



Test Report issued under the responsibility of:

NCB TÜV SÜD PSB Pte Ltd
1 Science Park Drive,
Singapore 118221



PSB Singapore

TEST REPORT

IEC 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number 081-130337-000

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CB Testing Laboratory TÜV SÜD Asia Ltd. Taiwan Branch

Address 7F., No. 37, Sec. 2, Zhongyang S. Rd., Beitou District,
Taipei City, 11270, TAIWAN

Applicant's name NEC Display Solutions, Ltd

Address 4-28, Mita 1-chome, Minato-ku, Tokyo, JAPAN

Manufacturer's name NEC Display Solutions, Ltd.

Address 4-28, Mita 1-chome, Minato-ku, Tokyo, JAPAN

Test specification:

Standard IEC 60950-1:2005 (Second Edition) + Am 1: 2009

Test procedure CB Scheme

Non-standard test method N/A

Test Report Form No IEC60950_1C

Test Report Form(s) Originator SGS Fimko Ltd

Master TRF Dated 2012-08

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Test item description LCD Monitor

Trade Mark NEC

Manufacturer Same as applicant.

Model/Type reference PA242W, PA242W-BK, PA242W(C), PA242W-BK(C), L242Q5

Ratings 100-240 Vac, 50/60 Hz, 0.84-0.38 A

Testing procedure and testing location:		
☒	CB Testing Laboratory:	TÜV SÜD Asia Ltd. Taiwan Branch
Testing location/ address		7F., No.37, Sec. 2, Zhongyang S. Rd., Beitou District, Taipei City, 11270, TAIWAN
☐	Associated CB Laboratory:	N/A
Testing location/ address		N/A
Tested by (name + signature)		Mr. Andy Liu 
Approved by (name + signature)		Mr. Sam Chen 
☐	Testing procedure: TMP	N/A
Testing location/ address		N/A
Tested by (name + signature)		
Approved by (name + signature)		
☐	Testing procedure: WMT	N/A
Testing location/ address		N/A
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
☐	Testing procedure: SMT	N/A
Testing location/ address		N/A
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature) ...		
☐	Testing procedure: RMT	N/A
Testing location/ address		N/A
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature) ...		

List of Attachments (including a total number of pages in each attachment):

Attachment No. 1	Group and National Differences	No.1	61	pages
Attachment No. 2	Group and National Differences	No.2	49	pages
Attachment No. 3	Group and National Differences	No.3	2	pages
Attachment No. 4	Marking Plate		1	page
Attachment No. 5	Photo		12	pages

Summary of testing:
Tests performed (name of test and test clause):

All test results were found satisfactory in accordance with IEC 60950-1:2005 (2nd Edition) + A1:2009 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on page 2.

Summary of compliance with National Differences

List of countries addressed:

For IEC 60950-1:2005 (2nd Edition) and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011

According to CB Bulletin, the National Differences include Australia (AU), Canada (CA), China (CN), Germany (DE), Israel (IL), Korea (KR), Switzerland (CH) and United States of America (US). Group Differences (CENELEC COMMON MODIFICATIONS) as listed in the European Standard are recorded in this Report.

(Attachment No. 1)

For IEC 60950-1:2001 (1st Edition) and EN 60950-1:2001+A11:2004

According to CB Bulletin, the National Differences include Australia (AU), Canada (CA), Japan (JP), Korea (KR), Sweden (SE), Switzerland (CH) and United States of America (US). Group Differences (CENELEC COMMON MODIFICATIONS) as listed in the European Standard are recorded in this Report.

(Attachment No. 2)

☒ The product fulfils the requirements of IEC 60950-1:2005 + A1:2009/ EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011.



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Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)

**See attachment No. 4
(Total 1 page)**

Test item particulars:	
Equipment mobility.....:	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains	☒ pluggable equipment ☒ type A ☐ type B ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition.....:	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values	+10%, -10%
Tested for IT power systems	☒ Yes ☐ No
IT testing, phase-phase voltage (V)	230 V (For Norway)
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A)	16 A or 20 A (For US)
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	Ordinary
Altitude during operation (m)	Up to 3048
Altitude of test laboratory (m)	below 2000
Mass of equipment (kg)	Approx. 7.30 / 10.70 (without / with stand) Approx. 0.80 (Hood)
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)	
Testing:	
Date of receipt of test item	2013-03-05
Date(s) of performance of tests	2013-03-06 to 2013-03-20

General remarks:

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 ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 6.2.5 of IEC60950-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....: ☐ Yes ☒ Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) :

Compal Electronics (China) Co., Ltd. (ID No.: 82603)
No. 988, TongFeng East Road, Kunshan Development Zone, KunShan
215335, JiangSu, PEOPLE'S REPUBLIC OF CHINA

General product information:

The equipment is a 24" LCD Monitor of information technology equipment.

All models are identical except for model designation.

The backlight fulfils the requirements of limited current circuit (Clause 2.4).

The outputs of data ports are in accordance with the Limited Power Source (Clause 2.5). See appended table 2.5 for details.

The manufacturer specified that the equipment could be operated up to an altitude of 3048 m (10000 feet). The requirements according to IEC 60664-1:2007 for clearances are considered as the altitude correction factors (1.15) specified in Table A.2.

Special national condition (J3000 (H21)) is evaluated by client's request, see attachment No.3.

The maximum ambient temperature specified by manufacturer is 40 °C.

If not specified, all tests were performed on model PA242W to represent the other models.

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1	GENERAL		P
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1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards. (see appended table 1.5.1).	P
1.5.2	Evaluation and testing of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal control.	N/A
1.5.4	Transformers	Transformer used is suitable for the intended application and complies with the relevant requirements of the standard and particularly with those of Annex C.	P
1.5.5	Interconnecting cables	Interconnection o/p cable to other device is carrying only SELV voltages on an energy level below 240 VA. →Except for the insulation material, there is no further requirement to the o/p interconnection cable.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.6	Capacitors bridging insulation	X2 capacitor according to IEC 60384-14 with 2.5 kVpk pulse test. Y2 capacitor according to IEC 60384-14 with 5.0 kVpk pulse test. Y1 capacitor according to IEC 60384-14 with 8.0 kVpk pulse test. Y1 type capacitor (C44) is provided and bridged between primary and secondary of SPS board.	P
1.5.7	Resistors bridging insulation	No bridging resistors provided.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Y-Cap. are all rated min. 230 V and complied with IEC 60384-14, and others component in such condition has suitable voltage rating. See table 1.5.1 for details.	P
1.5.9	Surge suppressors	See below.	P
1.5.9.1	General	Certified Varistor (VS1) is used between L and N of SPS, see appended table 1.5.1 for details.	P
1.5.9.2	Protection of VDRs	The current fuses (F1) provided protection.	P
1.5.9.3	Bridging of functional insulation by a VDR	Refer to 1.5.9.1.	P
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6	Power interface		P
1.6.1	AC power distribution systems	TN / IT power system. (see 1.5.8 and 1.7.2.4 for IT power system)	P
1.6.2	Input current	The definition for highest load according to 1.2.2.1, for this equipment is the unit operated under full brightness and contrast of the LCD backlight circuit. Results see appended table.	P
1.6.3	Voltage limit of hand-held equipment	This equipment is not hand-held equipment.	N/A
1.6.4	Neutral conductor	Basic insulation for rated voltage between earthed parts and primary phases.	P

1.7	Marking and instructions		P
1.7.1	Power rating and identification markings	See clause 1.7.1.1 and 1.7.1.2.	P
1.7.1.1	Power rating marking	See below.	P
	Multiple mains supply connections.....:	Only one supply from the AC mains.	N/A
	Rated voltage(s) or voltage range(s) (V)	100-240 Vac	P
	Symbol for nature of supply, for d.c. only	Mains from AC source.	N/A
	Rated frequency or rated frequency range (Hz):	50/60 Hz	P
	Rated current (mA or A)	0.84-0.38A	P
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark	NEC	P
	Model identification or type reference	PA242W, PA242W-BK, PA242W(C), PA242W-BK(C), L242Q5	P
	Symbol for Class II equipment only	Class I equipment.	N/A
	Other markings and symbols	Additional symbols or markings that do not give rise to misunderstanding.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2	Safety instructions and marking	Safety instructions in English and German. Other languages will be provided when submitted for national approval.	P
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices	Appliance Inlet is provided as disconnection device.	P
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems	Installation instruction will be stated when equipment is intended to be used for IT power system.	P
1.7.2.5	Operator access with a tool	No operator accessible area which needs to be accessed by use of a tool.	N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment	No supply voltage adjustment device.	N/A
	Methods and means of adjustment; reference to installation instructions		
1.7.5	Power outlets on the equipment	No power outlet provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Marking adjacent to fuse reads as F1 T4AH, 250 Vac of SPS board.	P
1.7.7	Wiring terminals	See below.	N/A
1.7.7.1	Protective earthing and bonding terminals	Appliance inlet is provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment with Appliance Inlet is intended to be use the detachable type power supply cord.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	Mains from AC source only.	N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The marking of stand-by switch is located on switch so that indication of function is clear.	P
1.7.8.2	Colours	No safety involved colour identification	P
1.7.8.3	Symbols according to IEC 60417	The stand-by switch marked with the correct symbol (60417-1-IEC-5009 (⏏)).	P
1.7.8.4	Markings using figures	No indicators for different positions.	N/A
1.7.9	Isolation of multiple power sources	Only one supply from mains.	N/A
1.7.10	Thermostats and other regulating devices	No thermostats used.	N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth for 15 sec. and then again for 15 sec. with the cloth soaked with Petroleum Ether. After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting of the label edge.	P
1.7.12	Removable parts	Marking is not placed on removable parts.	P
1.7.13	Replaceable batteries	No batteries provided.	N/A
	Language(s)		
1.7.14	Equipment for restricted access locations.....	No restricted access location.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	See below clause for details.	P
2.1.1.1	Access to energized parts	See below.	P
	Test by inspection	Operator cannot contact with any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test finger (Figure 2A)	No access with test finger to any parts with only basic insulation to ELV or hazardous voltage.	P
	Test with test pin (Figure 2B)	The test pin cannot touch hazardous voltage through any openings or seams of the whole enclosure.	P
	Test with test probe (Figure 2C)	No TNV circuit.	N/A
2.1.1.2	Battery compartments	No battery compartments provided.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards	No energy hazard in operator access area. The connectors of the equipment below 240 VA.	P
2.1.1.6	Manual controls	None at ELV or hazardous voltage.	N/A
2.1.1.7	Discharge of capacitors in equipment	No risk of electric shock, see appended table.	P
	Measured voltage (V); time-constant (s)	<1s; (see appended table 2.1.1.7).	—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply ...		N/A
	b) Internal battery connected to the d.c. mains supply		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.9	Audio amplifiers		N/A
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	The equipment is not intended to be used in restricted locations.	N/A

