipment does not have any internal enclosures.	N/A
4.2.4	Steady force test, 250 N	No hazards as a result of the 250 N test.	Pass
4.2.5	Impact test		Pass
4.2.6	Drop test		N/A
4.2.7	Stress relief	No indication of shrinkage or distortion on enclosures due to the stress relief test (70°C/7 h).	Pass
4.2.8	Cathode ray tubes	The equipment does not have any CRT's	N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps	The equipment does not have any high pressure lamps.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.3	**Design and Construction**		Pass
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N)..... :		N/A
4.3.3	Adjustable controls	The equipment does not have a voltage selector	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress.	N/A
4.3.5	Connection of plugs and sockets	The equipment does not have any interchangeable plugs/sockets.	N/A
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque (Nm)..... :		-
4.3.7	Heating elements in earthed equipment	The equipment does not have any heating elements.	N/A
4.3.8	Batteries	See appended table 5.3	Pass
4.3.9	Oil and grease	The insulation of the internal wiring is not exposed to oil, grease, etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not produce dust or employ powders, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	The equipment does not contain liquids.	N/A
4.3.12	Flammable liquids ..... :	The equipment does not use any flammable liquids.	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation; type of radiation ..... :	The equipment does not generate ionizing radiation or contain flammable liquids or gases.	N/A
	Equipment using lasers		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.4	**Protection Against Hazardous Moving Parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A

4.5	**Thermal Requirements**		Pass
4.5.1	Temperature rises	(see appended table) The equipment and its component parts did not attain excessive temperatures during normal operation.	Pass
	Normal load condition per Annex L ..... :	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	Pass
4.5.2	Resistance to abnormal heat	No parts at hazardous voltage are directly mounted on thermoplastic parts.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.6	**Openings in Enclosures**		Pass
4.6.1	Top and side openings	Foreign objects entering the enclosure will not contact bare parts at hazardous voltage or energy. (No hazardous parts within 5° projection).	Pass
	Dimensions (mm) ..... :		-
4.6.2	Bottoms of fire enclosures	Openings in the bottom, each not larger than 40 mm² , under components and parts meeting the requirements for FLAMMABILITY CLASS V-1	Pass
	Construction of the bottom ..... :		-
4.6.3	Doors or covers in fire enclosures	The equipment does not have any doors or covers.	N/A
4.6.4	Openings in transportable equipment	Unit not transportable.	N/A
4.6.5	Adhesives for constructional purposes	Adhesives not used for securement of internal barriers or screens.	N/A
	Conditioning temperature/time ..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict

4.7	**Resistance to Fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass
4.7.2	Conditions for a fire enclosure	Suitable fire enclosure is provided.	Pass
4.7.2.1	Parts requiring a fire enclosure		N/A
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		N/A
4.7.3.1	General		N/A
4.7.3.2	Materials for fire enclosures		Pass
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Suitable fire enclosure suit be provided in end product. (All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better and Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed).)	N/A
4.7.3.5	Materials for air filter assemblies	The equipment does not have any air filters.	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

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

5.1	**Touch current and protective conductor current**		N/A
5.1.1	General	Secured by approved power adapter.	N/A
5.1.2	Equipment under test (EUT)		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Test voltage (V)..... :		-
	Measured current (mA) ..... :		-
	Max. allowed 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		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network		N/A
	Test voltage (V)..... :		-
	Measured current (mA) ..... :		-
	Max. allowed current (mA) ..... :		-
5.1.8.2	Summation of touch currents from telecommunication networks		N/A

5.2	**Electric Strength**		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**Abnormal Operating and Fault Conditions**		Pass
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors		N/A
5.3.3	Transformers	Evaluated as part of power supply.	Pass
5.3.4	Functional insulation ..... :	Functional insulation complies with the requirements (a), (b), or (c).	Pass
5.3.5	Electromechanical components	The equipment does not have any electromechanical components in the secondary.	N/A
5.3.6	Simulation of faults	(See appended table 5.3)	Pass
5.3.7	Unattended equipment	Equipment is not intended for unattended use.	N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire, emission of molten metal or deformation was noted during the tests.	Pass

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**	N/A

6.1	**Protection of telecommunication network service personnel, 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

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Clause	Requirement + Test	Result - Remark	Verdict

6.2	**Protection of Equipment Users From Overvoltages on Telecommunication Networks**		N/A
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 Telecommunication Wiring System From Overheating**		N/A
	Max. output current (A) ..... :		-
	Current limiting method ..... :		-

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, material ..... :		-
	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		N/A
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) ..... :		-

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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.2.6	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, 8		N/A
	Sample 1 burning time (s)..... :		-
	Sample 2 burning time (s)..... :		-
	Sample 3 burning time (s)..... :		-

A.3	**High current arcing ignition test (see 4.7.3.2)**		N/A
A.3.1	Samples, material ..... :		-
	Wall thickness (mm)..... :		-
A.3.5	Compliance criteria		N/A
	Sample 1 number of arcs to ignition (pcs)..... :		-
	Sample 2 number of arcs to ignition (pcs)..... :		-
	Sample 3 number of arcs to ignition(pcs)..... :		-
	Sample 4 number of arcs to ignition(pcs)..... :		-
	Sample 5 number of arcs to ignition (pcs)..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict

A.4	**Hot wire ignition test (see 4.7.3.2)**		N/A
A.4.1	Samples, material ..... :		-
	Wall thickness (mm)..... :		-
A.4.5	Compliance criteria		N/A
	Sample 1 ignition time (s)..... :		-
	Sample 2 ignition time (s)..... :		-
	Sample 3 ignition time (s)..... :		-
	Sample 4 ignition time (s)..... :		-
	Sample 5 ignition time (s)..... :		-

A.5	**Hot flaming oil test (see 4.6.2)**	N/A

A.6	**Flammability tests for classifying materials V-0, V-1 or V-2**		N/A
A.6.1	Samples, material ..... :		-
	Wall thickness (mm)..... :		-
A.6.5	Compliance criteria		N/A
A.6.6	Permitted retest		N/A

A.7	**Flammability test for classifying foamed materials HF-1, HF-2 or HFB**		N/A
A.7.1	Sample, material ..... :		-
	Wall thickness (mm)..... :		-
A.7.4	Compliance criteria		N/A
A.7.5	Compliance criteria, HF-2		N/A
A.7.6	Compliance criteria, HF-1		N/A
A.7.7	Compliance criteria, HBF		N/A
A.7.8	Permitted retest, HF-1 or HF-2		N/A
A.7.9	Permitted retest, HBF		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A.8	**Flammability test for classifying materials HB**		N/A
A.8.1	Samples, material ..... :		-
	Sample thickness (mm)..... :		-
A.8.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.8.4	Test procedure		N/A
A.8.5	Compliance criteria		N/A
A.8.6	Permitted retest		N/A

A.9	**Flammability test for classifying materials 5V**		N/A
A.9.1	Samples, material ..... :		-
	Sample thickness (mm)..... :		-
A.9.4	Test procedure, test bars		N/A
A.9.5	Test procedure, test plaques		N/A
A.9.6	Compliance criteria		N/A
A.9.7	Permitted retest		N/A

A.10	**Stress relief conditioning (see 4.2.7)**		N/A
	Temperature (°C) ..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict

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)..... :		-
B.6	Running overload test for DC motors in secondary circuits		N/A
B.7	Locked-rotor overload test for DC 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) ..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict

C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position ..... :		-
	Manufacturer ..... :		-
	Type ..... :		-
	Rated values ..... :		-
	Method of protection ..... :		-
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings ..... :		N/A

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
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
	Ionizing radiation		N/A
	Measured radiation (mR/h) ..... :		-
	Measured high-voltage (kV) ..... :		-
	Measured focus voltage (kV) ..... :		-
	CRT markings ..... :		-

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

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Clause	Requirement + Test	Result - Remark	Verdict

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

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (f)..... :		-
M.3.1.2	Voltage (V) ..... :		-
M.3.1.3	Cadence; time (s), voltage (V) ..... :		-
M.3.1.4	Single fault current (mA) ..... :		-
M.3.2	Tripping device and monitoring voltage..... :		N/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

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

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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])
Power Supply	Linearity Electronics Co., Ltd.	LAD6019AE2	Class I I/P: 100-240V, 1.5A, 50-60Hz O/P: +24Vdc/2A	IEC 60950	--, TUV CB Cert. JPTUV-006644
Power Supply	American Skynet Electronic Co	SNP-PA59	See Enclosure Miscellaneous for test investigation.	IEC 60950	--, --
Enclosure	Chi Mei	PA-765A	V-1 or better , 80°C min.	UL 94	--, UL
LCD Panel (for models P1-PXXXX, TPC-642XXXX)	--	--	5.7" and 6.4"	--	--, --
LCD Panel (for models TPC-650XXX-XXXX)	--	--	5.7"	--	--, --
Fuse holder	Conquer Electronics Co., Ltd.	CQ-206B	5A, 250V	UL 512	--, UL
Fuse holder	Marushin Electric Mfg Co., Ltd.	MF528	5A, 250V	UL 512	--, UL
Fuse	Bussmann Div Cooper (UK) Ltd.	S505	5A, 250V	IEC 60 127-2	--, UL, VDE
Fuse	Bel Fuse Inc.	5HT	5A, 250V	IEC 60 127-2	--, UL, VDE
Fuse	Littlefuse Triad Inc.	215	5A, 250V	IEC 60 127-2	--, UL, VDE
Fuse	Wickmann-Werke GmbH	19181	5A, 250V	IEC 60 127-2	--, UL, VDE
Fuse	Hollyland Co., Ltd.	50T	5A, 250V	IEC 60 127-2	--, UL, VDE
Lithium Battery (BAT54C)	Rayovac	BR2032	3 V, 300 mAh. Max. Abnormal Charging Current 4 mA	--	--, UL
Inverter	King Core Electronics	HY1006	I/P: 14V, 0.17A O/P: 305V, 6mA max.	--	--, --
Inverter	Lecerf	LV-1201-H	I/P: 12V, 800mA O/P: 1100V, 5mA max.	--	--, --
PWB	--	--	V-1 or better, 105°C min.	UL796	--, UL

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Clause	Requirement + Test	Result - Remark	Verdict

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

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	**TABLE: electrical data (in normal conditions)**						Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	I fuse (mA)	condition/status	
In SPS	2.2	24Vdc	22.32	930	--	Max. normal load	
supplementary information:							
"Maximum normal load" was defined as follows: with screen full raster, maximum brightness and contrast and operated continuously.							

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)
--	--	--	--	--	--	--
supplementary information:						
All circuits are SELV, only functional insulation has been required.						

2.10.5	**TABLE: distance through insulation measurements**			N/A
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
supplementary information:				

4.5	**TABLE: temperature rise measurements**		Pass
	test voltage (V) ..... :	24V/1.5 hr	—
	t1 (°C) ..... :	--	—
	t2 (°C) ..... :	See below	—
temperature rise dT of part/at:	dT (K)	required dT (K)	
Normal Condition	--	--	
1. T1 coil of Inverter	36	65	
2. PWB near CPU	35	65	
3. Touch Panel	10	55	
4. Ambient	26°C	--	
Blocked Opening	--	--	
1. T1 coil of Inverter	39	--	
2. PWB near CPU	41	--	

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

3. Touch Panel			13	--	
4. Ambient			22°C	--	
temperature rise dT of winding:	R_1 (Ω)	R_2 (Ω)	dT (K)	required dT (K)	insulation class
--	--	--	--	--	--
supplementary information:					
- Tmra = 40°C.					

4.5.2	**TABLE: ball pressure test of thermoplastics**		N/A
	allowed impression diameter (mm)..... :		—
part		test temperature (°C)	impression diameter (mm)
supplementary information:			

5.2	**TABLE: electric strength tests and impulse tests**		N/A
test voltage applied between:		test voltage (V)	breakdown Yes / No
supplementary information:			

5.3	**TABLE: fault condition tests**					Pass
	ambient temperature (°C) ..... :				25	—
	model/type of power supply ..... :				(See appended table 1.5.1)	—
	manufacturer of power supply..... :				(See appended table 1.5.1)	—
	rated markings of power supply..... :				(See appended table 1.5.1)	—
component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
D4	Short	24 Vdc	--	--	--	Unit operation normal, CN1 (Pin 2-Pin 3): 3.6Vpk, No hazard.
C41	Short	24 Vdc	--	FS1	5	Fuse opened, No hazard.

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

Unit	Blocked openings	24 Vdc	1.5 hr.	FS1	0.9	No hazard. See appended table 4.5 for details.
For Lithium Battery (BAT54C)	--	--	--	--	--	--
R135	Short	24 Vdc	--	--	--	Normal reverse current: 0.001 mA; Abnormal reverse current 0.001 mA.
DD2 (pin 3-2)	Short	24 Vdc	--	--	--	Normal reverse current: 0.001 mA; Abnormal reverse current 3.121 mA.
supplementary information:						
N/A						

A.6.5	**TABLE: flammability test for classifying materials V-0, V-1 or V-2**	N/A
sample No. / ref.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
supplementary information:		

A.6.6	**TABLE: flammability re-test for classifying materials V-0, V-1 or V-2**	N/A
sample No.	afterflame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
supplementary information:		

A.7.4, A.7.5, A.7.6 and A.7.7	**TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF**			N/A
sample No. / ref.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
supplementary information:				

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

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

A.7.9	**TABLE: flammability re-test for classifying foam materials HBF**			N/A
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
supplementary information:				

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

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

IEC 60950			
Clause	Requirement + Test	Result - Remark	Verdict

A.9.6	**TABLE: flammability test for classifying materials 5V**				N/A
sample	test bars		test plaques		
No./ref.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
supplementary information:					

A.9.7	**TABLE: flammability re-test for classifying materials 5V**				N/A
sample	test bars		test plaques		
No.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
supplementary information:					

Enclosure

National Differences

(Total 25 Pages including this Cover Page)

Argentina
Australia / New Zealand
Austria**
Belgium**
Brazil*
China
Czech Republic*
Denmark
Finland
France**
Germany
Greece**
Group
Hungary*
India*
Ireland
Israel*
Italy**
Japan
Korea
Malaysia*
Netherlands**
Norway
Poland*
Portugal*
Russia*
Singapore
Slovakia*
Slovenia*
South Africa*
Spain
Sweden
Switzerland
Turkey*
Ukraine*
United Kingdom
Yugoslavia*