2.2	SELV circuits		P
2.2.1	General requirements	42.4 V peak or 60 Vdc are not exceeded in SELV circuit under normal operation or single fault condition.	P
2.2.2	Voltages under normal conditions (V)	Between any SELV circuits 42.4 V peak or 60 Vdc are not exceeded.	P
2.2.3	Voltages under fault conditions (V)	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71 V peak and 120 Vdc were not exceed and SELV limits not for longer than 0.2 seconds. (see appended table 2.2.2 and 5.3)	P
2.2.4	Connection of SELV circuits to other circuits	See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits.	N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
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		P
2.4.1	General requirements	The limits specified in 2.4.2 are not exceeded under normal operating conditions for SPS board. The LCD panel is LED backlight panel.	P
2.4.2	Limit values	See below.	P
	Frequency (Hz)	(See appended table)	—
	Measured current (mA)	The peak drop voltage was measured with an oscilloscope at a 2 k Ω non-inductive resistor. Results see appended table 2.4.2	—
	Measured voltage (V)	<450 V	—
	Measured circuit capacitance (nF or μ F)	$\leq 0.1 \mu$ F	—
2.4.3	Connection of limited current circuits to other circuits	Output circuit as limited current circuit considered to the circuits.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.5	Limited power sources		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	The USB ports, output of data ports and outputs (+5Vdc, +12Vdc) of power supply board are in compliance with table 2B in normal operating and single fault condition. (Results see appended table).	P
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)	See appended table.	—
	Current rating of overcurrent protective device (A) ..	No such device.	—
	Use of integrated circuit (IC) current limiters	No such device.	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing	Appliance inlet (with PE pin) reliable secured to metal chassis by screw. One protective bonding conductor (green/yellow wire) connected reliably from the approved appliance inlet hook-in to the metal chassis via terminal ring, screw and spring washer.	P
2.6.2	Functional earthing	Secondary functional earthing is separated to primary by double or reinforce insulation or by basic insulation and protective earthing. No green/yellow wire used at secondary.	P
2.6.3	Protective earthing and protective bonding conductors	See below.	P
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors	Appliance Inlet is used. Power supply cord is not provided.	P
	Rated current (A), cross-sectional area (mm ²), AWG.....:		—
2.6.3.3	Size of protective bonding conductors	Protective bonding conductor is complied with the requirements of 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm ²), AWG.....:		—
	Protective current rating (A), cross-sectional area (mm ²), AWG.....:		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	< 0.1 Ω (see appended table).	P
2.6.3.5	Colour of insulation.....:	Green/ Yellow wire from AC Inlet to PE trace and metal chassis provided.	P
2.6.4	Terminals	The equipment with detachable power supply core, connected on Appliance Inlet.	P
2.6.4.1	General	See below.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.4.2	Protective earthing and bonding terminals	The equipment with detachable power supply cord, connected on Appliance Inlet.	N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Protective earthing conductor is in Appliance Inlet; the earth pin of Inlet is connected to PCB earthing trace directly with soldered then connected to metal chassis with connection by screwed grounding pad on PCB.	P
2.6.5	Integrity of protective earthing	See below.	P
2.6.5.1	Interconnection of equipment	This equipment has its own earthing connection. Any other units connected via the interconnecting cable to other unit shall provide SELV only.	P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductor.	P
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.	P
2.6.5.4	Parts that can be removed by an operator	Plug or inlet, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.	P
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect earthing except for the removing of the earthed parts itself.	P
2.6.5.6	Corrosion resistance	All safety earthing connections in compliance with Annex J.	P
2.6.5.7	Screws for protective bonding	No self tapping screws are used.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Not intend to connect with telecommunication network or a cable distribution system for the integrity of protective earthing.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Equipment relies on 16 A or 20 A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Overcurrent protection is provided by the built-in device fuses.	P
	Instructions when protection relies on building installation	English.	—
2.7.2	Faults not simulated in 5.3.7	The protection devices are well dimensioned and mounted.	P
2.7.3	Short-circuit backup protection	Pluggable equipment type A, the building installation is considered as providing short circuit protection.	P
2.7.4	Number and location of protective devices:	Overcurrent protection by several built-in fuse, earth fault protection by fuse or circuit breaker in the phase of the building installation.	P
2.7.5	Protection by several devices	Only one fuse.	N/A
2.7.6	Warning to service personnel.....:	No service work necessary.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.8	Safety interlocks		N/A
2.8.1	General principles	No safety interlock provided.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm)		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Humidity treatment performed for 120 h. The transformer manufactured by each factories passed the test.	P
	Relative humidity (%), temperature (°C)	95 % R.H., 40 °C	—
2.9.3	Grade of insulation	Please refer to 5.2, 2.10 and 4.5.	P
2.9.4	Separation from hazardous voltages	See below.	P
	Method(s) used	Method 1.	—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See 2.10.3, 2.10.4 and 2.10.5.	P
2.10.1.1	Frequency	The frequency does not exceeding 30 kHz.	P
2.10.1.2	Pollution degrees	Pollution degrees 2.	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts	Complied with.	P
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage	The rms and the peak voltage were measured on the switching power supply. The unit was connected to a 240 V power system and secondary ground was maintained during measurement. Results see appended table 2.10.2.	P
2.10.2.1	General	Complied	P
2.10.2.2	RMS working voltage	See appended table 2.10.2.	P
2.10.2.3	Peak working voltage	See appended table 2.10.2.	P
2.10.3	Clearances	See below.	P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages	See appended table 2.10.3 and 2.10.4.	P
	a) AC mains supply	2500 Vpk considered.	P
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits	The clearance distance is complied the requirements for use in altitude 3,048 m (10000 feet) above the sea level, the altitude correction factor is 1.15. See appended table 2.10.3 and 2.10.4.	P
2.10.3.4	Clearances in secondary circuits	See appended table 2.10.3 and 2.10.4 and refer to 5.3.4.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply	2500 Vpk assumed.	P
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems	No TNV circuit.	N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	See appended table 2.10.3 and 2.10.4.	P
2.10.4.2	Material group and comparative tracking index	Material group IIIa/IIIb and Material group I assumed.	P
	CTI tests	CTI rating of min. 600 for PCB of power board. CTI rating of min. 100 for other materials.	—
2.10.4.3	Minimum creepage distances	See appended table 2.10.3 and 2.10.4.	P
2.10.5	Solid insulation	Complied with 2.10.5.2 to 2.10.5.14 and 5.2.	P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	—
2.10.5.3	Insulating compound as solid insulation	Complied with 2.10.5.2 and 2.10.10.	P
2.10.5.4	Semiconductor devices	See 2.10.5.3.	P
2.10.5.5	Cemented joints	See appended table 2.10.3 and 2.10.4.	P
2.10.5.6	Thin sheet material – General	Reinforced insulation.	P
2.10.5.7	Separable thin sheet material	See appended table C.2.	—
	Number of layers (pcs)	See appended table C.2.	—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.10	Thin sheet material – alternative test procedure	Electric strength test applied to each one layer.	P
	Electric strength test	See appended table 5.2.	—
2.10.5.11	Insulation in wound components	In equipment, winding in wound components (choke, transformer...) are complied with functional insulation only. No wire in wound component provides basic, supplementary and reinforced insulation.	P
2.10.5.12	Wire in wound components	Reinforced insulation.	P
	Working voltage	(see appended table 2.10.2).	P
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U	Triple insulated wire is used in secondary winding of T2 for reinforced insulation, also see annex U and appended table 1.5.1.	P
	Two wires in contact inside wound component; angle between 45° and 90°	Insulation tape and/or tubing provided.	—
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards	See below.	P
2.10.6.1	Uncoated printed boards	See appended table 2.10.3 and 2.10.4.	P
2.10.6.2	Coated printed boards	No coated printed wiring boards.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.7	Component external terminations	See appended table 2.10.3 and 2.10.4.	P
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		—
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling	No insulation breakdown.	P
2.10.10	Test for Pollution Degree 1 environment and insulating compound	No cracks or voids in the insulating material.	P
2.10.11	Tests for semiconductor devices and cemented joints	No cracks, voids or gapes in the insulating material.	P
2.10.12	Enclosed and sealed parts	Passed 2.10.10.	P

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Clause	Requirement + Test	Result - Remark	Verdict
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Line, Neutral and PE wirings used 18AWG. Other internal wires are UL recognized wiring that is PVC insulated, rated VW-1, min. 80 °C, 300 V. Internal wiring gauge is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heatsinks which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	Internal wires with only basic isolation are routed so that they are not close to any live bare components. The wires are secured by solder pins or quick connect terminals so that a loosening of the terminal connection is unlikely.	P
3.1.4	Insulation of conductors	Securely held on PCB. No hazard. The insulation of the individual conductors are suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	Electrical connections screwed two or more complete threads into metal.	P
3.1.7	Insulating materials in electrical connections	All current carrying and safety earthing connections are metal to metal.	P
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	10N pull test performed for all relevant conductors. No hazards caused hereby.	—
3.1.10	Sleeving on wiring	Sleevings on wiring reliable kept in position by cable ties or by the use of heat shrunk sleeving.	P