* No National Differences Declared
** Only Group Differences

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Argentina - Differences to IEC60950, Third Edition (1999)			
1.5.2	Certified plug according to IRAM 2063 (two prong) or IRAM 2073 (three prong) are used in accordance with their ratings		N/A
1.7.2	Operating/safety instructions made available to the user in Spanish. Product information appears on the product.	Reviewed only English markings/instructions. May be provided in other languages when the equipment will be applied for other national certificated.	N/A
1.7.12	Language of safety markings/instructions is Spanish	Reviewed only English markings/instructions. May be provided in other languages when the equipment will be applied for other national certificated.	N/A
General	Household power supply sources are 220 V a.c., 50 Hz		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Australia / New Zealand - Differences to IEC60950, Third Edition (1999)			
1.2.12.11	POTENTIAL IGNITION SOURCE Possible fault such as a faulty contact or interruption in an electrical connection, including a conductive pattern on printed boards, which can start a fire if, under normal operating conditions, the open circuit voltage exceeds 50 V (peak) ac or dc and the product of this open circuit voltage and the measured current through this possible fault exceeds 15 VA		N/A
1.5.1	Add to the first paragraph: "or the relevant Australian or New Zealand Standard".		N/A
1.5.2	Add to the first and third dashed items after the words "IEC Component Standard": "or the relevant Australian or New Zealand Standard".		N/A
1.6.1	Add: AC power distribution systems classified as TT or IT are not allowed	Evaluated during separate certification of power supply.	N/A
1.7.12	Add to the first paragraph: In Australia and New Zealand all safety instructions shall be in English.	Reviewed only English markings/instructions.	Pass

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
3.2.5	Substitute for Table 3B: Sizes of Conductors ---------- Rated Current of Equipment (A) — Nominal Size (kcmil) ---------- 0.2 <= 3 — 0.5* 3 <= 7.5 — 0.75 7.5 <= 10 — 1.00** 10 <= 16 — 1.5*** 16 <= 25 — 2.5 25 <= 32 — 4 32 <= 40 — 6 40 <= 63 — 10 63 <= 80 — 16 80 <= 100 — 25 100 <= 125 — 35 125 <= 160 — 50 160 <= 190 — 70 190 <= 230 — 95 230 <= 260 — 120 260 <= 300 — 150 300 <= 340 — 185 340 <= 400 — 240 400 <= 460 — 300 ---------- * This nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord or cord guard, enters the appliance, and the entry to the plug, does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see Note 2 to Table 2.17 of AS/NZS 3191). ** Cross-section 0.75 mm² *** Cross-section 1.0 mm²		N/A
4.3.6	Replace the third paragraph: Equipment having pins for insertion into socket-outlets shall comply with 2.8.1, 2.8.4, 2.10, 2.12.6 and 2.14.6 of AS/NZS 3112, using the 10 A gauge in Appendix A of AS/NZS 3112.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
4.3.6	The equipment is inserted, as in normal use, into a socket outlet capable of accepting a 10 A plug complying with Fig. 2.1(a) of AS/NZS 3112. The socket outlet has a horizontal pivot at a distance of 8 mm behind the engagement face of the socket, and in the plane of the lower intersection of the center-lines of the contact apertures. The additional torque to be applied to maintain the engagement face in the vertical plane shall not exceed 0.25 Nm		N/A
4.3.13	For the purpose of this standard compliance with AS/NZS 2211.1 is deemed to be compliance with IEC60825.1		N/A
4.7	Add after the clause: For alternative resistance to fire test methods, refer to AS/NZS, Annex YY.		N/A
6.2.2	Replace the first paragraph by: In Australia (not in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2.	No TNV present.	N/A
6.2.2.1	In Australia, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulses test generator of Annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, Uc is: - for 6.2.1a): 7.0 kV for hand-held telephones and for headsets; 2.5 kV for other equipment; -for 6.2.1b) and 6.2.1c): 1.5 kV. NOTES: 1. The 7 kV impulse is to simulate lightning surges on typical Australian rural and semi-rural network lines. 2. The value of 2.5 kV for case (a) has been chosen primarily to ensure adequacy of the insulation concerned, and it does not necessarily simulate likely overvoltages.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
6.2.2.2	In Australia, the electrical separation is subjected to an electric strength test according to 5.2.2. The a.c. test voltage is: -for 6.2.1a): 3 kV -for 6.2.1b) and 6.2.1c): 1.5 kV NOTES: 1. Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. 2. The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

China - Differences to IEC60950, Third Edition (1999)			
1.4.5	The tolerance of rated voltage in IEC 60950 from +6% to -10% is changed by GB4943-2001 to tolerance of +10% and -10%	Investigated as an element of power supply certification.	N/A
1.7.1	Markings for supply voltage and frequency shall include China's mains voltage. According to GB4943-2001 a single rated voltage is expressed as 220 V	Investigated as an element of power supply certification.	N/A
1.7.1	- When a rated voltage range is given, the range covers 220 V		N/A
1.7.1	- When a variety of rated voltages or rated voltage ranges are given, one of them is 220 V, and unit shall be set as 220 V when shipped from the factory		N/A
1.7.1	- Rated frequency is 50 Hz or rated frequency range includes 50Hz	Investigated as an element of power supply certification.	N/A
1.7.1	- A unit not provided with a means for direct connection to the AC mains supply does not need not be marked with any electrical rating		Pass
1.7.12	According to GB4943-2001 instructions and equipment markings related to safety are provided in standardized Chinese	Reviewed only English markings/instructions. May be provided in other languages when the equipment will be applied for other national certificated.	N/A
3.2.1	Power supply plugs that are connecting equipment to AC mains supply are in accordance with requirements of Chinese standard GB1002		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Denmark - Differences to IEC60950, Third Edition (1999)			
1.2.4.1	Certain types of Class I appliances (see sub-clause 3.2.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.	Evaluated during separate certification of power supply.	N/A
1.7.2	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 (IEC 417, No. 5019) eller (IEC 417, No. 5017)." 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.a	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.		N/A
1.7.5.b	Class II equipment shall not be fitted with socket-outlets for providing power to other equipment.		N/A
1.7.15	Caution text concerning lithium batteries: ADVARSEL! Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage tilleverandøren. The size of the warning must be a minimum of 26 x 52 mm, the background shall be yellow colour with black frame, and the text in black colour. A white background is acceptable in the User's Instruction and in the Service Manual.	The required warning is in both the operation and service manuals.	Pass

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
3.2.1	Supply cord of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. Class I equipment provided with socket-outlets with earth contact 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 poly-phase equipment and single-phase equipment having a rated current exceeding 10 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-1-D1 or EN 60309-2.		N/A
Finland - Differences to IEC60950, Third Edition (1999)			
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE-EQUIPMENT TYPE B only.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Germany - Differences to IEC60950, Third Edition (1999)			
1.7.12	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.	Reviewed only English markings/instructions.May be provided in other languages when the equipment will be applied for other national certificated.	N/A
H.a	a) A license is required by those who operate an X-ray emission source		N/A
H.b	b) A license in accordance with Clause 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if: 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		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
H.c	c) A license in accordance with Clause 1 is also not required by persons who operate a 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 not exceed the maximum value stipulated by the manufacturer or importer		N/A
H.d	d) Furthermore, a license in accordance with Clause 1 is also not required by persons who operate X-ray emission source on which the electron acceleration voltage does not exceed 30 kV if: 1) the X-rays are generated only intrinsically safety CRTs complying with Enclosure III, No. 6 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measured 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			
SubClause	Difference + Test	Result - Remark	Verdict

Group - Differences to IEC60950, Third Edition (1999)			
2.7.1	Replace the text of this Sub-Clause by: Basic requirements 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)	Evaluated as an element of power supply certification.	N/A
2.7.1.a	a).Except as detailed in b) and c), protective devices necessary to comply with the requirements of subclause 5.3 shall be Included as parts of the equipment		N/A
2.7.1.b	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.		N/A
2.7.1.c	c).It is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instruction.		N/A
2.7.1.c	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
2.7.2	This subclause has been declared 'void'		N/A
3.2.3	Delete NOTE 1, and in table 3A delete the conduit sizes in parentheses.		N/A
3.2.5	Replace as follows: "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-F"	Evaluated as an element of power supply certification.	N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
3.2.5	In table 3B, replace the first four lines by the following: Up to and including 6 0.75 1) Over 6 up to and including 10 0.75 2) 1.0 Over 10 up to and including 16 1.0 3) 0.5 In the Conditions applicable to table 3B delete the words "in some countries" in condition 1. In NOTE 1, delete the second sentence.		N/A
3.3.4	In table 3D, delete the fourth line - conductor sizes for 10 to 13 A. and replace with the following: Over 10 up to & including 16 1.5 to 2.5 1.5 to by 4. Delete the fifth line - conductor sizes for 13 to 16A.	Evaluated as an element of power supply certification.	N/A
4.3.13	Replace the second compliance paragraph by: For equipment using LEDs or lasers, compliance is checked according to EN 60825- 1		N/A
4.3.13	NOTE 1 - if equipment falling within the scope of EN 60950 is inherently a class 1 laser product, i.e. it contains no embedded laser or LED of a higher class number, then a laser warning label or other laser warning statement is not required (see 1.1 of EN 60825-1). Renumber the NOTE below the third compliance paragraph as NOTE 2		N/A
H	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 1µSv/h (0.1 mR/h) (see note). Account is taken of the background level. Replace the NOTE as follows: NOTE - These values appear in directive 96/29/Euratorm.		N/A
P	Replace the text of this annex by: See annex ZA		Pass

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
Q	Add the following notes for the standards indicated: IEC 60127 series NOTE. Harmonized as EN 60127 series (not modified) IEC 60529 NOTE: Harmonized as EN 60529: 1991 (not modified) IEC 61032 NOTE: Harmonized as EN 61032: 1998 (not modified)		N/A
Ireland - Differences to IEC60950, Third Edition (1999)			
3.2.1	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
4.3.6	DIRECT PLUG-IN EQUIPMENT 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.	It should be provided when national approval.	N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Japan - Differences to IEC60950, Third Edition (1999)			
1.2.4.101	Addition: Definition of CLASS 0I EQUIPMENT		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"	Not direct plug-in unit.	N/A
1.2.12.101	Addition: Definition of VTM CLASS MATERIAL		N/A
1.7.101	Addition:Marking for CLASS 0I EQUIPMENT The following instruction is indicated on the visible place of the mains plug or the main body: "Provide an earthing connection"		N/A
1.7.101	The following instruction is indicated on the visible place on 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."		N/A
2.1.1.1	Replace: "IEC 60083" by "IEC 60083 or JIS C 8303" in 2.1.1.1 b)	Class III unit. It should be evaluated during separate certification of power supply.	N/A
2.6.3.1	Add the following after 1st paragraph: "This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT"		N/A
2.6.4.1	Replace 2nd sentence in 1st paragraph: "For CLASS I EQUIPMENT with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal"		N/A
2.6.5.4	Replace 1st sentence: "Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:"		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
2.6.101	Addition:Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing not used for equipment having a rated voltage exceeding 150 V		N/A
2.6.101	For plugs with a lead wire for earthing, the lead wire is not earthed by a clip		N/A
2.6.101	CLASS 0I EQUIPMENT provided with an earthing terminal or lead wire for earthing in the external where easily visible	Class III unit. It should be evaluated during separate certification of power supply.	N/A
3.2.5	Delete the following statement from a note 1 in Table 3B: "For RATED CURRENT up to 3A, a nominal cross-sectional area of 0.5 mm2 is permitted in some countries provided that the length of the cord does not exceed 2 m"		N/A
4.2.8	Add the following informative remark after the last sentence: "IEC 61965 is also applicable instead of IEC 60065"		N/A
4.5.1	Add the following to note 5) of Table 4A, Part 2: "With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for IEC 60335-1 3rd Edition in CB Bulletin 101B) are also acceptable"		N/A
4.5.1	Add a note reference 7) to "50", in the right column of Table 4A, Part 1 and add a note 7 to Table 4A, Part 2 as follows: "7) This value apply only to wiring or cords complying with relevant IEC standards. Others comply with Japanese requirements (refer to Japanese differences for IEC 60335-1 3rd Edition in CB Bulletin 101B)"		N/A
4.7.3.2	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"		N/A
5.1.6	Replace Table 5A to include maximum TOUCH CURRENT values for CLASS 0I EQUIPMENT		N/A
5.3.8.2	Replace 3rd Item as follows: "- BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;"		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
Annex A	Add the subclause A.101titled: "Flammability tests for classifying materials VTM" and the following: "Thin sheet materials shall comply with ISO 9773"	It should be evaluated during separate certification of power supply.	N/A
Annex G	Add 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"		N/A
Annex P	Add: "IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes"		N/A
Annex U	Replace 2nd paragraph as follows: "This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm"		N/A
U.2.1	Replacement:Electric strength "The test sample is prepared per IEC 60851-5:1997, 4.4.1 (for a twisted pair and subjected to the test of 5.2.2, 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"		N/A
U.2.2	Replacement:Flexibility and adherence Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameter of Table U.1 (mm)		N/A
U.2.2	Test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard and not less than: - 1500 V for BASIC INSULATION or SUPPLEMENTARY INSULATION, or; - 3000 V for REINFORCED INSULATION		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Korea - Differences to IEC60950, Third Edition (1999)			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains comply with the Korean requirement (KSC 8305)		N/A
7	Addition: EMC. The apparatus shall complies with the relevant CISPR requirements	It shall provided in national approval.	N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Norway - Differences to IEC60950, Third Edition (1999)			
1.5.8	Due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V).	It should be evaluated during separate certification of power supply.	N/A
1.7.2	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a communication network where safety relies on connection to protective earth, require a marking stating that the equipment must be connected to an earthed mains socket-outlet.		N/A
2.2.4	Requirements according to sub-clauses 1.7.2 and 6.1.2.1 apply for this clause.		N/A
2.3.2	Requirements according to sub-clause 6.1.2.1 apply for this clause.		N/A
2.3.3	Requirements according to sub-clause 6.1.2.1 apply for this clause.		N/A
2.3.4	Requirements according to sub-clauses 1.7.2 and 6.1.2.1 apply for this clause.		N/A
2.10.3.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		N/A
6.1.2.1	Note 2. 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.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.1	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 ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5 kV.		N/A
6.1.2.1	It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.		N/A
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE-EQUIPMENT TYPE B only.		N/A
G.2	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Singapore - Differences to IEC60950, Third Edition (1999)			
2.9.2	(a) After the first paragraph, insert the following: Under tropical conditions, the duration of the humidity conditioning is 5 days (120h) at a temperature: 40 ± 2°C with relative humidity: 90% to 95%. Conditions described in IEC Publications 60068-2-3: 1969 - "Test Ca: Damp Heat, Steady State" (temperature: 40 ± 2°C, relative humidity: 90% to 95 %) apply to insulation to be used under tropical conditions. The additional requirement on humidity conditioning is drawn from Clause 10.2 of IEC 60065: 1998		N/A
2.10.6.5	Delete "(48 h)" Explanation: To be consistent with 2.9.2		N/A
3.2.8	Replace "23°C ± 2°C" by "27°C ± 2°C"		N/A
General	IT Power Systems are not allowed in the Republic of Singapore and all clauses related to IT Power Systems are not applicable. For a.c. power distribution systems, only TN-S and TT systems are allowed		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Spain - Differences to IEC60950, Third Edition (1999)			
3.2.1	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 - 10 A shall be provided with a plug according to UNE 20315:1994 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 UNE 20315:1994 If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the UNE-EN 60309-2.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