3.2	Connection to a mains supply		P
3.2.1	Means of connection	See below.	P
3.2.1.1	Connection to an a.c. mains supply	Approved appliance inlet used.	P
3.2.1.2	Connection to a d.c. mains supply	No connection to d.c. mains supply.	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment	The unit is not permanent connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	The appliance inlet complies with IEC/EN 60320-1.	P
3.2.5	Power supply cords	Not provided.	N/A
3.2.5.1	AC power supply cords	See above.	N/A
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords	Not connect to DC mains.	N/A
3.2.6	Cord anchorages and strain relief	This equipment is not with non-detachable power supply cord.	N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	No sharp edges and no part likely to damage the power cord.	P
3.2.8	Cord guards	No cord guard provided.	N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.9	Supply wiring space	Not permanently connected and without non-detachable power supply cord.	N/A
3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	Equipment provided with an Appliance Inlet.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm)		—
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.4	Disconnection from the mains supply		P
3.4.1	General requirement	See below.	P
3.4.2	Disconnect devices	Appliance inlet used as disconnect device.	P
3.4.3	Permanently connected equipment	The unit is not permanently connected equipment.	N/A
3.4.4	Parts which remain energized	When the disconnect device is disconnected no remaining parts with hazardous voltage in the equipment.	P
3.4.5	Switches in flexible cords	No isolation switch provided.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The appliance coupler disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Equipment is single phase.	N/A
3.4.8	Switches as disconnect devices	No switch as disconnect device.	N/A
3.4.9	Plugs as disconnect devices	Appliance inlet used as disconnect device.	N/A
3.4.10	Interconnected equipment	Not interconnected equipment.	N/A
3.4.11	Multiple power sources	Only one supply connection provided.	N/A

3.5	Interconnection of equipment		P
3.5.1	General requirements	The power supply is not considered for connection to TNV.	P
3.5.2	Types of interconnection circuits..... :	Interconnection circuits of SELV and L.C.C. through the connector.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection circuits.	N/A
3.5.4	Data ports for additional equipment	The outputs of data ports are complied with limited power source. See appended table 2.5 for details.	P

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Clause	Requirement + Test	Result - Remark	Verdict

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°	The equipment does not overbalance when tilted to 10 degrees (evaluated in horizontal, vertical and an angle of elevation orientation).	P
	Test force (N)	Equipment is not a floor standing unit.	N/A

4.2	Mechanical strength		P
4.2.1	General	See below.	P
	Rack-mounted equipment.	No such construction.	N/A
4.2.2	Steady force test, 10 N	10 N applied to components.	P
4.2.3	Steady force test, 30 N	30 N applied to internal chassis.	P
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure (all type of enclosure source). No energy or other hazards.	P
4.2.5	Impact test	500 g steel sphere ball fall, from 1.3 m height onto outer enclosure (all type of enclosure source). No safety relevant damages.	P
	Fall test	Ditto.	P
	Swing test	Ditto.	P
4.2.6	Drop test; height (mm).....	The unit is not hand-held or direct plug-in equipment.	N/A
4.2.7	Stress relief test	After 7 h at 70 °C and cooling down to room temperature, no shrinkage, distortion or loosening of outer plastic enclosure parts (all type of enclosure source) was noticeable on the equipment. The internal metal chassis also treated as parts of enclosure.	P
4.2.8	Cathode ray tubes	No cathode ray tube.	N/A
	Picture tube separately certified		
4.2.9	High pressure lamps	No high pressure lamp.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.10	Wall or ceiling mounted equipment; force (N)	Not wall or ceiling mounted equipment.	N/A
4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N).....:	Each handle withstood the loading test of 409 N.	P
4.3.3	Adjustable controls	No control devices.	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 heat shrunk tubing are used.	P
4.3.5	Connection of plugs and sockets	No mismatching of connectors possible.	N/A
4.3.6	Direct plug-in equipment	The equipment is not a direct plug-in unit.	N/A
	Torque		—
	Compliance with the relevant mains plug standard		—
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	No batteries provided.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	Insulation not in contact with oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	N/A
4.3.11	Containers for liquids or gases	The equipment does not contain liquid.	N/A
4.3.12	Flammable liquids	No flammable liquids in this unit.	N/A
	Quantity of liquid (l).....:		—
	Flash point (°C)		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13	Radiation; type of radiation	See below.	P
4.3.13.1	General	See clause 4.3.13.5.	P
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV radiation.	N/A
	Part, property, retention after test, flammability classification		—
4.3.13.4	Human exposure to ultraviolet (UV) radiation	No UV radiation.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	See clause 4.3.13.5.2.	P
4.3.13.5.1	Lasers (including laser diodes)	No laser provided.	N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	No radiation is generated inside the equipment. The energy of the indicator LED is far below the limit for Class 1 LED products.	P
4.3.13.6	Other types	Not used.	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	No hazardous moving parts.	N/A
4.4.2	Protection in operator access areas	No hazardous moving parts.	N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations	The equipment is not intended to be used in restricted locations.	N/A
4.4.4	Protection in service access areas	No hazardous moving parts.	N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a).....:		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A

4.5	Thermal requirements		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	See appended table 4.5.	P
	Normal load condition per Annex L	Maximum normal load which specified by manufacturer.	—
4.5.3	Temperature limits for materials	See appended table 4.5.	P
4.5.4	Touch temperature limits	See appended table 4.5.	P
4.5.5	Resistance to abnormal heat	It is clear the transformer (T1, T2) bobbin in this unit will meet the requirements (phenolic type), also see Annex C for the details of material. Other components see appended table 4.5.5 for details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm) :	(See appended table.)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottommm, dimensions (mm) .. :	(See appended table.)	—
4.6.3	Doors or covers in fire enclosures	No doors or covers provided.	N/A
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	No barrier or screen secured with adhesive.	N/A
	Conditioning temperature (°C), time (weeks) :		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes and testing in Single Fault Conditions.	P
	Method 1, selection and application of components wiring and materials	Selection and application of components and materials which minimize the possibility of ignition and spread of flame.	P
	Method 2, application of all of simulated fault condition tests	Not used.	N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	With having the following components: - components in primary - components in secondary (not supplied by L.P.S.) - components having unenclosed arcing parts at hazardous voltages or energy level - insulated wiring The fire enclosure is required.	P
4.7.2.2	Parts not requiring a fire enclosure	See 4.7.2.1	N/A
4.7.3	Materials		P
4.7.3.1	General	Integrated circuits and small electrical parts mounted on a printed wiring board min. rated V-1 or better.	P
4.7.3.2	Materials for fire enclosures	The metal chassis and plastic material used as fire enclosure.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Materials or parts outside fire enclosure are metal or decorative plastic.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components mounted on a printed wiring board min. rated V-1 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filters assemblies.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage component used.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	See sub-clause 5.1.2 to 5.1.6.	P
5.1.2	Configuration of equipment under test (EUT)	EUT has only one mains connection.	P
5.1.2.1	Single connection to an a.c. mains supply	Each piece of equipment tested separately.	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Equipment is tested using the test circuit in figure 5 A.	P
5.1.4	Application of measuring instrument	Tests are conducted using one of the measuring instruments in annex D, or any other circuit giving the same results.	P
5.1.5	Test procedure	The touch current was measured from supply to conductive parts and to 10 cm by 20 cm metal foil wrapped on accessible non- conductive parts (plastic enclosure).	P
5.1.6	Test measurements	See appended table 5.1.	P
	Supply voltage (V)	264 Vac	—
	Measured touch current (mA)	See appended table 5.1.	—
	Max. allowed touch current (mA)	3.5 mA (for PE) or 0.25 mA (for accessible non- conductive parts).	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA) ...		—
5.1.7	Equipment with touch current exceeding 3,5 mA		
5.1.7.1	General	Touch current does not exceed 3.5 mA.	N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to telecommunication networks.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	No TNV.	N/A
	Supply voltage (V) :		—
	Measured touch current (mA) :		—
	Max. allowed touch current (mA) :		—
5.1.8.2	Summation of touch currents from telecommunication networks	No TNV.	N/A
	a) EUT with earthed telecommunication ports :		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.2	Electric strength		P
5.2.1	General	All tests voltages were applied for 1 minute in the chamber after the humidity test of 2.9.2 and in warm conditions after the heating test of 4.5.2. No isolation breakdown was observed. The transformer manufactured by each factories passed the test. (Results see appended tables)	P
5.2.2	Test procedure	See appended table 5.2.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	Blocked opening test, results see appended table.	P
5.3.2	Motors	No motor provided.	N/A
5.3.3	Transformers	No high temp. of the transformer are to be observed or to be expected. (see appended table 5.3 and Annex C)	P
5.3.4	Functional insulation..... :	Short Circuit tests. Result see appended table 5.3.	P
5.3.5	Electromechanical components	No electromechanical components.	N/A
5.3.6	Audio amplifiers in ITE :		N/A
5.3.7	Simulation of faults	Faults in primary and secondary components and operational insulation were already considered for the building-in power supply board. The abnormal tests for the equipment see appended table for details.	P
5.3.8	Unattended equipment	None of them are used.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No fire propagated beyond the equipment. No molten metal was emitted. Electric strength test was passed.	P
5.3.9.1	During the tests	Ditto.	P
5.3.9.2	After the tests	Ditto.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	Not connected to telecommunication networks directly.	N/A
	Supply 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 the telecommunication wiring system from overheating		N/A
	Max. output current (A).....		—
	Current limiting method		—

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Clause	Requirement + Test	Result - Remark	Verdict
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General	Not connected to cable distribution system directly.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—



PSB Singapore

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

IEC 60950-1			
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 d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		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)		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		P
	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 appended table 5.3)	P
C.2	Insulation	(See appended table 5.2 and C.2)	P
	Protection from displacement of windings.....	(See appended table C.2)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
C.2	Safety isolation transformer		P
Construction details:			
Transformer T1 of SPS board			
Mfr.: TAMURA			
Type: T0-5881			
Recurring peak voltage		440 V	
Required clearance insulation (from table 2K and 2L, pollution degree 2)			
For Reinforced		*4.9 mm (4.2x1.15)	
For Basic		*2.5 mm (2.1x1.15)	
Effective voltage rms		264 V	
Required creepage insulation (from table 2N, pollution degree 2, material group IIIa+IIIb)			
For Reinforced		5.4 mm	
For Basic		2.7 mm	
Measured min. clearances			
prim-sec (Reinforced)		6.4 mm (between inner windings)	
prim-core (Basic)		5.5 mm (between prim. windings to core)	
sec-core (Basic)		5.5 mm (between sec. windings to core)	
Measured min. creepages			
prim-sec (Reinforced)		6.4 mm (between inner windings)	
prim-core (Basic)		5.5 mm (between prim. windings to core)	
sec-core (Basic)		5.5 mm (between sec. windings to core)	
Note.			
*The multiplication factor for clearances as 1.15 according to Table A.2 of IEC 60664-1:2007 is considered for altitude up to 10,000 ft.			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Construction:			
Concentric windings on single bobbin. The Primary windings and secondary windings are separated by the construction of bobbin. Core is considered as floating.			
Pin numbers			
Prim.		6-8, 3-5	
Sec.		11-12-13, 15-16, 17-18	
Bobbin			
Material		Sumitomo, type PM-9820	
Thickness		Min. 0.64 mm	
Electric strength test			
With AC 3000 V after humidity treatment			
Result		Pass	
Supplementary information:			
The transformer manufactured by each factories passed the test and the result is the same.			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
C.2	Safety isolation transformer		P
Construction details:			
Transformer T2 of SPS board			
Mfr.: TAMURA			
Type: T0-5882			
Recurring peak voltage		520 V	
Required clearance insulation (from table 2K and 2L, pollution degree 2)			
For Reinforced		*5.1 mm (4.4x1.15)	
For Basic		*2.6 mm (2.2x1.15)	
Effective voltage rms		336 V	
Required creepage insulation (from table 2N, pollution degree 2, material group IIIa+IIIb)			
For Reinforced		6.8 mm	
For Basic		3.4 mm	
Measured min. clearances			
prim-sec (Reinforced)		Triple insulation wire used.	
sec-core (Reinforced)		16.7 mm (between sec. fly winding to core)	
Measured min. creepages			
prim-sec (Reinforced)		Triple insulation wire used.	
sec-core (Reinforced)		16.7 mm (between sec. fly winding to core)	
Note.			
*The multiplication factor for clearances as 1.15 according to Table A.2 of IEC 60664-1:2007 is considered for altitude up to 10,000 ft.			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Construction:			
Concentric windings on single bobbin (Phenolic material) with vertical core orientation or other identical sources. Certified triple insulation wires used for secondary windings, two layers of insulation tape between primary and secondary windings, core is considered as primary part. The secondary winding is fly wires construction which is fixed on PCB by soldering and glued, protection against direct crossover of triple insulation wire by tape.			
Pin numbers			
Prim.		1-5-2, 3-4	
Sec.		6-7	
Bobbin			
Material		Sumitomo, type PM-9820	
Thickness		Min. 0.55 mm	
Electric strength test			
With AC 3000 V after humidity treatment			
Result		Pass	
Supplementary information: The transformer manufactured by each factories passed the test and the result is the same.			

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		P
D.1	Measuring instrument	Figure D.1 used.	P
D.2	Alternative measuring instrument		N/A
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N/A
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A

IEC 60950-1			
Clause	Requirement + Test		Verdict
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		P
	Metal(s) used	Metals which the combination electrochemical potential is less than 0.6V.	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	Maximum normal load which specified by manufacturer.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A

N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators	Not used.	N/A
N.2	IEC 60065 impulse test generator		N/A

P	ANNEX P, NORMATIVE REFERENCES		—
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Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		P
	a) Preferred climatic categories	Approved varistor (VS1) provided.	P
	b) Maximum continuous voltage	Ditto.	P
	c) Pulse current	Ditto.	P

R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)	Not used.	N/A
R.2	Reduced clearances (see 2.10.3)		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment	Not used.	N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.12)		P
		See separated Report for triple insulation wire used in T2.	—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction		P
V.2	TN power distribution systems		P

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	ANNEX CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General	No such component.	N/A
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....		N/A
DD	ANNEX DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General	No such construction.	N/A
DD.2	Mechanical strength test, variable N.....		N/A
DD.3	Mechanical strength test, 250N, including end stops.....		N/A
DD.4	Compliance.....		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
EE	ANNEX EE, Household and home/office document/media shredders		N/A
EE.1	General	The equipment is not a household and home/office document/media shredders.	N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	Information of user instructions, maintenance and/or servicing instructions.....:		N/A
EE.3	Inadvertent reactivation test.....:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A):		N/A
	Test with wedge probe (Figure EE1 and EE2):		N/A

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
Plastic Enclosure	Teijin Chemicals Ltd Research & Development Div	TN-7500(c) (c) - May be suffixed with any one or two letters except F, M and T	5 VB min., 2.0 mm thick min., 60 °C min.	UL 94	UL	
	Cheil industries inc chemicals div	GC-1017(+) ((+)- May be replaced by one, two, or three numbers and/or letter(s))	5 VB min., 85 °C, thick 2.0 mm min.	UL 94	UL	
Metal Enclosure	--	--	Min. 1.0 mm thick.	--	--	
PCB	Various	Various	V-1 or better, 105 °C min.	UL 796	UL	
Stand (Optional)	Various	Various	Metal with decorative part, min. HB, weight: 3.40kg	UL 94	UL	
LCD Panel	LG Display	LM240WU9	24.0", TFT type	--	--	
Insulation sheet (under internal power supply board)	Various	Various	V-2 min.	UL 94	UL	
Hood (Optional)	Various	Various	HB Min.	UL 94, UL 746C	UL	
Internal Switching Power Supply	Tamura	NDS2401	I/P: 100-240 Vac, 50/60 Hz, 1.59-0.64 A. O/P: 24 Vdc/4 A max.,12 Vdc/1.5 A max, 5 Vdc/3.4 A max.	--	--	
- AC Inlet	Solteam	ST-01	250 Vac, 10 A 70 °C	IEC/EN 60320-1, UL498	VDE, UL	

1.5.1	TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
- Fuse (F1)	Littelfuse	215	T4AH, 250 V	IEC 60127-2, EN 60127-2, UL 248-1	VDE, UL	
-Varistor (VS1) (optional)	Thinking	TVR14471K	300 Vac; 385 Vdc	IEC/EN 61051-1, IEC/EN 61051-2, UL1449 3rd (SPD type 3)	VDE, UL	
- Thermistor (TH1)(Optional)	--	--	4 A, 8 ohm at 25 °C	--	--	
X Capacitor (C1) (Optional)	Okaya	LE	Min. 250 Vac, min. 100 °C, max. 0.33 µF	IEC/EN 60384- 14:2005, UL1414	ENEC, UL	
- Choke (L1, L2) (Optional)	UENO	ADR16H- 02080YD	105°C min.	--	--	
- Y Capacitor (C2, C3) (Optional) (Y1 or Y2 type)	TDK	CD	Min. 250 Vac, max. 680 pF, min. 125 °C	IEC/EN 60384- 14:2005, UL1414	VDE, UL	
	Murata	KX	Min. 250 Vac, max. 680 pF, min. 125 °C	IEC/EN 60384- 14:2005, UL1414	VDE, UL	
- Y Capacitor (C4) (Optional) (Y1 or Y2 type)	TDK	CD	Min. 250 Vac, max. 150 pF, min. 125 °C	IEC/EN 60384- 14:2005, UL1414	VDE, UL	
	Murata	KX	Min. 250 Vac, max. 150 pF, min. 125 °C	IEC/EN 60384- 14:2005, UL1414	VDE, UL	
- Bridge Diode (D1)	--	--	Min. 600 V, min. 15 A	--	--	
- Choke (L5) (Optional)	Hong Kok	301300H-354	105 °C min.	--	--	
- PFC Choke (L3, L4)	Tamura	T0-9793	105 °C min.	--	--	

1.5.1	TABLE: List of critical components (continues)					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity ¹⁾	
- Transistor (Q1, Q2)	--	--	Min. 600 V, min. 7 A	--	--	
- Electrolytic Capacitor (C8)	--	--	100 µF, 450 V min., 105 °C min.	--	--	
- Transistor (Q3, Q4)	--	--	Min. 600 V, min. 6 A.	--	--	
- Transistor (Q5)	--	--	Min. 900 V, min. 9 A	--	--	
- Sensor Resistor (R51)	--	--	Min. 0.75 ohm, 2 W	--	--	
- Bridge Capacitor (C44)(Y1 type) (Optional)	Murata	KX	Min. 250 Vac, max. 1500 pF, min. 125 °C	IEC/EN 60384- 14:2005, UL1414	VDE, UL	
	TDK	CD	Min. 250 Vac, max. 1500 pF, min. 125 °C	IEC/EN 60384- 14:2005, UL1414	VDE, UL	
- Photo Coupler (PHC1, PHC2, PHC3, PHC4)	Renesas	PS2561A-1	Dti>0.4 mm, Ext. dcr>7.0 mm, 100 °C, comply with thermal cycling test	IEC 60950-1, EN 60950-1, IEC 60747-5-2, EN 60747-5-2, UL1577	FI, VDE, UL	
- Transformer (T1)	TAMURA	T0-5881	Class A	--	--	
- Transformer (T2)	TAMURA	T0-5882	Class A	--	--	
- Triple Insulation Wire (used in T2)	Furukawa	TEX-E	130 °C min.	IEC 690950-1, EN 60950-1, UL 2353	VDE, UL	
-PCB	Eternal Chemical Co., Ltd.	ETL-204 (with adhesive)	Material Group I, CTI ≥ 600, V-0, 1.8 min. thickness, 130 °C.	UL 796	UL	
¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance						
Supplementary information:						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (Vac/Hz)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
For Display mode (with LCD panel type: LM240WU9)						
90/50	0.67	--	59.2	F1	0.67	Maximum normal load.
90/60	0.67	--	59.2	F1	0.67	Maximum normal load.
100/50	0.60	0.84	59.1	F1	0.60	Maximum normal load.
100/60	0.61	0.84	59.1	F1	0.61	Maximum normal load.
240/50	0.26	0.38	58.7	F1	0.26	Maximum normal load.
240/60	0.26	0.38	58.7	F1	0.26	Maximum normal load.
254/50	0.24	--	58.7	F1	0.24	Maximum normal load.
254/60	0.24	--	58.8	F1	0.24	Maximum normal load.
264/50	0.23	--	58.9	F1	0.23	Maximum normal load.
264/60	0.24	--	58.9	F1	0.24	Maximum normal load.
For DVI mode (with LCD panel type: LM240WU9)						
90/50	0.67	--	59.2	F1	0.67	Maximum normal load.
90/60	0.67	--	59.2	F1	0.67	Maximum normal load.
100/50	0.60	0.84	59.0	F1	0.60	Maximum normal load.
100/60	0.60	0.84	59.0	F1	0.60	Maximum normal load.
240/50	0.26	0.38	58.9	F1	0.26	Maximum normal load.
240/60	0.26	0.38	58.9	F1	0.26	Maximum normal load.
254/50	0.24	--	59.0	F1	0.24	Maximum normal load.
254/60	0.24	--	59.0	F1	0.24	Maximum normal load.
264/50	0.23	--	59.0	F1	0.23	Maximum normal load.
264/60	0.24	--	59.0	F1	0.24	Maximum normal load.