Sweden - Differences to IEC60950, Third Edition (1999)			
1.5.1	Add the following: NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.	There are no any switches containing mercury.	N/A
1.7.2	If the separation between the mains and a SELV terminal relies upon connection to safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet. The marking text shall be in Swedish and as follows: "Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk".	Evaluated as an element of power supply certification.	N/A
6.1.2.1	Note 1. 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.		N/A
6.1.2.1	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 ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5 kV.		N/A
6.1.2.1	It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE-EQUIPMENT TYPE B only.		N/A
Switzerland - Differences to IEC60950, Third Edition (1999)			
1.5.1	Add the following: NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.	There are no any switches containing mercury.	N/A
1.7.15	Annex 4.10 of SR 814.013 (Ordinance on environmentally hazardous substances) applies for batteries.		N/A
3.2.1	Supply cords of equipment having a rated current not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 884-1 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 EN 60309 applies for plugs for currents exceeding 10 A.		N/A
6.1	Protective means in the equipment shall not prevent transient surge protection in the telecommunication network from operating properly (d.c. spark-over voltage of the surge suppressor installed in the telecommunication network: approx. 245 V).		N/A

IEC 60950			
SubClause	Difference + Test	Result - Remark	Verdict

United Kingdom - Differences to IEC60950, Third Edition (1999)			
3.2.1	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 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.5	A power supply cord with conductor of 1.25 mm² is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10A up to and including 13A is: 1.25 mm² to 1.5 mm² nominal cross-sectional area.	Evaluated as an element of power supply certification.	N/A
4.3.6	This test should be performed using an appropriate socket outlet with an earthing contact.		N/A

Enclosure

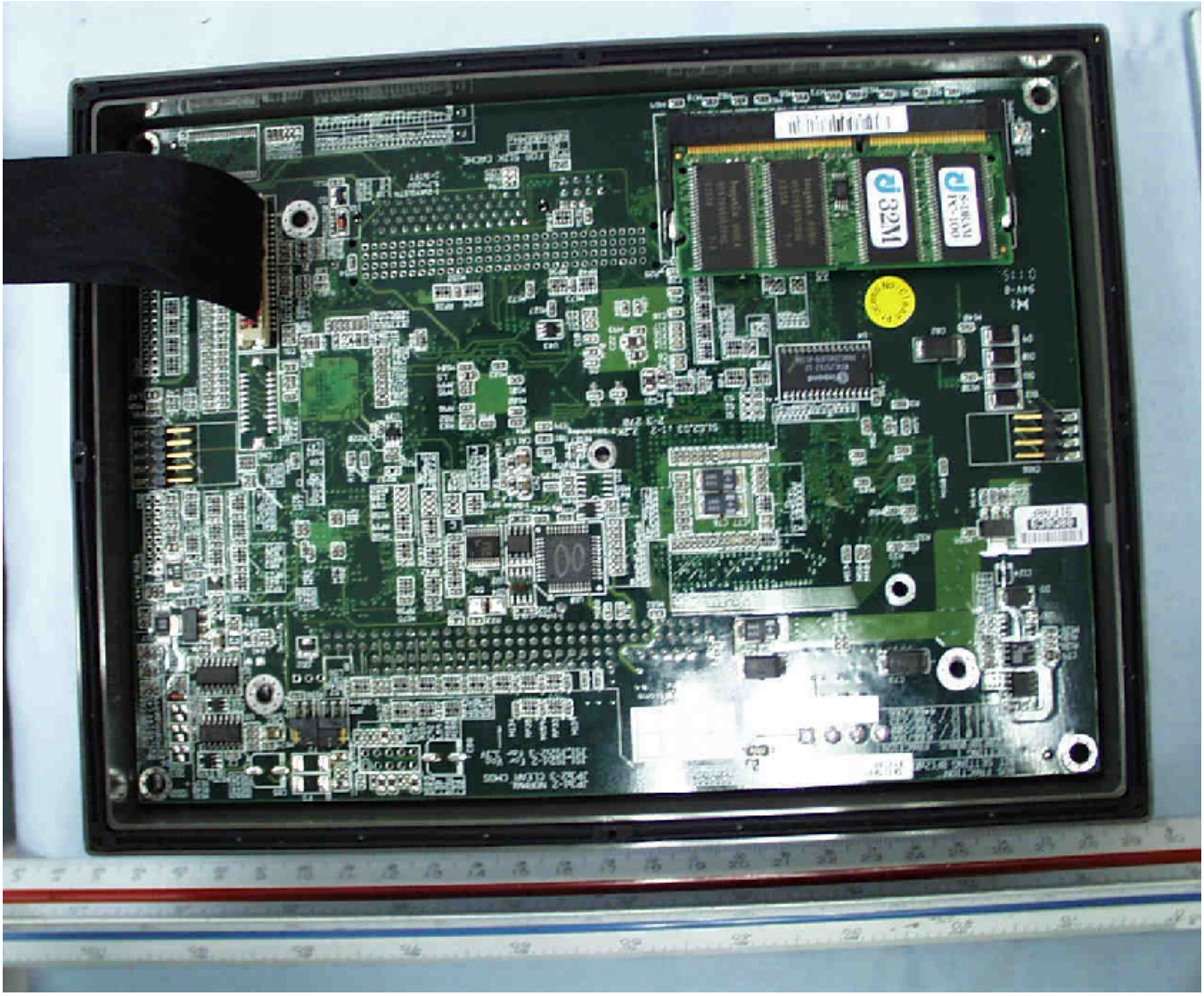
Photographs

(Total 7 Pages including this Cover Page)

Supplement Id	Description
3-13	Top view of unit
3-14	Bottom view of unit
3-15	Internal view of unit (1)
3-16	Internal view of unit (2)
3-17	Internal view of unit (3)
3-18	Internal view of unit (4)

LINEARITY
CAUTION
ATTENTION

ADVANTECH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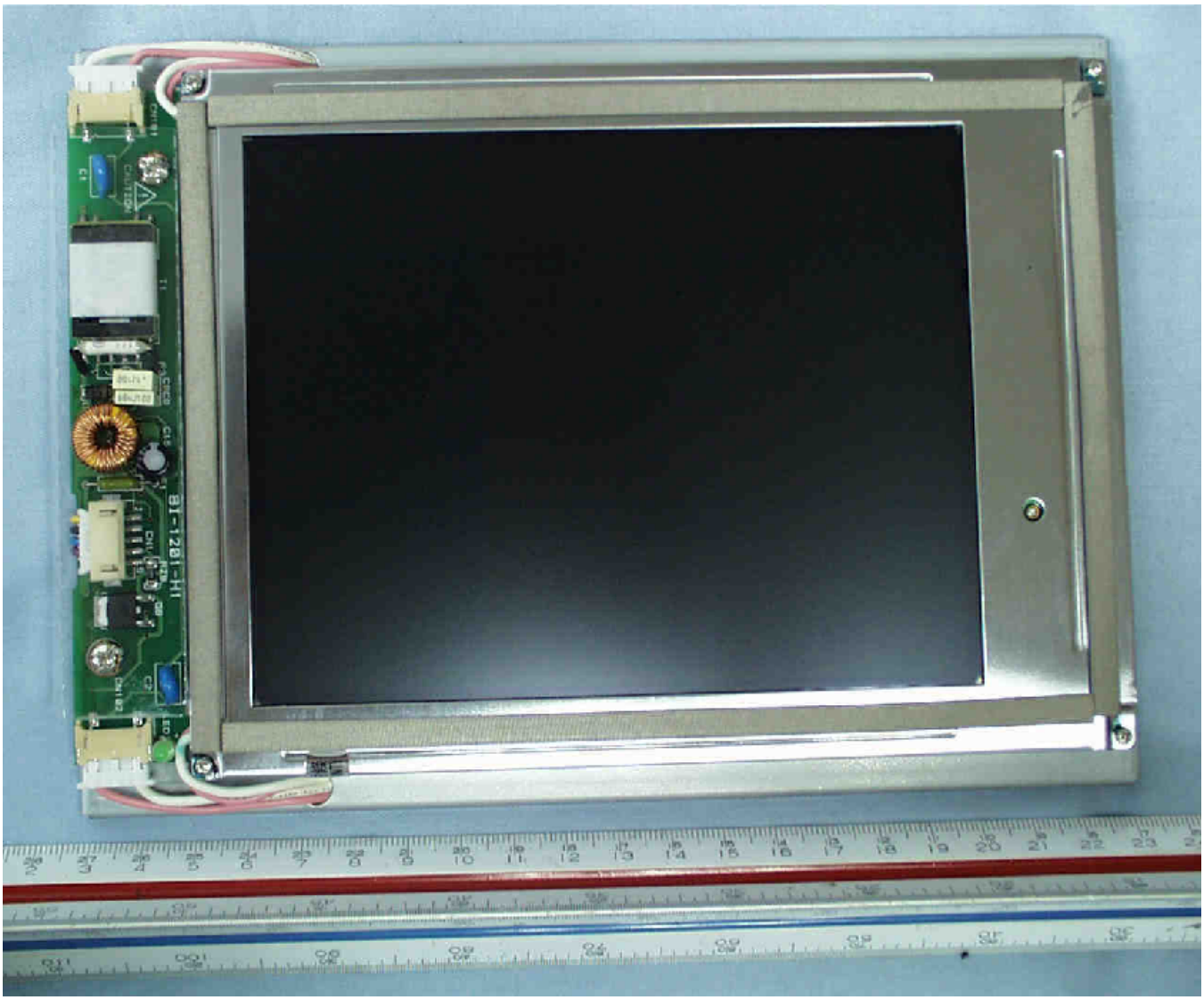
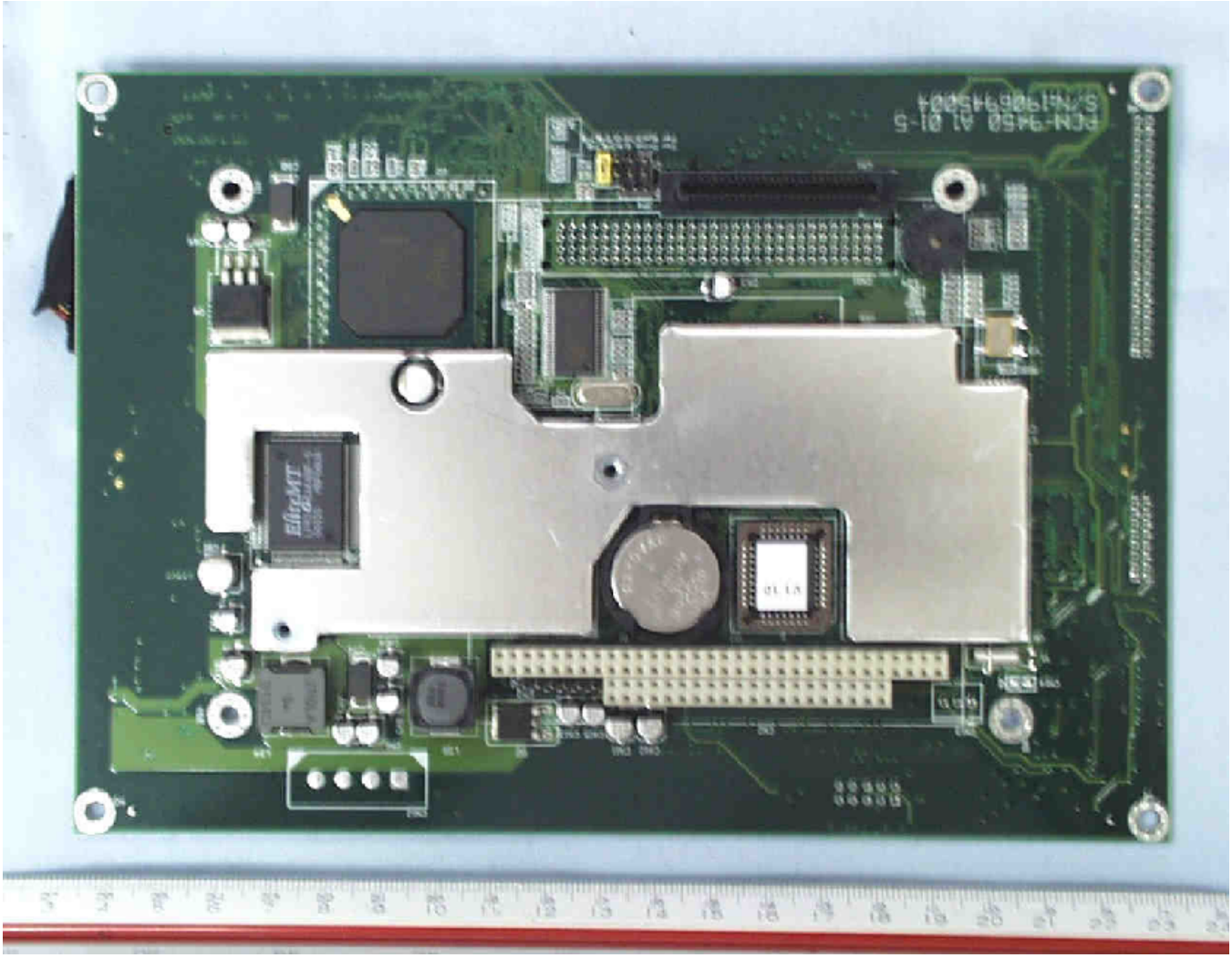




Enclosure

Schematics + PWB

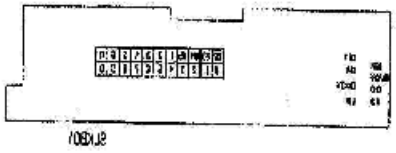
(Total 2 Pages including this Cover Page)