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (Vac/Hz)	I (A)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (A)	Condition/status
For HDMI mode (with LCD panel type: LM240WU9)						
90/50	0.67	--	59.2	F1	0.67	Maximum normal load.
90/60	0.67	--	59.2	F1	0.67	Maximum normal load.
100/50	0.61	0.84	59.1	F1	0.61	Maximum normal load.
100/60	0.61	0.84	59.2	F1	0.61	Maximum normal load.
240/50	0.26	0.38	58.7	F1	0.26	Maximum normal load.
240/60	0.26	0.38	58.7	F1	0.26	Maximum normal load.
254/50	0.24	--	58.8	F1	0.24	Maximum normal load.
254/60	0.24	--	58.8	F1	0.24	Maximum normal load.
264/50	0.23	--	58.9	F1	0.23	Maximum normal load.
264/60	0.24	--	58.9	F1	0.24	Maximum normal load.
For VGA mode (with LCD panel type: LM240WU9)						
90/50	0.67	--	58.9	F1	0.67	Maximum normal load.
90/60	0.67	--	58.9	F1	0.67	Maximum normal load.
100/50	0.60	0.84	58.6	F1	0.60	Maximum normal load.
100/60	0.60	0.84	58.6	F1	0.60	Maximum normal load.
240/50	0.26	0.38	58.8	F1	0.26	Maximum normal load.
240/60	0.26	0.38	58.7	F1	0.26	Maximum normal load.
254/50	0.24	--	58.8	F1	0.24	Maximum normal load.
254/60	0.24	--	58.8	F1	0.24	Maximum normal load.
264/50	0.23	--	58.8	F1	0.23	Maximum normal load.
264/60	0.24	--	58.8	F1	0.24	Maximum normal load.
Supplementary information:						

2.1.1.7	TABLE: Discharge test				P
Condition	Switch Position	τ calculated (s)	τ measured (s)	comments	
Line-Neutral	--	--	0.6	Vo= 376 V 37 % x Vo= 139.12 V Vt=1 sec= 72 V	
EMI Filter capacity: N/A					
Overall capacity: C1=0.33 μ F					
Discharge resistor: N/A					

2.2.2	TABLE: Hazardous voltage (circuit) measurement Test				P
Transformer designation	Location	Maximum Voltage	Voltage Limiting Component	Comments	
T1	Pin 15 to 16, 17	31.2 Vpk	--	--	
T1	Pin 18 to 16, 17	31.8 Vpk	--	--	
T1	Pin 11 to 12	16.0 Vpk	--	--	
T1	Pin 13 to 12	16.4 Vpk	--	--	
T2	Pin 6 to 7	37.2 Vpk	--	--	
Supplementary information: If the voltage exceeded 42.4 V pk or 60 V dc, the measurement was taken again after the next component in series with the secondary until the voltage measured was less than 42.4 V pk or 60 V dc. Each voltage measured and each component located in series directly before the measurement was noted.					

2.4.2	TABLE: Limited current circuit measurement (continues)					P
Location	Voltage (V)	Current (mA)	Freq. (KHz)	Limit (mA)	Comments	
For Power Board						
C44 secondary pin to Earth	0.156	0.312	0.06	0.7	Bridge capacitor C44 = 1500 pF.	
Supplementary information:						
Output measured with a non-inductive resistor of 2 KΩ as load.						

2.5	TABLE: Limited power sources					P	
Circuit output tested:							
Note: Measured Uoc (V) with all load circuits disconnected:							
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA		
			Meas.	Limit	Meas.	Limit	
Display port (P310), Pin 1,2,3,4,5,6,7,8,9,10,11,12,13,14,16,17,19 to RTN, normal condition							
--	1	0	0	≤ 8.0	0	≤ 100	
Display port (P310), Pin 15 to RTN, normal condition							
--	1	0.65	0	≤ 8.0	0	≤ 100	
Display port (P310), Pin 18 to RTN, normal condition							
--	1	3.28	0	≤ 8.0	0	≤ 100	
Display port (P310), Pin 20 to RTN, normal condition							
--	1	3.3	0.95	≤ 8.0	2.75	≤ 100	
Display port (P310), Pin 20 to RTN, single fault condition							
MD315, Pin 1 to 3 Sc	1	3.3	2.40	≤ 8.0	5.20	≤ 100	
Display port (P310), Pin 20 to RTN, single fault condition							
IC311, Pin 4 to 6-8 Sc	1	3.3	0.95	≤ 8.0	2.87	≤ 100	
Display port (P310), Pin 20 to RTN, single fault condition							
IC311, Pin 5 to 6-8 Sc	1	3.3	0.95	≤ 8.0	2.87	≤ 100	
HDMI port (P325), Pin 1,3,4,6,7,9,10,12 to RTN, normal condition							
--	1	3.29	0	≤ 8.0	0	≤ 100	
HDMI port (P325), Pin 2 to RTN, normal condition							
--	1	2.44	0	≤ 8.0	0	≤ 100	
HDMI port (P325), Pin 5,8,11,14,17,18,19 to RTN, normal condition							
--	1	0	0	≤ 8.0	0	≤ 100	
HDMI port (P325), Pin 13 to RTN, normal condition							
--	1	2.67	0	≤ 8.0	0	≤ 100	
HDMI port (P325), Pin 15,16 to RTN, normal condition							
--	1	3.51	0	≤ 8.0	0	≤ 100	

2.5	TABLE: Limited power sources					P	
Circuit output tested:							
Note: Measured Uoc (V) with all load circuits disconnected:							
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA		
			Meas.	Limit	Meas.	Limit	
DVI port (P330), Pin 1,2,9,10,17,18,23,24 to RTN, normal condition							
--	1	3.29	0	≤ 8.0	0	≤ 100	
DVI port (P330), Pin 3,4,5,8,11,12,13,14,16,19,20,21,22 to RTN, normal condition							
--	1	0	0	≤ 8.0	0	≤ 100	
DVI port (P330), Pin 6,7 to RTN, normal condition							
--	1	4.39	0	≤ 8.0	0	≤ 100	
DVI port (P330), Pin 15 to RTN, normal condition							
--	1	2.43	0	≤ 8.0	0	≤ 100	
VGA port (P340), Pin 1,2,3,4,6,7,8,10,11,13,14 to RTN, normal condition							
--	1	0	0	≤ 8.0	0	≤ 100	
VGA port (P340), Pin 5 to RTN, normal condition							
--	1	2.43	0	≤ 8.0	0	≤ 100	
VGA port (P340), Pin 9 to RTN, normal condition							
--	1	1.96	0	≤ 8.0	0	≤ 100	
VGA port (P340), Pin 12,15 to RTN, normal condition							
--	1	2.08	0	≤ 8.0	0	≤ 100	
USB2.0 port (P701), Pin 1,2,3,4 to RTN, normal condition							
--	1	0	0	≤ 8.0	0	≤ 100	
USB2.0 port (P702), Pin 1,2,3,4 to RTN, normal condition							
--	1	0	0	≤ 8.0	0	≤ 100	
USB2.0 port (P703), Pin 1,2,3,4 to RTN, normal condition							
--	1	5.16	1.4	≤ 8.0	5.62	≤ 100	
USB2.0 port (P703), Pin 1,2,3,4 to RTN, single fault condition							
IC704, Pin 7 to 8 Sc	1	5.17	4.1	≤ 8.0	15.3	≤ 100	
USB2.0 port (P703), Pin 1,2,3,4 to RTN, single fault condition							
Q861, Pin 4 to 5,6 Sc (Main board)	1	5.16	1.4	≤ 8.0	5.58	≤ 100	

2.5	TABLE: Limited power sources					P	
Circuit output tested:							
Note: Measured Uoc (V) with all load circuits disconnected:							
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA		
			Meas.	Limit	Meas.	Limit	
USB2.0 port (P704), Pin 1,2,3,4 to RTN, normal condition							
--	1	5.16	1.4	≤ 8.0	5.56	≤ 100	
USB2.0 port (P704), Pin 1,2,3,4 to RTN, single fault condition							
IC704, Pin 5 to 7 Sc	1	5.17	4.1	≤ 8.0	15.28	≤ 100	
USB2.0 port (P704), Pin 1,2,3,4 to RTN, single fault condition							
Q861, Pin 4 to 5,6 Sc (Main board)	1	5.16	1.4	≤ 8.0	5.54	≤ 100	
USB2.0 port (P705), Pin 1,2,3,4 to RTN, normal condition							
--	1	5.16	1.4	≤ 8.0	5.61	≤ 100	
USB2.0 port (P705), Pin 1,2,3,4 to RTN, single fault condition							
IC705, Pin 7 to 8 Sc	1	5.17	4.1	≤ 8.0	15.3	≤ 100	
USB2.0 port (P705), Pin 1,2,3,4 to RTN, single fault condition							
Q861, Pin 4 to 5,6 Sc (Main board)	1	5.16	1.4	≤ 8.0	5.58	≤ 100	
For power board output (+5 V), normal condition							
--	1	5.1	4.3	≤ 8.0	21.07	≤ 100	
For power board output (+5 V), single fault condition							
PHC2 pin 1 to 2 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+5 V), single fault condition							
PHC2 pin 3 to 4 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+5 V), single fault condition							
PHC2 pin 1 Oc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+5 V), single fault condition							
PHC2 pin 3 Oc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+5 V), single fault condition							
PHC3 pin 1 to 2 Sc	1	5.1	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
PHC3 pin 3 to 4 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	

2.5	TABLE: Limited power sources					P	
Circuit output tested:							
Note: Measured Uoc (V) with all load circuits disconnected:							
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA		
			Meas.	Limit	Meas.	Limit	
For power board output (+5 V), single fault condition							
PHC3 pin 1 Oc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
PHC3 pin 3 Oc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
PHC4 pin 1 to 2 Sc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
PHC4 pin 3 to 4 Sc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
PHC4 pin 1 Oc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
PHC4 pin 3 Oc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
R51 Sc	1	5.2	4.3	≤ 8.0	21.5	≤ 100	
For power board output (+5 V), single fault condition							
R52 Sc	1	5.2	4.1	≤ 8.0	20.5	≤ 100	
For power board output (+12 V), normal condition							
--	1	12	2.5	≤ 8.0	29.0	≤ 100	
For power board output (+12 V), single fault condition							
PHC1 pin 1 to 2 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+12 V), single fault condition							
PHC1 pin 3 to 4 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+12 V), single fault condition							
PHC1 pin 1 Oc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	
For power board output (+12 V), single fault condition							
PHC1 pin 3 Oc	1	0	--(*)	≤ 8.0	--(*)	≤ 100	

2.5	TABLE: Limited power sources					P
Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Sample No.	Uoc (V)	I _{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
For power board output (+12 V), single fault condition						
PHC3 pin 1 to 2 Sc	1	12	5.3	≤ 8.0	59.89	≤ 100
For power board output (+12 V), single fault condition						
PHC3 pin 3 to 4 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100
For power board output (+12 V), single fault condition						
PHC3 pin 1 Oc	1	12	5.3	≤ 8.0	59.89	≤ 100
For power board output (+12 V), single fault condition						
PHC3 pin 3 Oc	1	12	5.3	≤ 8.0	59.89	≤ 100
For power board output (+12 V), single fault condition						
PHC4 pin 1 to 2 Sc	1	0	--(*)	≤ 8.0	--(*)	≤ 100
For power board output (+12 V), single fault condition						
PHC4 pin 3 to 4 Sc	1	12	2.5	≤ 8.0	42.5	≤ 100
For power board output (+12 V), single fault condition						
PHC4 pin 1 Oc	1	0	--(*)	≤ 8.0	--(*)	≤ 100
For power board output (+12 V), single fault condition						
PHC4 pin 3 Oc	1	0	--(*)	≤ 8.0	--(*)	≤ 100
For power board output (+12 V), single fault condition						
R51 Sc	1	11.9	--(**)	≤ 8.0	--(**)	≤ 100
For power board output (+12 V), single fault condition						
R32 Sc	1	12.1	2.5	≤ 8.0	29.25	≤ 100
For power board output (+12 V), single fault condition						
R81 Sc	1	12	5.3	≤ 8.0	60.42	≤ 100
Supplementary information:						
Sc=Short circuit, Oc=Open circuit (*) : Output shut down immediately. (**) : Output is unable to upload.						

2.6.3.4	TABLE: Ground continue test		P
Location		Resistant measured (mΩ)	Comments
Ground pin of AC inlet to metal enclosure		10.6	Test current=32 A, 2 min., voltage drop: 0.34 V
Ground pin of AC inlet to metal enclosure		11.0	Test current=40 A, 2 min., voltage drop: 0.44 V
Supplementary information:			
The resistance did not exceed 0.1 Ω from any accessible conductive part and earth.			

2.10.2	TABLE: Max. working voltage measurement			P
Location	Peak Voltage (V)	TRMS Voltage (V)	Comments	
T1, Pin 2, 3 to 10, 11	280	152		
T1, Pin 2, 3 to 12	272	152		
T1, Pin 2, 3 to 13	264	152		
T1, Pin 2, 3 to 15	296	156		
T1, Pin 2, 3 to 16, 17	272	152		
T1, Pin 2, 3 to 18	272	152		
T1, Pin 4 to 10, 11	23.6	8.0		
T1, Pin 4 to 12	25.2	8.8		
T1, Pin 4 to 13	26.4	9.6		
T1, Pin 4 to 15	22.0	7.6		
T1, Pin 4 to 16, 17	25.6	8.8		
T1, Pin 4 to 18	28.0	11.2		
T1, Pin 5, 6 to 10, 11	360	200		
T1, Pin 5, 6 to 12	368	208		
T1, Pin 5, 6 to 13	380	216		
T1, Pin 5, 6 to 15	368	192		
T1, Pin 5, 6 to 16, 17	368	200		
T1, Pin 5, 6 to 18	396	224		
T1, Pin 7 to 10, 11	32.6	16.8		
T1, Pin 7 to 12	32.8	18.0		
T1, Pin 7 to 13	34.0	19.2		
T1, Pin 7 to 15	33.6	15.2		
T1, Pin 7 to 16, 17	32.8	18.0		
T1, Pin 7 to 18	36.0	20.8		
T1, Pin 8 to 10, 11	416	240		
T1, Pin 8 to 12	416	248		
T1, Pin 8 to 13	432	256		
T1, Pin 8 to 15	424	232		
T1, Pin 8 to 16, 17	416	248		

2.10.2	TABLE: Max. working voltage measurement (continues)			P
Location	Peak Voltage (V)	TRMS Voltage (V)	Comments	
T1, Pin 8 to 18	440	264	Highest Vrms and Vpeak of T1.	
T2, Pin 1 to 6	456	312		
T2, Pin 1 to 7	424	312		
T2, Pin 2 to 6	520	336		
T2, Pin 2 to 7	520	336	Highest Vrms and Vpeak of T2.	
T2, Pin 3 to 6	440	176		
T2, Pin 3 to 7	480	184		
T2, Pin 4 to 6	376	176		
T2, Pin 4 to 7	368	176		
R47 to R87	356	176		
PHC1, Pin 3 to 1	372	184		
PHC1, Pin 3 to 2	372	184		
PHC1, Pin 4 to 1	368	184		
PHC1, Pin 4 to 2	368	184		
R31 to PHC1 Pin 1	368	184		
PHC3, Pin 3 to 1	336	164		
PHC3, Pin 3 to 2	336	164		
PHC3, Pin 4 to 1	336	184		
PHC3, Pin 4 to 2	336	184		
PHC2, Pin 3 to 1	360	180		
PHC2, Pin 3 to 2	360	180		
PHC2, Pin 4 to 1	360	180		
PHC2, Pin 4 to 2	360	180		
PHC4, Pin 3 to 1	340	160		
PHC4, Pin 3 to 2	340	164		
PHC4, Pin 4 to 1	340	160		
PHC4, Pin 4 to 2	340	164		
T2, Pin 4 to PHC4 Pin 2	356	176		
C44, Primary to Secondary	320	172		

2.10.2	TABLE: Max. working voltage measurement (continues)			P
Location		Peak Voltage (V)	TRMS Voltage (V)	Comments
Converter Board Output (provide for LCD Panel)				
CN802 Pin 1 – GND	18.5	14.3		
CN802 Pin 2 – GND	18.5	14.3		
CN802 Pin 3 – GND	52Vdc	--		
CN802 Pin 4 – GND	52Vdc	--		
CN802 Pin 5 – GND	18.4	14.3		
CN802 Pin 6 – GND	18.4	14.3		
CN802 Pin 7 – GND	18.4	14.3		
CN802 Pin 8 – GND	18.4	14.3		
CN802 Pin 9 – GND	52Vdc	--		
CN802 Pin 10 – GND	52Vdc	--		
CN802 Pin 11 – GND	18.5	14.3		
CN802 Pin 12 – GND	18.5	14.3		
Supplementary information: Test voltage: 240 Vac at 60 Hz				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
clearance cl and creepage distance dcr at/of:	U peak (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
For power board						
Functional:						
L/N traces before use	420	250	1.8 ¹⁾ (1.5x1.15)	5.5	1.25 ⁹⁾	5.5
Trace under fuse	420	250	1.8 ¹⁾ (1.5x1.15)	8.0	1.25 ⁹⁾	8.0
Basic / supplementary:						
Line to PE wire	420	250	2.3 ¹⁾ (2.0x1.15)	4.4	2.5	4.4
Under C2, C3, C4	420	250	2.3 ¹⁾ (2.0x1.15)	4.8	1.25 ⁹⁾	4.8
C8 to T1 core	440	264	2.5 ¹⁾ (2.1x1.15)	7.2	2.7	14.8
L10 to T1 core	440	264	2.5 ¹⁾ (2.1x1.15)	9.0	2.7	16.6
C25 to T1 core	440	264	2.5 ¹⁾ (2.1x1.15)	5.0	2.7	9.6
C45, C46 to T1 core	440	264	2.5 ¹⁾ (2.1x1.15)	3.6	2.7	11.2
Power board primary side to metal enclosure (PE)	420	250	2.3 ¹⁾ (2.0x1.15)	4.9	1.25 ⁹⁾	10.0
Reinforced:						
Power board primary side to SELV board	420	250	4.6 ¹⁾ (4.0x1.15)	51.0	2.5 ⁹⁾	68.0
Primary components (with 10 N) to secondary components (with 10 N)	420	250	4.6 ¹⁾ (4.0x1.15)	See below	5.0	See below
Heat sink of D2 to C47				6.5		6.5
R47 to R48				9.2		9.2
R31 to PHC1 pin 1				7.5		7.5
D20 trace to T2 core	520	336	5.1 ¹⁾ (4.4x1.15)	6.0	4.0 ⁹⁾	4.8
Secondary fly winding of transformer (T2) to core via PCB	520	336	5.1 ¹⁾ (4.4x1.15)	6.4	4.0 ⁹⁾	6.4

clearance cl and creepage distance dcr at/of:	U peak (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Primary trace to secondary trace	420	250	4.6 ¹⁾ (4.0x1.15)	See below	2.5 ⁹⁾	See below
Under PHC1				7.8		7.8
Under PHC2				7.8		7.8
Under PHC3				7.8		7.8
Under PHC4				7.8		7.8
Under C44				9.3		9.3
Under T1	440	264	4.9 ¹⁾ (4.2x1.15)	17.8	3.2 ⁹⁾	17.8
Under T2	520	336	5.1 ¹⁾ (4.4x1.15)	12.0	4.0 ⁹⁾	12.0