Supplement Id	Description
5-07	The D/A Inverter layout

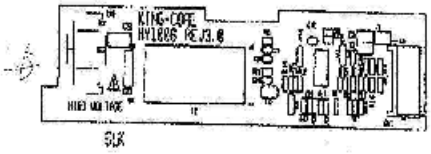
COMP

COMP MSK

SOLDER MSK


SILKSCR

SOLDER

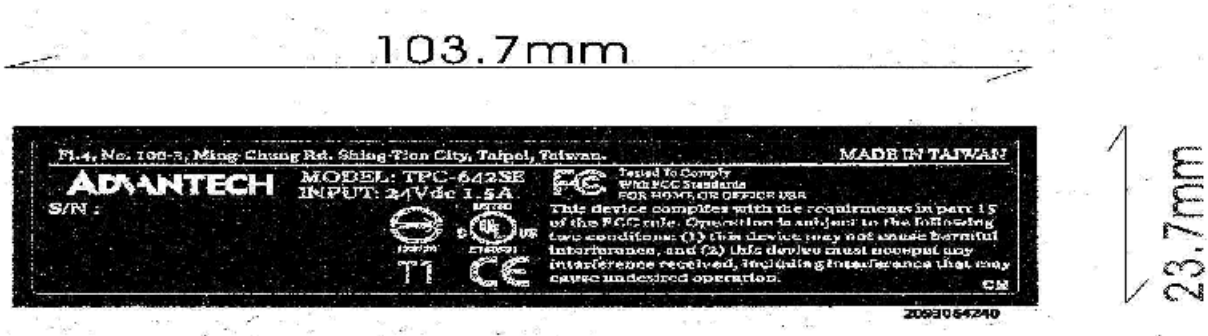

KING-COPE
HV1806 REV3.0
SILK

Enclosure

Miscellaneous

(Total 67 Pages including this Cover Page)

Supplement Id	Description
7-05	Marking Label
7-06	Investigation for power


103.7mm
23.7mm
Fl.4, No. 108-3, Ming Chung Rd. Shing Tien City, Taipei, Taiwan.
MADE IN TAIWAN
ADVANTECH
MODEL: TPC-642SE
INPUT: 24Vdc 1.5A
S/N :
Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE
This device complies with the requirements in part 15 of the FCC rule. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
T1
CE
CM
20030542240

COVER PAGE FOR TEST REPORT

Test Item Description:	Power Supply
Model/Type Reference:	SHP-PA59
Rating(s):	I/P: 115/230 Vac, 50/60 Hz, 1.5/0.8 A O/P: 24 Vdc, 2.0 A
Standards	IEC60950, Third Edition (1999)
Applicant Name and Address	
Factory Location(s):	SAME AS APPLICANT

This Report includes the following parts, in addition to this cover page:

1. Specific Technical Criteria
2. Clause Verdicts
3. Critical Components
4. Test Results
5. National Differences
6. Enclosures

All applicable tests according to the above standard(s) have been carried out.
Test results are valid only for the tested equipment.
This Test Report can be reproduced only in whole.
Amendments and corrections can be reproduced only with the original CB Test Report.
Written permission from UL International Demko A/S is required if the test report is copied in part.

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Mark ng Plate - Refer to Enclosure titled Miscellaneous for copy.

Particulars: test item vs. test requirements	
Equipment mobility	movable
Operating condition	continuous
Mains supply tolerance (%)	+6%, -10%
Test for IT power systems	No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	Class I (earthed)
Mass of equipment (kg)	0.29
Protection against ingress of water	IP 20
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P(Pass)
- test object does not meet the requirement	F(Fail)

General remarks:

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

The test results presented in this report relate only to the object 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:	
Report Summary	
All applicable tests according to the referenced standard(s) have been carried out.	
Product Description	
Consist of electronic components mounted on PWB, housed with plastic enclosure.	
Model Differences	
N/A	
Additional Information	
N/A	
Engineering Consideration	
The product was submitted and tested for use at the manufacturers recommended ambient temperature (Tmra) of:	40°C
The power supply means are:	Pluggable A. Detachable power cord
The product is intended for use on the following systems:	TN
The equipment disconnect device is considered to be:	Appliance inlet
The following circuit locations (with circuit/schematic designation) were investigated as a limited power source:	Output
Engineering Conditions of Acceptability	
When installed in an end product, consideration must be given to the following	

1	**GENERAL**	Pass

1.5	**Components**		Pass
1.5.1	Comply with IEC 950 or relevant component standard	(see appended table)	Pass
1.5.2	Evaluation and testing of components	Components certified to IEC harmonized standard and checked for correct application. Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950 and the relevant component Standard. Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950.	Pass
	Dimensions (mm) of mains plug for direct plug-in :	Not direct plug-in unit.	Pass
	Torque and pull test of mains plug for direct plug-in, torque (Nm), pull (N) :	Not direct plug-in unit	Pass
1.5.3	Thermal controls	No thermal control used	N/A
1.5.4	Transformers	See Annex C.	Pass
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors in primary circuits :	X capacitor meets the applicable requirements tested in IEC 60384-14:**1993** . Y capacitor comply with IEC 60384-**14: 1993**.See **appended** table 1.5.1	Pass
1.5.7	Double or reinforced insulation bridged by **components**		N/A
1.5.7.1	Bridging capacitors		N/A
1.5.7.2	Bridging resistors		N/A
1.5.7.3	Accessible parts		N/A
1.5.8	Components in equipment for IT power systems	Not for use on IT systems.	N/A

1.6	**Power Interface**		Pass
1.6.1	AC power distribution systems	AC power distribution systems are classify as TN.	Pass
1.6.2	Input current	(see appended table) The steady state input current of the equipment did not exceed the RATED CURRENT by more than 10% under NORMAL LOAD.	Pass
1.6.3	Voltage limit of hand-held equipment	The unit is not a hand-held equipment.	N/A
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation.	Pass

1.7	**Marking and Instructions**		Pass
1.7.1	Power rating	Rating marking readily visible to operator. See below for details.	Pass
	Rated voltage(s) or voltage range(s) (V) ..... :	115/230 Vac	Pass
	Symbol for nature of supply for d.c. ..... :	AC Source.	N/A
	Rated frequency or frequency range (Hz) ..... :	50/60 Hz.	Pass
	Rated current (A)	1.5/0.8 A	Pass
	Manufacturer's name/ trademark ..... :	**American Skynet Electronic Co. / Skynet**	Pass
	Type/model ..... :	**SHP**-PA59	Pass
	Symbol of Class II ..... :		N/A
	Other symbols	Additional symbols may be provided when submitted for National Approval.	Pass
	Certification marks ..... :	UL, C-UL.	Pass
1.7.2	Safety instructions	Operating/safety instructions made available to the user.	Pass
1.7.3	Short duty cycles	Continuous duty cycle.	N/A
1.7.4	Supply voltage adjustment ..... :	Unit is auto-ranging type.	N/A
1.7.5	Power outlets on the equipment ..... :	No power outlets.	N/A
1.7.6	Fuse identification ..... :	Fuse marking provided as follows: F1 T2A/250V.	Pass
1.7.7	Wiring terminals	See below.	Pass
1.7.7.1	Protective earthing and bonding terminals	The earth terminal is marked.	Pass
1.7.7.2	Terminal for a.c. mains supply conductors		N/A
1.7.8	Controls and indicators	No switches employed in unit	N/A

1.7.8.1	Identification, location and marking..... ..... :	No switches employed in unit	N/A
1.7.8.2	Colours .... :	No indicators with colors.	N/A
1.7.8.3	Symbols according to IEC 60417 .... :	No switches employed in unit	N/A
1.7.8.4	Markings using figures..... .... :	Figures are not used for indicating different positions of controls.	N/A
1.7.9	Isolation of multiple power sources..... ..... :	There is only one connection to hazardous voltages.	N/A
1.7.10	IT power system	Unit not evaluated for use in IT system.	N/A
1.7.11	Thermostats and other regulating devices	No adjustable thermal devices employed.	N/A
1.7.12	Language..... .... :	Safety instructions in English. Other languages will be provided when submitted for national approval.	
1.7.13	Durability	The marking(s) withstood the required test.	Pass
1.7.14	Removable parts	No marking is located on (a) removable part(s)	Pass
1.7.15	Replaceable batteries	No batteries employed in the power supply.	N/A
	Language..... .... :		
1.7.16	Operator access with a tool .... :	No operator access areas employed in power supplies.	N/A
1.7.17	Equipment for restricted access locations ..... :	Equipment not intended for installation in a RESTRICTED ACCESS LOCATION.	N/A

2	**PROTECTION FROM HAZARDS**	Pass

2.1	**Protection from electric shock and energy hazards**		Pass
2.1.1	Protection in OPERATOR access areas		Pass
2.1.1.1	Access to energized parts	See below.	Pass
	Test by inspection .... :	Operator can not contact with any parts with only basic insulation to ELV or hazardous voltage.	Pass
	Test with test finger.... .... :	No access with test finger to any parts with only basic insulation to ELV or hazardous voltage.	Pass

	Test with test pin..... .... :	The test pin cannot touch hazardous voltage through and openings or seams of the whole enclosure.	Pass
	Test with test probe ... . :	No TNV present.	N/A
2.1.12	Battery compartments .... :		N/A
2.1.13	Access to ELV wiring	Internal wiring in an ELV circuit is not user accessible.	N/A
	Working voltage (V); distance (mm) through insulation..... .... :	Internal wiring in an ELV circuit is not user accessible.	-
2.1.14	Access to hazardous voltage circuit wiring	Insulation of internal wiring is not operator accessible.	N/A
2.1.15	Energy hazards..... .... :	The output of the power supply is not an energy hazard.	N/A
2.1.16	Manual controls	No knobs, handles, levers, or the like are employed in power supplies.	N/A
2.1.17	Discharge of capacitors in the primary circuit	No risk of electric shock	Pass
	Time-constant (s); measured voltage (V). ..... :	Time constant less than 1 second.	-
2.1.2	Protection in service access areas	Bare parts operating at HAZARDOUS VOLTAGES shall be located or guarded in the end product	N/A
2.1.3	Protection in restricted access locations		N/A

2.2	**SELV Circuits**		Pass
2.2.1	General requirements	SELV levels are maintained after single fault condition.	Pass
2.2.2	Voltages under normal conditions (V) .... :	All accessible voltages are less than 42.4 Vp or 60 V dc and are classified as SELV.	Pass
2.2.3	Voltages under fault conditions (V) .... :	Under fault conditions voltages never exceed 71V peak and 120Vdc and do not exceed 42.4V peak or 60V dc for more than 0.2 sec.	Pass
2.2.3.1	Separation by double or reinforced insulation (method 1)	SELV wiring which may contact hazardous voltage parts provided with double or reinforced insulation. See Table 2.10.5.	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	See 2.2.2, 2.2.3 The SELV has not connect to Primary circuit directly.	Pass

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

2.4	**Limited Current Circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) .... :		
	Measured current (mA)		
	Measured voltage (V) ..... :		
	Measured capacitance (μF) ..... :		
2.4.3	Connection of limited current circuits to other circuits		N/A

2.5	**Limited Power Sources**		Pass
	Inherently limited output		N/A
	Impedance limited output		N/A
	Overcurrent protective device limited output		N/A
	Regulating network limited output under normal operating and single fault condition	The output is limited to the values of table 2B in normal operation conditions and in the case of a single fault	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)..... :	Normal: 24.2Uoc, 3.0 Isc, 72.6 VA; SCR short: 24.2Uoc, 2.8 Isc, 66.6 VA; DEI short: 24.2Uoc, 2.8 Isc, 67.4 VA; C12 short: 24.0Uoc, 2.9 0 Isc, 68.1 VA.	
	Current rating of overcurrent protective device (A) :		

2.6	**Provisions for Earthing and Bonding**		Pass
2.6.1	Protective earthing	Plastic enclosure. No conductive parts touchable by the operator.	Pass
2.6.2	Functional earthing	The functional earthing (SELV ground) have seperated from hazardous part by Double/Reinforce Insulation	Pass
2.6.3	Protective earthing and protective bonding conductors	See below	Pass
2.6.3.1	Size of protective earthing conductors	Power supply cord earthing conductor complies with Table 3E.	Pass
	Rated current (A), cross-sectional area (mm²), AWG..... :		
2.6.3.2	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm²), AWG..... :		
2.6.3.3	Rated current (A), type and nominal thread diameter (mm)..... :	Protective bonding concuctors meet the minimum conductor size in table 3B.	Pass
	Resistance (Ohm) of earthing conductors and their terminations, test current (A)..... :	Resistance <0.1 ohm (25 A)	Pass
2.6.3.4	Colour of insulation..... :	Green/yellow insulation for P.E.	Pass
2.6.4	Terminals	See 2.6.1	Pass
2.6.4.1	Protective earthing and bonding terminals	Appliance inlet used and the unit meet the test requirement of 2.6.3.3.	Pass
	Rated current (A), type and nominal thread diameter (mm)..... :		

2.6.4.2	Separation of the protective earthing conductor from protective bonding conductors	Appliance inlet used.	Pass
2.6.5	Integrity of protective earthing	See below	Pass
2.6.5.1	Interconnection of equipment	The equipment is not comprised of class I and class II assemblies.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductors.	Pass
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains; an appliance inlet is used as disconnect device.	Pass
2.6.5.4	Parts that can be removed by an operator	It is not possible to disconnect earth without disconnecting mains and protective earth makes earlier and breaks later than the supply connectors. No other operator removable parts with safety critical earth connection.	Pass
2.6.5.5	Parts removed during servicing	Connections to protective earthing cannot be removed unless hazardous voltage is removed from the part simultaneously.	Pass
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		Pass
2.6.5.8	Reliance on telecommunication network		N/A

2.7	**Overcurrent and Earth Fault Protection in Primary Circuits**		Pass
2.7.1	Basic requirements	Protective devices are integrated in the equipment.	Pass
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3	The protection devices are well dimensioned and mounted	Pass
2.7.3	Short-circuit backup protection	The equipment is pluggable Type A.	Pass
2.7.4	Number and location of protective devices ..... :	One protective device in the "LIVE" phase	Pass
2.7.5	Protection by several devices	Only one protective device is provided.	N/A
2.7.6	Warning to service personnel	No Service work necessary	N/A

2.8	**Safety Interlocks**		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Interlocks with moving parts		N/A
2.8.6	Overriding an interlock		N/A
2.8.7	Switches and relays in interlock systems		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 (V)		N/A
2.8.8	Mechanical actuators		N/A

2.9	**Electrical Insulation**		Pass
2.9.1	Properties of insulating materials	Electric strength test conducted after the humidity treatment.	Pass
2.9.2	Humidity conditioning	Humidity treatment performed to 48 hrs in condition: 91-95%, 25°C	Pass
2.9.3	Requirements for insulation	No flash over or breakdown of insulation. (see sub clause 2.10, 4.5.1, and 5.2)	Pass
2.9.4	Insulation parameters	Both parameters were considered.	Pass
2.9.5	Categories of insulation	The adequate level of safety insulation is provided and maintained to comply with the requirements of this standard	Pass