Supplementary information:

- 1) Altitude correction factor for clearance for an altitude of 3,048 m (Based on IEC 60664-1:2007):1.15.
- 2) The CTI rating of PCB is material group IIIa/IIIb (Cl. 2.10.4).
- 3) Separation Method between SELV and hazard circuit (Cl. 2.2.3) by double or reinforced insulation (Method 1) earthed screen (Method 2).
- 4) Functional insulation shorted, see sub-clause 5.3.4.
- 5) All primary and secondary internal wirings are keep in position and could not be contacted each other.
- 6) One mylar sheet is located under power board.
- 7) Tubes component: C25.
- 8) L, N wire soldered on PCB by soldering pin.
- 9) The power board PCB used material group I, see table for details.

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (Vac)	Required DTI (mm)	DTI (mm)
Photo Couplers (reinforced insulation)	420	250	3000	0.4	¹⁾
Plastic Enclosure (reinforced insulation)	420	250	3000	0.4	¹⁾
Tube for C25 used (supplementary insulation)	420	250	3000	0.4	0.4
Supplementary information:					
1) For distance through insulation, see appended table 1.5.1 for details.					
2) Test all sources of optical isolator, see appended table 1.5.1 for details.					

4.5	TABLE: Thermal requirements			P
	Supply voltage (V)	See below.		—
	Ambient T_{min} (°C)	--		—
	Ambient T_{max} (°C)	--		—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
Test condition		90 Vac (Horizontal)	264 Vac (Horizontal)	--
Ambient		40.0	40.0	--
For Power board				
AC inlet near Line		48.5	48.1	70
VS1 body		54.7	51.5	85
PCB near TH1		68.5	59.5	130
C1 body		59.6	53.3	100
L1 coil		61.3	54.4	105
C2 body near C3		53.5	51.6	85
L2 coil		58.9	54.6	105
C4 body		58.8	55.6	85
L5 coil		60.8	57.7	105
PCB near Q5		65.4	63.2	130
PCB near Q4		65.0	62.2	130
PCB near Q3		65.9	62.8	130
PCB near D1		65.9	61.5	130
L3 coil		64.7	62.1	105
L4 coil		66.9	64.6	105
C8 body		61.9	60.9	85
PCB near Q1		67.6	73.1	130
PCB near Q2		66.4	71.8	130
C44 body		57.2	57.0	85
T2 coil		65.1	64.8	90
T2 core		62.1	61.9	90
PHC4 body		62.3	61.8	100
PHC2 body		62.1	61.6	100
PHC3 body		61.6	60.9	100
PHC1 body		61.2	60.3	100
T1 coil		66.3	66.2	90
T1 core		66.1	65.8	90
PCB near D19		64.7	64.7	130
L6 coil		66.3	67.2	105

4.5	TABLE: Thermal requirements			P
	Supply voltage (V) :	See below.		—
	Ambient T _{min} (°C) :	--		—
	Ambient T _{max} (°C) :	--		—
Maximum measured temperature T of part/at::		T (°C)		Allowed T _{max} (°C)
For main board				
PCB near IC401		65.8	65.8	105
PCB near IC100		60.3	60.4	105
For bridge board				
PCB near IC701		56.9	56.9	105
C742 body		50.5	50.5	85
For converter board				
L801 coil		64.9	65.0	105
L803 coil		60.9	61.0	105
For enclosure inside and user accessible area				
Plastic enclosure inside near T1		48.2	48.4	60
Plastic enclosure outside near T1		46.9	46.6	95
Metal enclosure near AC inlet		46.9	46.9	70
Panel body		49.1	49.6	80

4.5	TABLE: Thermal requirements		P
	Supply voltage (V)	See below.	—
	Ambient T_{min} (°C)	--	—
	Ambient T_{max} (°C)	--	—
Maximum measured temperature T of part/at::		T (°C)	Allowed T_{max} (°C)
Test condition		90 Vac (Vertical)	264 Vac (Vertical)
Ambient		40.0	40.0
For Power board			
AC inlet near Line		56.8	56.0
VS1 body		66.3	62.2
PCB near TH1		75.5	67.7
C1 body		70.5	63.1
L1 coil		68.5	63.4
C2 body near C3		63.2	61.8
L2 coil		66.3	63.2
C4 body		65.1	63.6
L5 coil		62.0	61.9
PCB near Q5		71.0	69.5
PCB near Q4		68.4	66.6
PCB near Q3		69.3	67.3
PCB near D1		70.7	67.8
L3 coil		64.8	65.3
L4 coil		65.2	66.3
C8 body		62.6	64.3
PCB near Q1		65.7	73.5
PCB near Q2		64.2	72.1
C44 body		66.4	66.1
T2 coil		71.7	71.0
T2 core		68.7	68.1
PHC4 body		65.4	64.8
PHC2 body		65.7	65.1
PHC3 body		65.2	64.7
PHC1 body		64.6	64
T1 coil		67.1	66.8
T1 core		67.5	67.2
PCB near D19		67.1	66.8
L6 coil		62.8	63.5

4.5	TABLE: Thermal requirements			P
	Supply voltage (V) :	See below.		—
	Ambient T _{min} (°C) :	--		—
	Ambient T _{max} (°C) :	--		—
Maximum measured temperature T of part/at::		T (°C)		Allowed T _{max} (°C)
For main board				
PCB near IC401		65.2	65.1	105
PCB near IC100		55.4	55.3	105
For bridge board				
PCB near IC701		54.7	54.7	105
C742 body		48.5	48.5	85
For converter board				
L801 coil		58.0	57.8	105
L803 coil		56.1	55.8	105
For enclosure inside and user accessible area				
Plastic enclosure inside near T1		48.0	47.9	60
Plastic enclosure outside near T1		47.2	47.2	95
Metal enclosure near AC inlet		53.0	52.9	70
Panel body		48.2	47.8	80

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
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Supplementary information:

The temperatures were measured by thermal couple (type K) method under worst case normal mode as described in 1.6.2 at voltage described in 1.4.5. The worst case normal mode is defined with max load of the equipment.

With max. ambient temperature specified as 40 °C, therefore, the maximum temperature rise is calculated as follows:

Winding components:

- class A $\rightarrow T_{max} = 100 - 10 = 90$ °C (T_1, T_2) (For power board)

For power board

Components with:

- max. temp. of 85 °C (VS1, C2, C4, C8, C44)
- max. temp. of 100 °C (C1)
- max. temp. of 100 °C (Photo Coupler)
- max. temp. of 105 °C (L1, L2, L3, L4, L5, L6)
- max. temp. of 70 °C (AC inlet)
- max. temp. of 130 °C (PCB)

For main board

- max. temp. of 105 °C (PCB)

For bridge board

- max. temp. of 105 °C (PCB)
- max. temp. of 85 °C (C742)

For converter board

- max. temp. of 105 °C (L801, L803)
- max. temp. of 60 °C (Plastic Enclosure)

User accessible area:

- material is plastic (95 °C)
- material is metal (70 °C)
- Panel (80 °C)

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm) :	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Bobbin of T1, T2, L3, L4 (Sumitomo / PM-9820)		125	0.9	
Bobbin of L1, L2 (MITSUBISHI / 5010N6)		125	0.9	
Bobbin of L1, L2 (LG / LUPOX GP-2306F)		125	1.1	
Supplementary information:				

4.6.1& 4.6.2	TABLE: enclosure openings		P
Location	Size (mm)	Comments	
Front side	--	No openings	
Top side	20.9 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 495 mm by 20.9 mm. (The internal metal chassis covered which is 3.5 mm max. in any dimension.)	
	19.0 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 170 mm by 19.0 mm. (The internal metal chassis covered which is 3.5 mm max. in any dimension.)	
	19.0 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 170 mm by 19.0 mm. (The internal metal chassis covered which is 3.5 mm max. in any dimension.)	
Right side ¹⁾	20.9 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 324 mm by 20.9 mm. (The internal metal chassis covered which is metal bottom chassis confirming to the dimension limits of any line in thickness 1.0 mm, max. diameter of hole 3.5 mm and min. holes center to center 5.5 mm.)	
	19.0 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 215 mm by 19.0 mm. (The internal metal chassis covered which is metal bottom chassis confirming to the dimension limits of any line in thickness 1.0 mm, max. diameter of hole 3.5 mm and min. holes center to center 5.5 mm.)	
Left side	20.9 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 324 mm by 20.9 mm. (The internal metal chassis covered which is 1.8 mm max. in any dimension.)	
	19.0 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 215 mm by 19.0 mm. (The internal metal chassis covered which is 3.5 mm max. in any dimension.)	