2.10	**Clearances, Creepage Distances and Distances Through Insulation**		Pass
2.10.1	General	See below.	Pass
2.10.2	Determination of working voltage	Max. Vpk of T1 = 359; Max. Vrms of T1 = 120.	Pass
2.10.3	Clearances	(see appended table)	Pass
2.10.3.1	General	When measuring clearances, the steady force, 10N±1N for components was applied.	Pass

2.10.3.2	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.3	Clearances in secondary circuits	Functional insulation only. Waived by short circuit fault test per Sub-clause 5.3.4 . See appended table 5.3.	Pass
2.10.3.4	Measurement of transient levels	Considered.	Pass
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	Pass
	CTI tests	Material group IIb, 100 <=CTI <175.	-
2.10.5	Solid insulation	See below.	Pass
2.10.5.1	Minimum distance through insulation	(see appended table)	Pass
2.10.5.2	Thin sheet material	Used for T1 outer wrapping.	Pass
	Number of layers (pcs): ..... :	2 layers	-
	Electric strength test	See appended table 5.2	-
2.10.5.3	Printed boards	PWB is not used as reinforced or supplementary insulation.	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	The secondary winding of T1 used the triple insulation magnet wire which manufactured by Furukawa, type TEX-E, class 120°C (see appended table and Annex U)	Pass
	Number of layers (pcs): ..... :	Three extruded layers.	Pass
	Two wires in contact inside component; angle between 45° and 90°	Prevented by insulating sleeving.	Pass
2.10.6	Coated printed boards	No coated printed wiring boards employed in the power supplies.	N/A
2.10.6.1	General		N/A
2.10.6.2	Sample preparation and preliminary inspection		N/A
2.10.6.3	Thermal cycling		N/A
2.10.6.4	Thermal ageing (°C) .. .. :		N/A
2.10.6.5	Electric strength test		-
2.10.6.6	Abrasion resistance test		N/A
	Electric strength test .. .. :		-

2.10.7	Enclosed and sealed parts..... .... :	No hermetically sealed or enclosed components used except for optocouplers (see appended table 1.5.1)	N/A
	Temperature T1=T2 + Tmra - Tamb +10K (°C) .... :		N/A
2.10.8	Spacings filled by insulating compound ... . :	Optocoupler is approved component. (see appended table 2.10.5)	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

3.1	**General**		Pass
3.1.1	Current rating and overcurrent protection	All internal wiring used in the distribution of primary power protected against overcurrent and short circuit by suitably rated protective devices	Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of concuctor insulation.	Pass
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1	Pass
3.1.5	Beads and ceramic insulators	The equipment does not have any beads or similar insulators.	N/A
3.1.6	Screws for electrical contact pressure	The equipment does not have any screw-type connections.	N/A
3.1.7	Non-metallic materials in electrical connections	No contact pressure through insulating material.	Pass
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N/A

3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	The sleeving used as supplementary insulation on internal wiring is retained by positive means.	Pass

3.2	**Connection to A.C. Mains Supplies**		Pass
3.2.1	Means of connection.. ..... :	The unit is provided with an appliance inlet.	Pass
3.2.2	Multiple supply connections	Single mains supply.	N/A
3.2.3	Permanently connected equipment	The equipment is not permanently connected.	N/A
	Number of conductors, diameter (mm) of cable and conduits ..... :		-
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320.	Pass
3.2.5	Power supply cords	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer, proper application is determined by the country's local Certification Body.	N/A
	Type..... :		-
	Rated current (A), cross sectional area (mm²),AWG ..... :		-
3.2.6	Cord anchorages and strain relief		Pass
	Mass of equipment (kg), pull (N) ..... :	0.29 kg, 30N	-
	Longitudinal displacement (mm) ..... :	< 1.0	-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	D (mm), test mass (g)		-
	Radius of curvature of cord (mm) ..... :		-
3.2.9	Supply wiring space		N/A

3.3	**Wiring Terminals for Connection of External Conductors**		N/A
3.3.1	Wiring terminals		N/A

3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Rated current (A), cord/cable type, cross sectional area (mm²) .... :		N/A
3.3.5	Rated current (A), type and nominal thread diameter (mm) .... :		N/A
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 A.C. Mains Supply**		Pass
3.4.1	General requirement	The appliance inlet is considered to be the disconnect device.	Pass
3.4.2	Disconnect devices	The equipment is provided with an appliance coupler.	Pass
3.4.3	Permanently connected equipment	Unit is not intended to be permanently connected.	N/A
3.4.4	Parts which remain energized	No parts remain energized when the disconnect device is removed.	N/A
3.4.5	Switches in flexible cords	No isolating switch in the cord set.	Pass
3.4.6	Single-phase equipment	Disconnect device disconnects all poles simultaneously	Pass
3.4.7	Three-phase equipment	The unit is single-phase equipment.	N/A
3.4.8	Switches as disconnect devices	No such switch provided.	N/A
3.4.9	Plugs as disconnect devices	The equipment does not use a plug on the power supply as the disconnected device.	N/A
3.4.10	Interconnected equipment	No interconnection of hazardous voltages or energy levels.	N/A
3.4.11	Multiple power sources	The equipment only receives power from one source.	N/A

3.5	**Interconnection of Equipment**		Pass
3.5.1	General requirements	This equipment is not considered for connection to TNV. Ref. to 2.2 for other details.	Pass

3.5.2	Types of interconnection circuits. .... :	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits	No ELV interconnections.	N/A

4	**PHYSICAL REQUIREMENTS**	Pass

4.1	**Stability**		N/A
	Angle of 10°		N/A
	Test: force (N)..... .... :		N/A

4.2	**Mechanical strength**		Pass
4.2.1	General	See below.	Pass
4.2.2	Steady force test, 10 N	10N were applied to components. No energy or other hazards.	Pass
4.2.3	Steady force test, 30 N	The equipment does not have any internal enclosures.	N/A
4.2.4	Steady force test, 250 N	250N were applied to the outer enclosure. No energy or other hazards.	Pass
4.2.5	Impact test	500g steel sphere ball fall or swing from 1.3m height onto outer plastic enclosure. The test was done with all enclosure materials. No safety relevant damages.	Pass
4.2.6	Drop test	Unit is not hand-held, direct plug-in, or transportable	N/A
4.2.7	Stress relief	After 7h at 70°C and cooling down to room temperature, no shrinkage, distortion or loosing of enclosure parts was noticeable on the equipment. The test was conducted with all enclosure materials.	Pass
4.2.8	Cathode ray tubes	The equipment does not have any CRT.	N/A
	Picture tube separately certified.. .... :		N/A
4.2.9	High pressure lamps	No lamps provided.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N)..... :	Not Wall mounted equipment.	N/A

4.3	**Design and Construction**		Pass
4.3.1	Edges and corners	All edges and corners judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N) ..... :	No knobs/grips/handles or levers provided in the power supplies.	N/A
4.3.3	Adjustable controls	The equipment is auto-ranging.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. For the protection, solder pins, cable ties and heatshrunk tubing are used.	Pass
4.3.5	Connection of plugs and sockets	The equipment does not have any interchangeable plugs/sockets.	Pass
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N/A
	Torque (Nm) ..... :		
4.3.7	Heating elements in earthed equipment	The equipment does not have any heating elements.	N/A
4.3.8	Batteries	The equipment does not have any batteries	N/A
4.3.9	Oil and grease	The insulation of the internal wiring is not exposed to oil, grease, etc.	N/A
4.3.10	Dust, powders, liquids and gases	The equipment does not produce dust or employ powders, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	The equipment does not contain liquids.	N/A
4.3.12	Flammable liquids ..... :	The equipment does not use any flammable liquids.	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation; type of radiation ..... :	The equipment does not generate ionizing radiation or contain flammable liquids or gases.	N/A
	Equipment using lasers		N/A

4.4	**Protection Against Hazardous Moving Parts**	N/A

4.4.1	General		N/A
4.4.2	Protection in operator access areas		N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas		N/A

4.5	**Thermal Requirements**		Pass
4.5.1	Temperature rises	(see appended table) The equipment and its component parts did not attain excessive temperatures during normal operation.	Pass
	Normal load condition per Annex L..... ..... :	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	Pass
4.5.2	Resistance to abnormal heat		N/A

4.6	**Openings in Enclosures**		N/A
4.6.1	Top and side openings	There are no opening in whole enclosure	N/A
	Dimensions (mm).....		-
4.6.2	Bottoms of fire enclosures	No openings.	N/A
	Construction of the bottom.....		-
4.6.3	Doors or covers in fire enclosures	The equipment does not have any doors or covers.	N/A
4.6.4	Openings in transportable equipment	Unit is not transportable	N/A
4.6.5	Adhesives for constructional purposes	Adhesives are not used for securement of internal barriers or screens.	N/A
	Conditioning temperature/time.... .... :		-

4.7	**Resistance to Fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	Pass

4.7.2	Conditions for a fire enclosure	With having the following components: AC-DC - components with windings - wiring - semiconductor devices, transistors, diodes, integrated circuits - resistors, capacitors, inductors. The fire enclosure is required.	Pass
4.7.2.1	Parts requiring a fire enclosure	A fire enclosure covers all parts	Pass
4.7.2.2	Parts not requiring a fire enclosure	See 4.7.2	N/A
4.7.3	Materials		Pass
4.7.3.1	General	See below.	Pass
4.7.3.2	Materials for fire enclosures	Equipment is moveable with mass less than 18 kg. Fire enclosure material is V-1 minimum.	Pass
4.7.3.3	Materials for components and other parts outside fire enclosures	Fire enclosure covers all parts.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better. Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed).	Pass
4.7.3.5	Materials for air filter assemblies	No air filter assemblies provided in the power supply.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components employed.	N/A

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**	Pass

5.1	**Touch current and protective conductor current**		Pass
5.1.1	General	See below.	Pass
5.1.2	Equipment under test (EUT)	Equipment designed for connection to only one power source.	Pass
5.1.3	Test circuit	Single phase equipment intended only for connection to star TN or TT system	Pass

5.7.4	Application of measuring instrument	Test made to 10 X 20 cm metal foil in contact with accessible non-conductive part.	Pass
5.7.5	Test procedure		Pass
5.7.6	Test measurements	See below.	Pass
	Test voltage (V) .... :	244V/60Hz	-
	Measured current (mA) .... :	Max. 0.6 mA	-
	Max. allowed current (mA) .... :	3.5 mA	-
5.7.7	Equipment with touch current exceeding 3.5 mA.. :	Touch current is < 3.5 mA.	N/A
5.7.8	Touch currents to and from telecommunication networks		N/A
5.7.8.1	Limitation of the touch current to a telecommunication network		N/A
	Test voltage (V)		-
	Measured current (mA) .... :		-
	Max. allowed current (mA) .... :		-
5.7.8.2	Summation of touch currents from telecommunication networks		N/A

5.2	**Electric Strength**		Pass
5.2.1	General	Based on the electric strength test the use of the insulating materials within the equipment is satisfactory.	Pass
5.2.2	Test procedure	No insulation breakdown detected during the test. (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 motors	N/A
5.3.3	Transformers	Transformers are constructed in accordance with the applicable Clause and Annex C.	Pass
5.3.4	Functional insulation .. .. :	Functional insulation complies with the requirements (a), (b), or (c).	Pass

5.3.5	Electromechanical components	No electromechanical components employed.	N/A
5.3.6	Simulation of faults	The power supply is protected by the following means. (a.) Overcurrent Fuse: F1; (b.) OCP: ZD1, Q1, IC1, R3. Output overload test: The most unfavourable load test. (see appended table)	Pass
5.3.7	Unattended equipment	The equipment does not have any thermostats, temperature limiters, or thermal cut-outs.	N/A
5.3.8	Compliance criteria for abnormal operating and fault conditions	No fire, emission of molten metal or deformation was noted during the tests.	Pass

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**	N/A

6.1	**Protection of telecommunication network service personnel, 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
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 Telecommunication Wiring System From Overheating**		N/A
	Max. output current (A) .... Current limiting method..... .... :		

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**	Pass

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, material ..... :		
	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		N/A
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) ..... :		

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.2.6	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, 8		N/A
	Sample 1 burning time (s) ..... :		
	Sample 2 burning time (s) ..... :		
	Sample 3 burning time (s) ..... :		

A.3	**High current arcing ignition test (see 4.7.3.2)**		N/A
A.3.1	Samples, material ..... :		
	Wall thickness (mm) ..... :		
A.3.5	Compliance criteria		N/A

	Sample 1 number of arcs to ignition (pcs) ..... :		-
	Sample 2 number of arcs to ignition (pcs) ..... :		-
	Sample 3 number of arcs to ignition (pcs). ..... :		-
	Sample 4 number of arcs to ignition (pcs). ..... :		-
	Sample 5 number of arcs to ignition (pcs) ..... :		-

A.4	**Hot wire ignition test (see 4.7.3.2)**		N/A
A.4.1	Samples, material .... :		-
	Wall thickness (mm) .. .. :		-
A.4.5	Compliance criteria		N/A
	Sample 1 ignition time (s)		-
	Sample 2 ignition time (s) .... :		-
	Sample 3 ignition time (s) .... :		-
	Sample 4 ignition time (s) .... :		-
	Sample 5 ignition time (s) .... :		-

A.5	**Hot flaming oil test (see 4.6.2)**	N/A

A.6	**Flammability tests for classifying materials V-0, V-1 or V-2**		N/A
A.6.1	Samples, material .... :		-
	Wall thickness (mm) .. .. :		-
A.6.5	Compliance criteria		N/A
A.6.6	Permitted retest		N/A

A.7	**Flammability test for classifying foamed materials HF-1, HF-2 or HFB**		N/A
A.7.1	Sample, material..... .... :		-
	Wall thickness (mm) .. .. :		-
A.7.4	Compliance criteria		N/A
A.7.5	Compliance criteria, HF-2		N/A
A.7.6	Compliance criteria, HF-1		N/A
A.7.7	Compliance criteria, HBF		N/A
A.7.8	Permitted retest, HF-1 or HF-2		N/A

A.7.9	Permitted retest, HBF		N/A

A.8	**Flammability test for classifying materials HB**		N/A
A.8.1	Samples, material		-
	Sample thickness (mm) ..... :		-
A.8.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.8.4	Test procedure		N/A
A.8.5	Compliance criteria		N/A
A.8.6	Permitted retest		N/A

A.9	**Flammability test for classifying materials 5V**		N/A
A.9.1	Samples, material ..... :		-
	Sample thickness (mm) ..... :		-
A.9.4	Test procedure, test bars		N/A
A.9.5	Test procedure, test plaques		N/A
A.9.6	Compliance criteria		N/A
A.9.7	Permitted retest		N/A

A.10	**Stress relief conditioning (see 4.2.7)**		Pass
	Temperature (°C) ..... :	70	-

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) .... :		
B.6	Running overload test for DC motors in secondary circuits		N/A
B.7	Locked-rotor overload test for DC 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 .... :	(see appended table 1.5.1)	
	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	See 5.3.3	Pass
C.2	Insulation	(see transformer construction in appened table 2.10.3 and Enclosure for details)	Pass
	Protection from displacement of windings ..... :	(see transformer construction in appened table 2.10.3 and Enclosure for details)	Pass

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
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
	Ionizing radiation		N/A
	Measured radiation (mR/h)		
	Measured high-voltage (kV) ..... :		
	Measured focus voltage (kV) ..... :		
	CRT markings..... :		

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.5.5.6)**		N/A
	Metal used..... :		

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

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (f) ..... :		
M.3.1.2	Voltage (V)..... .		
M.3.1.3	Cadence; time (s), voltage (V)..... :		
M.3.1.4	Single fault current (mA) ..... :		
M.3.2	Tripping device and monitoring voltage ... . :		N/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

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

1.5.1	TABLE: list of critical components				Pass
object/part No	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity 1
- Enclosure	GE Plastics	PX1005X (GG) (f1)	V-0, 95°C	UL 94	--, UL
- Appliance Inlet	Rong Feng Industria Co., Ltd	SS-120	10A, 250V	VDE 0625-1, **UL498**	--, VDE, S, UL
- Appliance Inlet	Shye Yng Industria Co., Ltd	AS-315, AS-316	10A, 250V	VDE 0625-1, UL498	--, VDE, S, UL
- Appliance Inlet	Supercom Wire & Cable Co., Ltd.	SC-9, SC-8, SC-9R, SC-8R	10A, 250V	VDE 0625-1, **UL498**	--, VDE, S, UL
- Appliance Inlet	Solteam Electronics Co., Ltd	ST-01	10A, 250V	VDE 0625-1, **UL498**	--, VDE, S, UL
- Appliance Inlet	Chily Precision Industria Co., Ltd	3522, 3516	10A, 250V	VDE 0625-1, **UL498**	--, VDE, S, UL
- Appliance Inlet	Rich Bay Co., Ltd	R-301, R-302	10A, 250V	VDE 0625-1, **UL498**	--, VDE, S, UL
- PCB	--	--	V-1 or better, 105°C min.	UL 94	--, UL
- Fuse (F1)	Littelfuse	229	T2A, 250Vac	UL 248-1, UL 248-14	--, UL, CSA
- X-Capacitor (C1) (Optional)	Aid	MEX	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Arcotronics	1.40, 1.47	max 0.47µF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	EVOX RIFA AB.	PHE 840 M	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Iskra	KND 1530	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
X Capacitor (C1) (Optional)	**Jorn Fu**	MPX	max 0.47µF, 275Vac	IEC 60384-14/ 1993	, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	LCC	DX	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Nitsuko	CFKC, CFJC	max 0.47µF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Okaya	**PA, RE series**	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Philips	MKP 338 2, PCX2 335	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Pilkor	PCX2 335, PCX2 335M	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Prestige	MPX	max 0.47µF 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Roedersstein	F1772--2	max 0.47µF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Shiny Space	SX1	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor	Siemens	B 81 130 Series	max 0.47µF,	IEC 60384-14/	--, VDE, S, FI,

(C1) (Optional)			275Vac	1993	UL, CSA
- X-Capacitor (C1) (Optional)	TDK	CS	max 0.47µF 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Teapo	XG-VS	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional)	Thomson	QX	max 0.47µF, 275Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- X-Capacitor (C1) (Optional) - X-Capacitor (C1) (Optional)	UTX Carli	HQX MPX	max 0.47µF, 275Vac max 0.47µF, 275Vac	IEC 60384-14/ 1993 IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA --, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Matsushita	RS, TS	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Welson	KL	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Vishay	WYO	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Mitsubishi	AM	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Murata	KH	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Success Electrics	SB	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	TDK	CS, CD	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Y-Capacitors (C2A) (Optional)	Samsung	AA	max 2200pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Capacitors (C3) (Optional)	Nelron Tech Co., Ltd	AD	max 4700pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Capacitors (C3) (Optional)	Matsushita	NS-A	max 4700pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Capacitors (C3) (Optional)	Murata	KX, KD	max 4700pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Capacitors (C3) (Optional)	TDK	CD	max 4700pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
- Capacitors (C3) (Optional)	Samsung	AD	max 4700pF, 250Vac	IEC 60384-14/ 1993	--, VDE, S, FI, UL, CSA
Bleeder Resistors (R2)		Carbon type	470kohm, 1/2W		,
- Ripple Capacitor (C7)	--	Electrolytic can type	100µF, 400Vac, min. 105°C	--	--, --
- Photo Coupler (IC1)	Sharp	PC 123	di = 0.7 mm	VDE 0884 IEC 60950	--, VDE, S, FI
- Photo Coupler (IC1)	Toshiba	TLP721.	di = 0.8 mm	VDE 0884 IEC 60950	--, VDE, S, FI
- Photo Coupler (IC1)	QT Optoelectronics	H11A817X	di > 1.1 mm	VDE 0884 IEC 60950	--, VDE, S, FI
- Photo Coupler (IC1)	QT Optoelectronics	4N35	di = 1.1 mm	VDE 0884 IEC 60950	--, VDE, S, FI
- Transformer (T1)	Skynet	360-PA59-M	Class A	IEC 60601-1	--, --
- Line Choke (L6)	Long Sail	310-2663	Class 105°C	--	--, --

- Line Choke (L6)	Skynet	310-2663	Class 105°C	--	--, --
- Line Filter (L1)	Long Sail	390-Y520	Class 105°C	--	--, --
- Line Filter (L1)	Skynet	390-Y520	Class 105°C	--	--, --
[1]) an asterisk indicates a mark which assures the agreed level of surveillance					

1.6.2	TABLE: electrical data (in normal conditions)						Pass
fuse #	I rated (A)	U (V)	P (W)	I (mA)	fuse (mA)	condition/status	
F1	1.5	104V/60Hz	70	1150	1150	Max. normal load	
F1	1.5	115V/60Hz	70	1070	1070	Ditto	
F1	1.5	122V/60Hz	70	1020	1020	Ditto	
F1	0.8	207V/60Hz	69	700	700	Ditto	
F1	0.8	230V/60Hz	68	640	640	Ditto	
F1	0.8	244V/60Hz	67	600	600	Ditto	
F1	0.8	244V/50Hz	70	640	640	Ditto	
F1	1.5	104V/50Hz	70	1130	1130	Ditto	
supplementary information:							
Maximum Normal Load was defined as follows Connected to rated load and operated continuously.							

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 components (with 10N) to secondary components (with 10N)	<420	<240	4	>4	5	>5
Pri. to Sec. Traces	<420	<240	4	See below	5	See below
under IC1	<420	<240	4	6.8	4.2	6.8
under TI	359	130	4.2	11.5	6.0	11.5
supplementary information:						
1. The CTI rating of PCB is material group IIIb (Cl. 2.10.4). 2. Separation Method between SELV and hazard circuit (Cl. 2.2.3) by double or reinforced insulation (Method 1). 3. Functional insulation shorted, see Cl. 5.3.4.						

2.10.5	TABLE: distance through insulation measurements			Pass
distance through insulation di at/of	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
Bobbin of T1	130	AC 3000	0.4	>**0.71**
IC1	240	DC 4242	0.4	>0.4
Enclosure	240	DC 4242	0.4	1.0
supplementary information:				
N/A				

4.5	TABLE: temperature rise measurements		Pass
	test voltage (V) ..... :	See below	—
	t1 (°C) ..... :	--	—
	t2 (°C) ..... :	--	—

temperature rise dT of part/at:	dT (K)	required dT (K)
--	244V, 60Hz, 8 hrs / 104V, 60Hz, 8 hrs	--
1. Transformer T1 coil	35.9/62.2	50
2. Transformer T1 Core	59.6/56.2	50
3. Capacitor C7	48.4/53.8	65
4. Transistor Q1	70.8/66.7	--
5. Resistor R1	50.1/77.2	--
6. Resistor R1	37.2/57.3	--
7. Inductor L1	39.5/56.3	65
8. Diode Bridge, DB1	48.5/52.4	--
9. Diode D3	46.1/45.3	--
10. Capacitor C11	34.6/34.1	45
11. Ambient	29.2°C/28.2°C	--

temperature rise dT of winding	R_1 (Ω)	R_2 (Ω)	dT (K)	required dT (K)	insulation class
--	--	--	--	--	--

supplementary information:

The temperatures were measured by thermal couple (type T) method under worst case normal mode as **described in 1.6.1 at voltage described in 1.6.5. The worst case normal mode is defined with max load.**
With max. ambient temperature specified as 40°C, the maximum temperature rise is calculated as follows:
Winding components:
Transformer class A dTmax = 75K - 10K - (40-25)K = 50 K
Components with:
- max. absolute temp. of 65°C (Inlet body) dTmax = (65-40)K = 25K
- max. absolute temp. of 105°C (Line choke) dTmax = (105-40)K = 65K
- max. absolute temp. of 85°C (Capacitor) dTmax = (85-40)K = 65K
- max. absolute temp. of 105°C (PWR) dTmax = (105-40)K = 65K
- max. absolute temp. of 105°C (Enclosure) dTmax = (105-40)K = 35K
- when no class of insulation is given, min. insulation 105°C assumed
User Accessible Area
- material is plastic (70K) dTmax = 70K-(40-25)K = 55K

4.5.2	**TABLE: ball pressure test of thermoplastics**		N/A
	allowed impression diameter (mm)..... :		--
part		test temperature (°C)	impression diameter (mm)

supplementary information:

5.2	**TABLE: electric strength tests and impulse tests**		Pass
test voltage applied between:		test voltage (V)	breakdown Yes / No
Primary to Secondary		4242Vdc	No

Primary to Earth	2121Vdc	No
Primary to Enclosure (cover foil)	4242Vdc	No
Two layers of insulation tape in T1	3000Vac	No
Primary winding to Secondary winding	3000Vac	No
Secondary windings to core	3000Vac	No
supplementary information:		
N/A		

5.3	**TABLE: fault condition tests**						**Pass**
	ambient temperature (°C) ..... :				25		—
	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	
D2	Short	230V	1 min	--	--	**Unit ran normally. No** hazard.	
Output 23.8V, 2.7A	Overloaded	244.4V	3 hrs	FS1	2.7	Temperature stabilized, T1 Coil = 105.8°C, Core = 97.3°C, Ambient = 26.3°C, No hazard.	
supplementary information:							
S: short circuit; O/L: overload.							

A.6.5	**TABLE: flammability test for classifying materials V-0, V-1 or V-2**	N/A
sample No. / ref.	after flame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
supplementary information:		

A.6.6	**TABLE: flammability re-test for classifying materials V-0, V-1 or V-2**	N/A
sample No.	after flame time (s) t_1 or t_2	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
supplementary information:		

A.7.4, A.7.5, A.7.6 and A.7.7	TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF			N/A
sample No. / ref.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
supplerrentary information:				

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

A.7.9	TABLE: flammability re-test for classifying foam materials HBF			N/A
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
supplerrentary information:				

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

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

A.9.6	**TABLE: flammability test for classifying materials 5V**				N/A
sample	test bars		test plaques		
No./ref.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
supplementary information:					

A.9.7	**TABLE: flammability re-test for classifying materials 5V**				N/A
sample	test bars		test plaques		
No.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)
supplementary information					

Enclosure

National Differences

(Total 17 Pages including this Cover Page)

UL International Demko A/S

Argentina

Australia / New Zealand

Austria**

Belgium**

Brazil*

Czech Republic*

Denmark

Finland

France**

Germany

Greece**

Group

Hungary*

India*

Ireland

Israel*

Italy**

Japan

Korea

Malaysia*

Netherlands**

Norway

Poland*

Portugal*

Russia*

Slovakia*

Slovenia*

South Africa*

Spain

Sweden

Switzerland

Turkey*

Ukraine*

* No National Differences Declared

** Only Group Differences

Argentina - Differences to IEC60950, Third Edition (1999)			
1.5.2	Certified plug according to IRAM 2063 (two prong) or IRAM 2073 (three prong) are used in accordance with their ratings		N/A
1.7.2	Operating/safety instructions made available to the user in Spanish. Product information appears on the product.	Safety instructions in English. Other languages will be provided when submitted for national approval	N/A
1.7.12	Language of safety markings/instructions is Spanish	Reviewed only English markings/instructions. May be provided in other languages upon request from the manufacturer.	N/A
General	Household power supply sources are 220 V a.c., 50 Hz	The unit is designed to used in TN power system and supplied by 100-240 Vac	Pass

Australia / New Zealand - Differences to IEC60950, Third Edition (1999)			
1.2.12.11	POTENTIAL IGNITION SOURCE Possible fault such as a faulty contact or interruption in an electrical connection, including a conductive pattern on printed boards, which can start a fire if, under normal operating conditions, the open circuit voltage exceeds 50 V (peak) ac or dc and the product of this open circuit voltage and the measured current through this possible fault exceeds 15 VA		N/A
1.5.1	Add to the first paragraph: "or the relevant Australian or New Zealand Standard".		Pass
1.5.2	Add to the first and third dashed items after the words "IEC Component Standard": "or the relevant Australian or New Zealand Standard".		Pass
1.6.1	Add: AC power distribution systems classified as TT or IT are not allowed	The unit is designed to used in TN power system.	Pass

1.7.12	Add to the first paragraph: In Australia and New Zealand all safety instructions shall be in English.	Safety instructions in English.	Pass
3.2.5	Substitute for Table 3B: Sizes of Conductors ---------- Rated Current of Equipment (A) — Nominal Size (kcmil) ---------- 0.2 <= 3 — 0.5* 3 <= 7.5 — 0.75 7.5 <= 10 — 1.00** 10 <= 13 — 1.5*** 13 <= 25 — 2.5 25 <= 32 — 4 32 <= 40 — 6 40 <= 63 — 10 63 <= 80 — 16 80 <= 100 — 25 100 <= 125 — 35 125 <= 160 — 50 160 <= 190 — 70 190 <= 230 — 95 230 <= 260 — 120 260 <= 300 — 150 300 <= 340 — 185 340 <= 400 — 240 400 <= 430 — 300 ---------- * This nominal cross sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord or cord guard, enters the appliance, and the entry to the plug, does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see Note 2 to Table 2.17 of AS/NZS 3191). ** Cross-section 0.75 mm² *** Cross-section 1.0 mm²		N/A
4.3.6	Replace the third paragraph: Equipment having pins for insertion into socket-outlets shall comply with 2.8.1, 2.8.4, 2.10, 2.12.6 and 2.14.6 of AS/NZS 3112 using the 10 A gauge in Appendix A of AS/NZS 3112.	No socket-outlet.	N/A