4.6.1& 4.6.2	TABLE: enclosure openings (continues)		P
Location		Size (mm)	Comments
Rear side ¹⁾		31.5 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 400 mm by 31.5 mm. (The internal metal chassis covered which are 3.5 mm max. for any dimension with no components in 5 °C and metal bottom chassis confirming to the dimensional limits of any line in thickness 1.0 mm, max. diameter of hole 1.8 mm and min. holes center to center 3.3 mm.)
Bottom side		20.9 x 2.5 mm	Numerous rectangular openings provided, covering an area of approx. 495 mm by 20.9 mm. (The internal metal chassis covered which is metal bottom chassis confirming to the dimensional limits of any line in thickness 1.0 mm, max. diameter of hole 1.8 mm and min. holes center to center 3.3 mm.)
Supplementary information: All conditions are horizontal condition.			
¹⁾ : After rotating, the right side and rear side will be from side to bottom.			

4.7	TABLE: Resistance to fire					P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	
Metal enclosure	--	--	1.0	--	P	
Plastic enclosure	Teijin Chemicals Ltd Research & Development Div	TN-7500	2.0	5 VB or better	P	
Plastic enclosure	Cheil industries inc chemicals div	GC-1017(+)	2.0	5 VB or better	P	
PCB	--	--	--	V-1 or better	P	
Supplementary information:						

5.1	TABLE: Touch current measurement			P
	Normal	The tests are repeated in reverse polarity		
Condition	Current (mA) L, N→ Plastic enclosure (with foil)	Current (mA) L, N→ Plastic enclosure (with foil)	Comments	
System ON	0.005	0.005	With “e” closed	
Condition	Current (mA) L, N→ Output Terminal	Current (mA) L, N→ Output Terminal	Comments	
System ON	0.25	0.25	With “e” opened	
Condition	Current (mA) L, N→ Metal Enclosure	Current (mA) L, N→ Metal Enclosure	Comments	
System ON	0.25	0.25	With “e” opened	
Input voltage: 264 V				
Input frequency: 60 Hz				
Overall capacity: on SPS board: C2, C3 = 680 pF; C4= 150 pF ; Bridge capacitor C44 = 1500 pF.				

5.2	TABLE: Electric strength measurements			P
test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	test voltage (V)	breakdown
For Unit				
Primary to SELV		DC	4242	No
Primary to plastic enclosure with metal foil		AC	3000	No
Primary to earth		DC	2837	No
Insulation sheet between internal power supply board and metal chassis		DC	2837	No
For Transformer				
T1 (P/N: T0-5881) Primary winding to SELV winding		AC	3000	No
T1 (P/N: T0-5881) Primary winding to core		AC	1707	No
T1 (P/N: T0-5881) SELV winding to core		AC	1707	No
T2 (P/N: T0-5882) Primary winding to SELV winding		AC	3000	No
T2 (P/N: T0-5882) SELV winding to core		AC	3000	No
One layer of insulation tape (Thickness:0.025 mm) (T1 and T2 used)		AC	3000	No
Supplementary information: 1) There was no indication of breakdown as a result of applying the test voltage to the indicated locations for 60 seconds. 2) Test with insulation tape source, see below for details: - Teraoka Seisakusho Co., Ltd.(E56086), type No.631S#25, 632S#25 - Symbio Inc. (E50292), type 35660, 35660Y - Jingjiang Yahua Pressure Sensitive Glue Co., Ltd. (E165111), type CT, PZ 3) Electric strength test are also conducted after clause 2.9.2.				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				25 °C or see below.	—
	Power source for EUT: Manufacturer, model/type, output rating				See Table 1.5.1 for detail.	—
Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
PHC1 pin 1 to pin 2	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
PHC1 pin 3 to pin 4	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
PHC3 pin 1 to pin 2	s-c	240	30 min	F1	0.26	Unit operated normally. No damage, no hazard.
PHC3 pin 3 to pin 4	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
PHC2 pin 1 to pin 2	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
PHC2 pin 3 to pin 4	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
PHC4 pin 1 to pin 2	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
PHC4 pin 3 to pin 4	s-c	240	30 min	F1	0.26	Unit operated normally. No damage, no hazard.
PHC1 pin 1	o-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
PHC1 pin 3	o-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
PHC3 pin 1	o-c	240	30 min	F1	0.26	Unit operated normally. No damage, no hazard.
PHC3 pin 3	o-c	240	30 min	F1	0.26	Unit operated normally. No damage, no hazard.
PHC2 pin 1	o-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
PHC2 pin 3	o-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
PHC4 pin 1	o-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
PHC4 pin 3	o-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
IC2, pin 14 to 4	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
Q4 pin G to S	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
Q3 pin G to S	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
Q5 pin G to S	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
Q1 pin G to S	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
D1 ~ to +	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
C8	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
Q4 pin D to S	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
Q4 pin D to G	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
Q3 pin D to S	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
Q3 pin D to G	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
Q7 pin D to G	s-c	240	30 min	F1	0.26	Unit operated normally. No damage, no hazard.
R5	s-c	240	30 min	F1	0.26	Unit operated normally. No damage, no hazard.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
Q1 pin D to S	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
Q1 pin D to G	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
Q5 pin D to S	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
Q5 pin D to G	s-c	240	1 s	F1	0.26 to 0	Fuse (F1) open immediately. No hazard.
Ventilation openings	b-l	240	2 hr	F1	0.26	Unit operated normally. Maximum temperature of T1 coil= 63.2 °C, T2 coil= 58.1 °C, Ambient= 24.4 °C. No damage, no hazard.
T1 pin 15 to 16, 17	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
T1 pin 18 to 16, 17	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
T1 pin 11 to 12	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
T1 pin 13 to 12	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
T1 pin 3 to 8	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
T2 pin 6 to 7	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
T2 pin 3 to 4	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
T2 pin 1 to 2	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
T1 pin 11, 13 to 2 (After D19)	o-l	240	9.5 hr	F1	0.26 to 0.7 to 0.03	Unit shut down at load: 2.5 A. Maximum temperature of T1 coil= 81.5 °C, T2 coil= 70.5 °C, Ambient=26.4 °C. No damage, no hazard.
T1 pin 15, 18 to 16 (After D18)	o-l	240	11 hr	F1	0.26 to 0.8 to 0.12	Besides +5 V, unit shut down at load: 5.7 A. Maximum temperature of T1 coil= 91.5 °C, T2 coil= 72.2 °C, Ambient= 26.7 °C at load 5.5 A. No damage, no hazard.
T2 pin 6 to 7 (After D20)	o-l	240	8 hr	F1	0.26 to 0.67 to 0.03	Unit shut down at load: 4.2 A. Maximum temperature of T1 coil= 73.3 °C, T2 coil= 69.9 °C, ambient=26.1 °C. No damage, no hazard.
+24 V	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
+12 V	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.
+5 V	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
+5 V to +24 V	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
+5 V to +12 V	s-c	240	10 min	F1	0.26 to 0.03	Unit shut down immediately. No damage, no hazard.
+24 V to +12 V	s-c	240	30 min	F1	0.26 to 0.12	Besides +5 V, unit shut down immediately. No damage, no hazard.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
OVERLOAD OF OPERATOR ACCESSIBLE CONNECTOR TEST (For US deviation)						
Display port (P310), Pin 1,2,3,4,5,6,7, 8,9,10,11,12, 13,14,16,17,19 to GND	o-l	240	--	--	--	Open circuit voltage=0 Vdc, Maximum available current=0 mA. No hazard.
Display port (P310), Pin 15 to GND	o-l	240	--	--	--	Open circuit voltage=0.65 Vdc, Maximum available current=0 mA. No hazard.
Display port (P310), Pin 18 to GND	o-l	240	--	--	--	Open circuit voltage=3.28 Vdc, Maximum available current=0 mA. No hazard.
Display port (P310), Pin 20 to GND	o-l	240	1 h	--	--	Open circuit voltage=3.3 Vdc, Maximum available current=0.95 mA. No hazard.
HDMI port (P325), Pin 1,3,4,6,7,9,10, 12 to GND	o-l	240	--	--	--	Open circuit voltage=3.29 Vdc, Maximum available current=0 mA. No hazard.
HDMI port (P325), Pin 2 to GND	o-l	240	--	--	--	Open circuit voltage=2.44 Vdc, Maximum available current=0 mA. No hazard.
HDMI port (P325), Pin 5,8,11,14,17, 18,19 to GND	o-l	240	--	--	--	Open circuit voltage=0 Vdc, Maximum available current=0 mA. No hazard.
HDMI port (P325), Pin 13 to GND	o-l	240	--	--	--	Open circuit voltage=2.67 Vdc, Maximum available current=0 mA. No hazard.
HDMI port (P325), Pin 15,16 to GND	o-l	240	--	--	--	Open circuit voltage=3.51 Vdc, Maximum available current=0 mA. No hazard.

Component No.	Fault	Supply voltage (Vac)	Test time	Fuse #	Fuse current (A)	Observation
DVI port (P330), Pin 1,2,9,10,17,18,23,24 to GND	o-l	240	--	--	--	Open circuit voltage=3.29 Vdc, Maximum available current=0 mA. No hazard.
DVI port (P330), Pin 3,4,5,8,11,12,13,14,16,19,20,21,22 to GND	o-l	240	--	--	--	Open circuit voltage=0 Vdc, Maximum available current=0 mA. No hazard.
DVI port (P330), Pin 6,7 to GND	o-l	240	--	--	--	Open circuit voltage=4.39 Vdc, Maximum available current=0 mA. No hazard.
DVI port (P330), Pin 15 to GND	o-l	240	--	--	--	Open circuit voltage=2.43 Vdc, Maximum available current=0 mA. No hazard.
Supplementary information:						
Fault: s-c = short circuit, o-c = open circuit, o-l = overload, b-l=blocked.						
Note:						
1. Temperature of all components were considered, no high temperature exceeding request.						
2. If fuse not open have repeat test three times.						