4.3.6	The equipment is inserted, as in normal use, into a socket-outlet capable of accepting a 10 A plug complying with Fig. 2.1 (a) of AS/NZS 3112. The socket-outlet has a horizontal pivot at a distance of 8 mm behind the engagement face of the socket, and in the plane of the lower intersection of the center-lines of the contact apertures. The additional torque to be applied to maintain the engagement face in the vertical plane shall not exceed 0.25 Nm		N/A
4.3.13	For the purpose of this standard compliance with AS/NZS 2211.1 is deemed to be compliance with IEC60825.1		N/A
4.7	Add after the clause: For alternative resistance to fire test methods, refer to AS/NZS, Annex YY.		N/A
6.2.2	Replace the first paragraph by In Australia (not in New Zealand), compliance with 6.2.2 is checked by the tests of both 6.2.2.1 and 6.2.2.2.	No TNV circuits	N/A
6.2.2.1	In Australia, the electrical separation is subjected to 10 impulses of alternating polarity, using the impulses test generator of Annex N for 10/700µs impulses. The interval between successive impulses is 60 s and the initial voltage, Uc is: - for 6.2.1a): 7.0 kV for hand-held telephones and for headsets; 2.5 kV for other equipment; -for 6.2.1b) and 6.2.1c). 1.5 kV. NOTES: 1. The 7 kV impulse is to simulate lightning surges on typical Australian rural and semi-rural network lines. 2. The value of 2.5 kV for case (a) has been chosen primarily to ensure adequacy of the insulation concerned, and it does not necessarily simulate likely overvoltages.		N/A

6.2.2.2	In Australia, the electrical separation is subjected to an electric strength test according to 5.2.2. The a.c. test voltage is: -for 6.2.1a): 3 kV -for 6.2.1b) and 6.2.1c): 1.5 kV NOTES: 1. Where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. 2. The 3 kV and 1.5 kV values have been determined considering the low frequency induced voltages from the power supply distribution system.		N/A

Denmark - Differences to IEC60950, Third Edition (1999)			
1.2.4.1	Certain types of Class I appliances (see sub-clause 3.2.1) may be provided with plug no. establishing earthing continuity when inserted into Danish socket-outlets.		N/A
1.7.2	Supply cords of Class I equipment, which is delivered without a plug, must be provided with a visible tag with the following text: "Vigtigt ! Leceren med grøn/gul isolation må kun tilsluttes en klemme mærket (IEC 417, No. 5019) eller (IEC 417, No. 5017)." 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 a	Socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment.	No socket-outlet used.	N/A
1.7.5 b	Class II equipment shall not be fitted with socket-outlets for providing power to other equipment.	Class I equipment.	N/A

1.7.15	Caution text concerning lithium batteries: ADVARSEL! Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage tilleverandøren. The size of the warning must be a minimum of 26 x 52 mm, the background shall be yellow colour with black frame, and the text in black colour. A white background is acceptable in the User's Instruction and in the Service Manual.		N/A
3.2.1	Supply cord of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. Class I equipment provided with socket-outlets with earth contact 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 poly-phase equipment and single-phase equipment having a rated current exceeding 10 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-1-D1 or EN 60309-2.	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A

Finland - Differences to IEC60950, Third Edition (1999)			
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE-EQUIPMENT TYPE B only.		N/A

Germany - Differences to IEC60950, Third Edition (1999)			
1.7.12	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.	Safety instructions in English. Other languages will be provided when submitted for national approval.	N/A
H.a	a) A license is required by those who operate an X-ray emission source		N/A

H.b	b) A license in accordance with Clause 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if 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		N/A
H.c	c) A license in accordance with Clause 1 is also not **required by persons** who operate a 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 not exceed the maximum value stipulated by the manufacturer **or importer**		N/A
H.d	d) Furthermore, a license in accordance with Clause 1 is also not required by persons who operate X-ray emission source on which the electron acceleration voltage does not exceed 30 kV if: 1) the X-rays are generated only intrinsically safety CRTs complying with Enclosure III, No. 6 2) the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measured 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

Group - Differences to IEC60950, Third Edition (1999)			
2.7.1	Replace the text of this Sub-Clause by: Basic requirements 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)		Pass
2.7.1 a	a) Except as detailed in b) and c), protective devices necessary to comply with the requirements of subclause 5.3 shall be included as parts of the equipment	The protective device is included as part of the equipment.	Pass
2.7.1 b	b) For components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f. filter and switch, short circuit and earth fault protection may be provided by protective devices in the building installation.		N/A
2.7.1 c	c) It is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instruction.		N/A
2.7.1 c	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
2.7.2	This subclause has been declared 'void'	Considered.	Pass
3.2.3	Delete NOTE 1, and in table 3A delete the conduit sizes in parentheses.		N/A
3.2.5	Replace as follows: "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-F"	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A

3.2.5	In table 3B, replace the first four lines by the following: Up to and including 6 0.75 1) Over 6 up to and including 10 0.75 2) 1.0 Over 10 up to and including 16 1.0 3) 0.5 In the Conditions applicable to table 3B delete the words "in some countries" in condition 1. In NOTE 1, delete the second sentence.	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A
3.3.4	In table 3D, delete the fourth line - conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to & including 16 1.5 to 2.5 1.5 to by 4. Delete the fifth line - conductor sizes for 13 to 16A.		N/A
4.3.13	Replace the second compliance paragraph by: For equipment using LEDs or lasers, compliance is checked according to EN 60825-1	No LEDs or lasers.	N/A
4.3.13	NOTE 1 - if equipment falling with in the scope of EN 60950 is inherently a class 1 laser product, i.e. it contains no embedded laser or LED of a higher class number, then a laser warning label or other laser warning statement is not required (see 1.1 of EN 60825-1). Renumber the NOTE below the third compliance paragraph as NOTE 2		N/A
H	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 1µSv/h (0.1 mR/h) (see note). Account is taken of the background level. Replace the NOTE as follows: NOTE - These values appear in directive 96/29/Euratom		N/A
P	Replace the text of this annex by. See annex ZA	Replaced.	Pass

Q	Add the following notes for the standards indicated: IEC 60127 series NOTE: Harmonized as EN 60127 series (not modified) IEC 60529 NOTE: Harmonized as EN 60529: 1991 (not modified) IEC 61032 NOTE: Harmonized as EN 61032: 1998 (not modified)		Pass

Ireland - Differences to IEC60950, Third Edition (1999)			
3.2.1	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.	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A
4.3.6	DIRECT PLUG-IN EQUIPMENT 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

Japan - Differences to IEC60950, Third Edition (1999)			
1.2.4.101	Addition: Definition of CLASS 0I EQUIPMENT	Class I equipment, not classified as CLASS 0I EQUIPMENT.	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"		N/A
1.2.12.101	Addition: Definition of VTM CLASS MATERIAL		N/A
1.7.101	Addition:Marking for CLASS 0I EQUIPMENT The following instruction is indicated on the visible place of the mains plug or the main body: "Provide an earthing connection"	Class I equipment, not classified as CLASS 0I EQUIPMENT.	N/A

1.7.101	The following instruction is indicated on the visible place on 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."		N/A
2.1.1.1	Replace: "IEC 60083" by "IEC 60083 or JIS C 8303" in 2.1.1.1 b)		N/A
2.6.3.1	Add the following after 1st paragraph: "This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT"		N/A
2.6.4.1 2.6.5.4	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" Replace 1st sentence: "Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:"		N/A N/A
2.6.101	Addition:Earthing of CLASS 0I EQUIPMENT Plugs with a lead wire for earthing not used for equipment having a rated voltage exceeding 150 V	Class I equipment, not classified as CLASS 0I EQUIPMENT.	N/A
2.6.101	For plugs with a lead wire for earthing, the lead wire is not earthed by a clip		N/A
2.6.101	CLASS 0I EQUIPMENT provided with an earthing terminal or lead wire for earthing in the external where easily visible		N/A
3.2.5	Delete the following statement from a note 1 in Table 3R: "For RATED CURRENT up to 3A, a nominal cross-sectional area of 0.5 mm2 is permitted in some countries provided that the length of the cord does not exceed 2 m"		N/A
4.2.8	Add the following informative remark after the last sentence: "IEC 61965 is also applicable instead of IEC 60065"		N/A
4.5.1	Add the following to note b) of Table 4A, Part 2: "With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for IEC 60335-1 3rd Edition in CB Bulletin 101B) are also acceptable"		N/A

4.5.1	Add a note reference 7) to "50", in the right column of Table 4A, Part 1 and add a note 7 to Table 4A, Part 2 as follows "7) This value apply only to wiring or cords complying with relevant IEC standards Others comply with Japanese requirements (refer to Japanese differences for IEC 60335-1 3rd Edition in CB Bulletin 101B)"		N/A
4.7.3.2	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"**		N/A
5.1.6	Replace Table 5A to include maximum TOUCH CURRENT values for CLASS 0I EQUIPMENT	Class I equipment, not classified as CLASS 0I EQUIPMENT.	N/A
5.3.8.2	Replace 3rd item as follows: "- BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;"		N/A
Annex A	Add the subclause A.101titled: "Flammability tests for classifying materials VTM" and the following: "Thin sheet materials shall comply with ISO 9773"		N/A
Annex G	Add 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"		N/A
Annex P	Add. "IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes"		N/A
Annex U	Replace 2nd paragraph as follows: "This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm"		N/A
U.2.1	Replacement:Electric strength "The test sample is prepared per IEC 60851-5:1997, 4.4.1 (for a twisted pair and subjected to the test of 5.2.2, 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"		N/A
U.2.2	Replacement:Flexibility and adherence Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameter of Table U.1 (mm)		N/A

U.2.2	Test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard and not less than: - 1500 V for BASIC INSULATION or SUPPLEMENTARY INSULATION, or; - 3000 V for REINFORCED INSULATION		N/A

Korea - Differences to IEC60950, Third Edition (1999)			
1.5.101	Addition: Plugs for the connection of the apparatus to the supply mains comply with the Korean requirement (KSC 8305)		N/A
7	Addition: EMC The apparatus shall complies with the relevant CISPR requirements		N/A

Norway - Differences to IEC60950, Third Edition (1999)			
1.5.8	Due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V).	Unit not evaluated for use in IT system.	N/A
1.7.2	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a communication network where safety relies on connection to protective earth, require a marking stating that the equipment must be connected to an earthed mains socket-outlet.		N/A
2.2.4	Requirements according to sub-clauses 1.7.2 and 6.1.2.1 apply for this clause.		N/A
2.3.2	Requirements according to sub-clause 6.1.2.1 apply for this clause.		N/A
2.3.3	Requirements according to sub-clause 6.1.2.1 apply for this clause.		N/A
2.3.4	Requirements according to sub-clauses 1.7.2 and 6.1.2.1 apply for this clause.		N/A
2.10.3.1	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.	Unit not evaluated for use in IT system.	N/A

6.1.2.1	**Note 2.** 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.	No TNV circuit.	N/A
6.1.2.1	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 ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5 kV.		N/A
6.1.2.1	It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.		N/A
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE-EQUIPMENT TYPE B only.		N/A
G.2	Due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault		N/A

Spain - Differences to IEC60950, Third Edition (1999)	

3.2.1	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 - 10 A shall be provided with a plug according to UNE 20315:1994 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 UNE 20315:1994 If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the UNE-EN 60309-2.	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A

Sweden - Differences to IEC60950, Third Edition (1999)			
1.5.1	Add the following: NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.		N/A
1.7.2	If the separation between the mains and a SELV terminal relies upon connection to safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet. The marking text shall be in Swedish and as follows: "Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk".	The separation between the mains and a SELV terminal does not relies upon connection to safety earth	N/A
6.1.2.1	**Note 1.** 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.	No TNV circuit.	N/A

6.1.2.1	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 ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1.5 kV.		N/A
6.1.2.1	It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.		N/A
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE-EQUIPMENT TYPE B only.		N/A

	Switzerland - Differences to IEC60950, Third Edition (1999)		
1.5.1	Add the following: NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed.		N/A
1.7.15	Annex 4.10 of SR 814.013 (Ordinance on environmentally hazardous substances) applies for batteries.		N/A
3.2.1	Supply cords of equipment having a rated current not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 884-1 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 EN 60309 applies for plugs for currents exceeding 10 A.	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	N/A

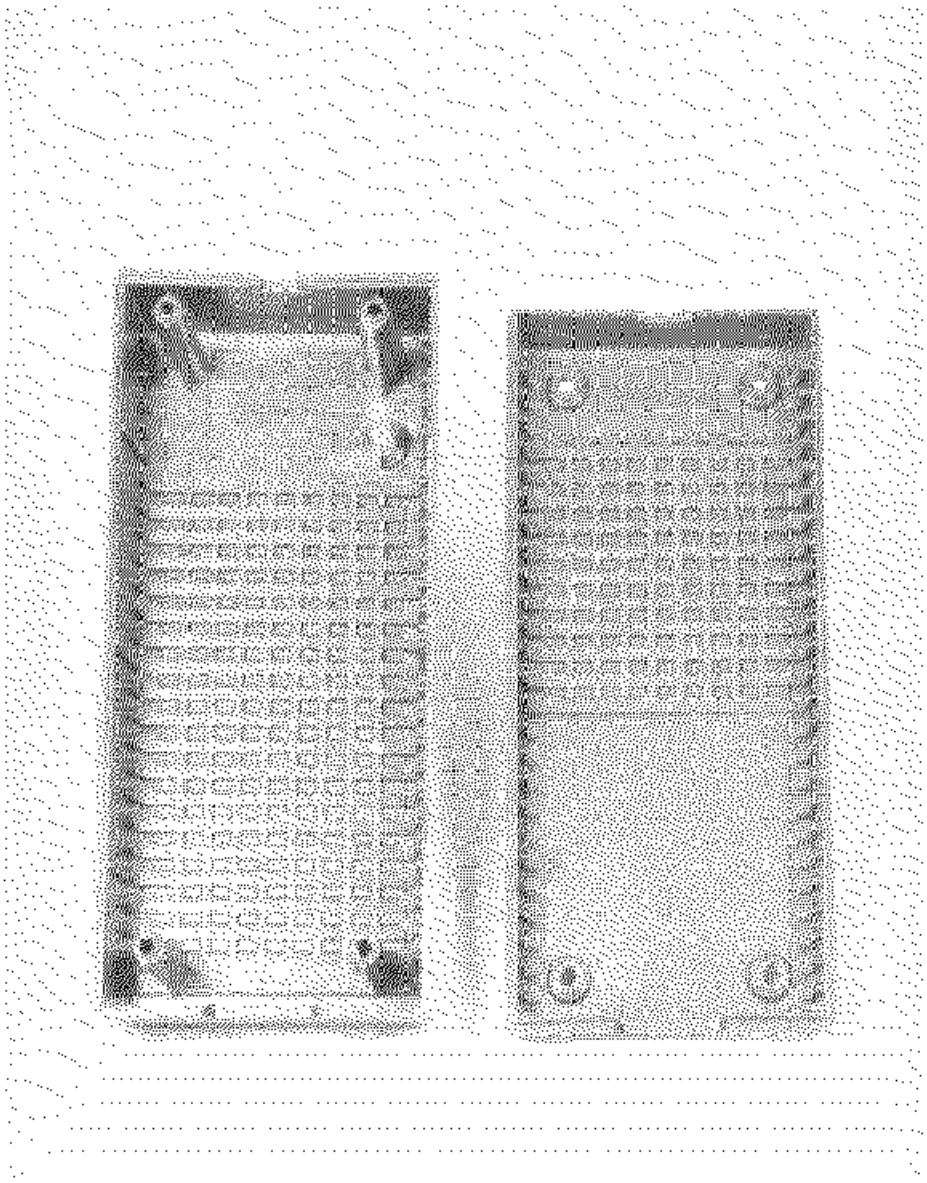
6.1	Protective means in the equipment shall not prevent transient surge protection in the telecommunication network from operating properly (d.c. spark-over voltage of the surge suppressor installed in the telecommunication network: approx. 245 V).	No TNV circuit.	N/A

	United Kingdom - Differences to IEC60950, Third Edition (1999)		
3.2.1	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 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.5	A power supply cord with conductor of 1.25 mm² is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10A up to and including 13A is: 1.25 mm² to 1.5 mm² nominal cross-sectional area.	The rated current is less than 10A.	N/A
4.3.6	This test should be performed using an appropriate socket outlet with an earthing contact.	No socket outlet used.	N/A

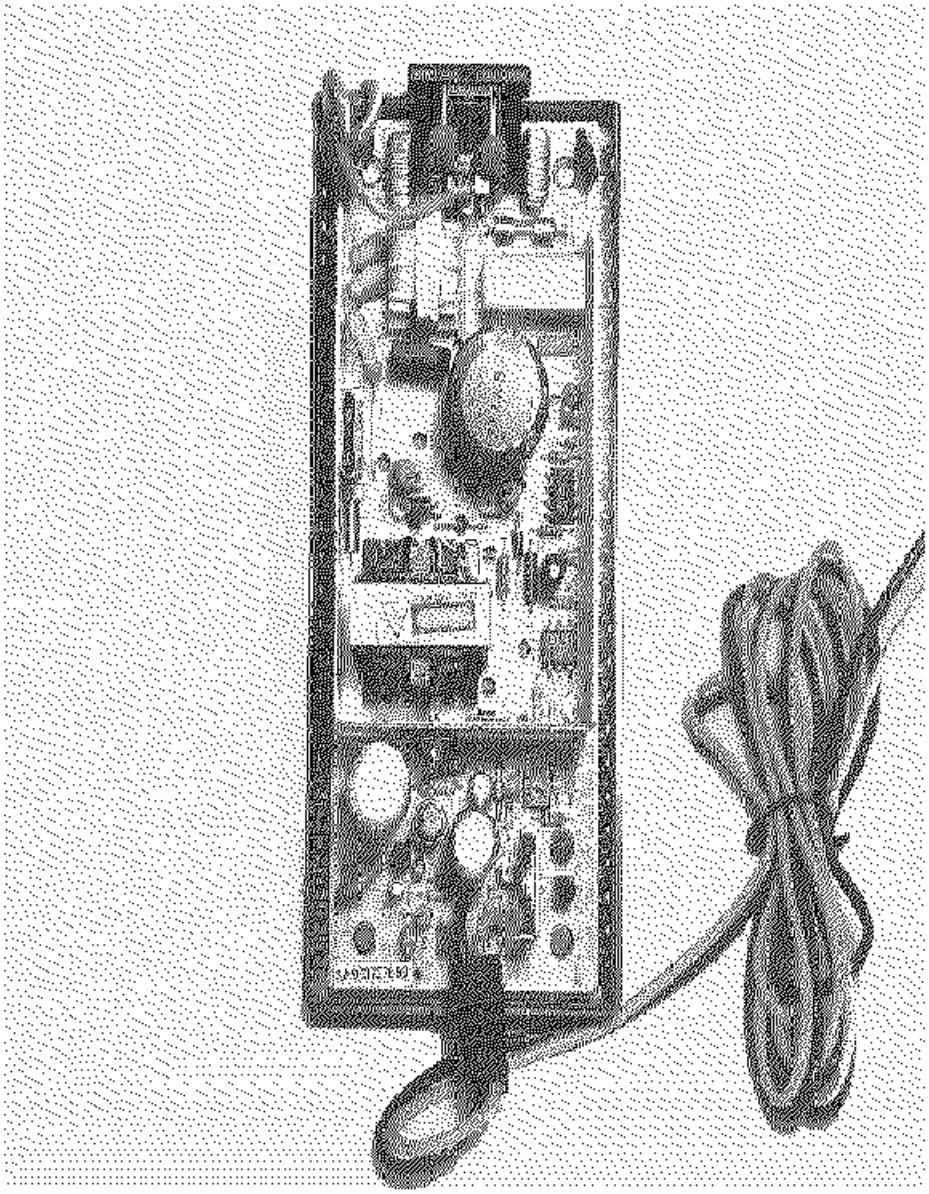
Enclosure
Photographs

(Total 3 Pages including this Cover Page)

Supplement Id	Description
3-C1	Enclosure View of Model SNP-PA59
3-C2	Interior View of Model SNP-PA59



UL International Demko A/S



UL International Demko A/S

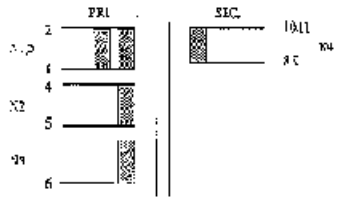
Enclosure
Diagrams

(Total 3 Pages including this Cover Page)

Supplement Id	Description
4-C1	T1 Construction
4-C2	T1 Materials

360 UA50 (T1) winding information

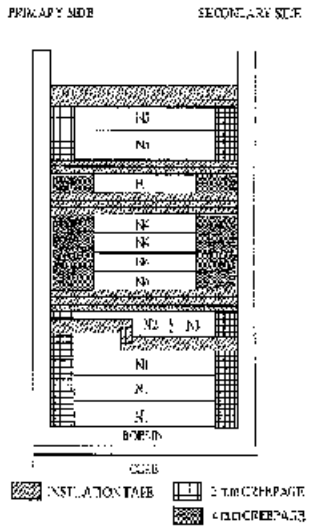
I



II

WINDING	TERMINAL	WINDING SIZE (mm)	TURNS	RESISTANCE (ohm)
N1	1 — 2	0.55 X 1	50	0.192
N2	4 — 5	0.62 X 1	[illegible]	0.045
N3	5 — 6	0.55 X 1	[illegible]	0.272
N4	8,9 — 10,11	0.55 X 3	[illegible]	0.070
C	5	CONNECTION		
N5	— 2	0.6 X 1	60	

III



UL International Demko A/S

COMPONENT OF MATERIALS

Designation : LS-1303(360-PA59)
Schematic symbol : T1

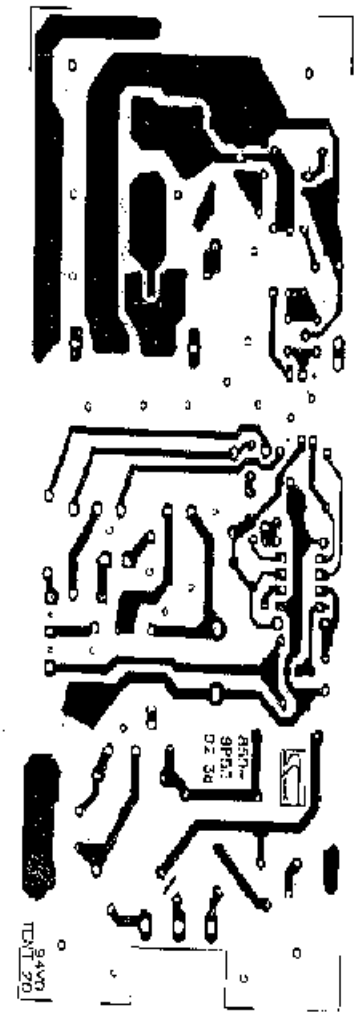
FUNCTION	MATERIAL GENERIC NAME	TRADE NAME	MANUFACTURER OF MATERIAL	UL FLAME CLASS	UL FILE NO
Bobbin	RYNITE	FR500	E I DUPONT DE NEMOURS & CO.	94V-0	E59575
Insulation tape	Polyester film	10 or 1318	MINNESOTA MINING & MFG CO		E17385
Spacer	Polyester film	44	MINNESOTA MINING & MFG CO		E17385
Sleeving	Various Silicone Rubber	115CXL	BENTLEY-HARRIS MFG. CO.	VW-1	E63446
Varnish		BC346A	JOHN C. DOLPH CO.		E51047
Magnet wire	Cu or Al	ANAI MW75	Various		
	Core Dimentions (Overall three Dimentions)				
	approx.	W 35mm	H 35 mm	D 11 mm	

Enclosure

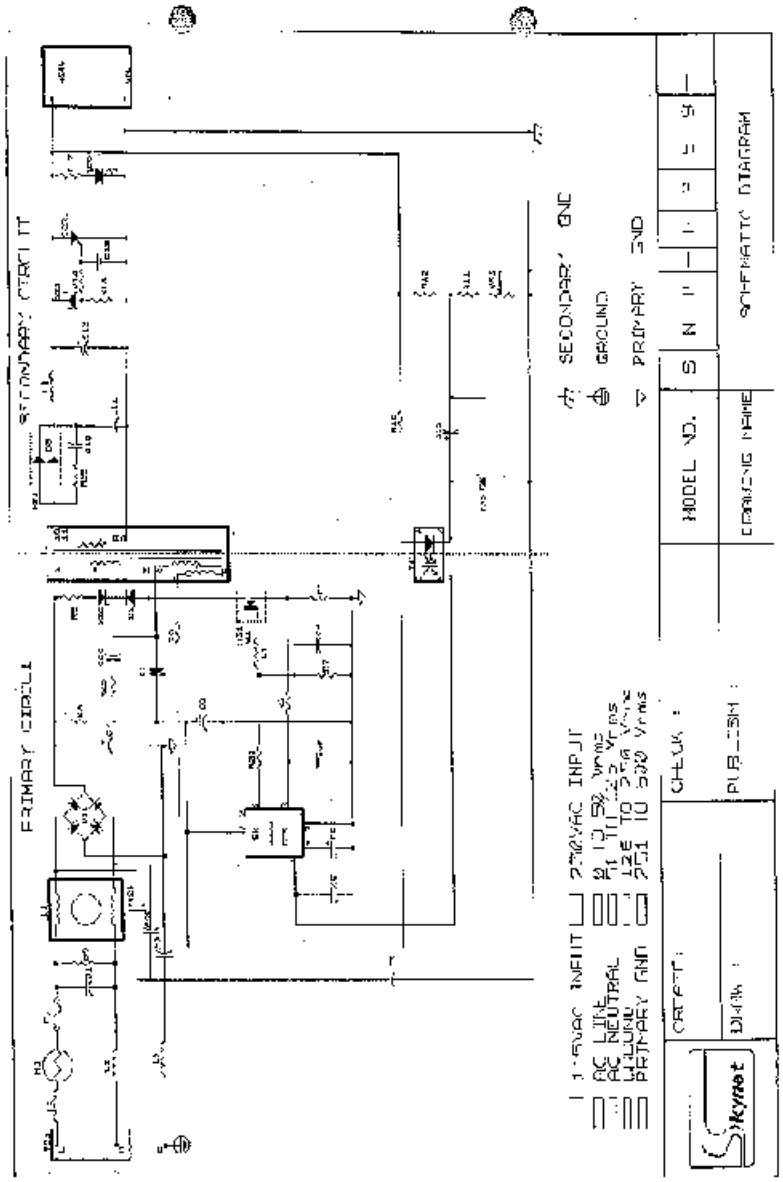
Schematics + PWB

(Total 3 Pages including this Cover Page)

Supplement Id	Description
5-C1	PWB Layout of Model SNP-PA59
5-C2	Schematic of Model SNP-PA59



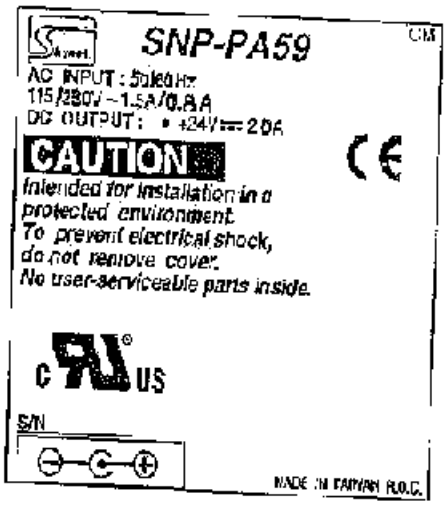
UL International Demko A/S


PRIMARY CIRCUIT
SECONDARY CIRCUIT
SECONDARY GND
GROUND
PRIMARY GND
MODEL NO.
SCHEMATIC DIAGRAM
AC LINE
AC NEUTRAL
CHASSIS
PRIMARY GND
CHECK
Kyrnet

Enclosure
Miscellaneous

(Total 2 Pages including this Cover Page)

Supplement Id	Description
7-C1	Label of Model SNP-PA59


SNP-PA59
AC INPUT : 50/60Hz
115/230V ~ 1.5A/0.8A
DC OUTPUT : + +24V⎓ 2.0A
CAUTION
Intended for installation in a protected environment.
To prevent electrical shock, do not remove cover.
No user-serviceable parts inside.
c UL us
S/N
MADE IN TAIWAN R.O.C.