APPLICATION FOR LOW VOLTAGE DIRECTIVE

On Behalf of

ZKTECO CO.,LTD.

Walk Through Metal Detector

Model(s): ZK-D1065S, ZK-D2180S, ZK-D3180S

Prepared For : **ZKTECO CO.,LTD.**
No.26, Pingshan 188 Industry zone, Tangxia Town, Dongguan City, Guangdong Province, China 523728

Prepared By : **EMTEK (Shenzhen) Co., Ltd.**
Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China
Tel: +86-755-26954280
Fax: +86-755-26954282

TEST REPORT

IEC 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report Number ..... :	ES160919026S
Date of issue ..... :	October 29, 2016
Total number of pages	71 pages
Applicant's name ..... :	ZKTECO CO.,LTD.
Address ..... :	No.26, Pingshan 188 Industry zone, Tangxia Town, Dongguan City, Guangdong Province, China 523728
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
Test procedure ..... :	LVD
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form(s) Originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

General disclaimer:

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Walk Through Metal Detector
Trade Mark ..... :	ZKTeco
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	ZK-D1065S, ZK-D2180S, ZK-D3180S
Ratings ..... :	Input: 100V-240V~ , 1.5A, 50/60Hz

Testing procedure and testing location:		
☒	**CB Testing Laboratory:**	EMTEK (Shenzhen) Co., Ltd.
Testing location/ address..... :		Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China
☐	**Associated CB Laboratory:**	
Testing location/ address..... :		
Tested by (name + signature)..... :	Agan Gan	
Approved by (name + signature) ..... :	William Guo	
☐	Testing procedure: **TMP**	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Approved by (name + signature) ..... :		
☐	Testing procedure: **WMT**	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Witnessed by (name + signature).... :		
Approved by (name + signature) ..... :		
☐	Testing procedure: **SMT**	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Approved by (name + signature) ..... :		
Supervised by (name + signature)... :		
☐	Testing procedure: **RMT**	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Approved by (name + signature) ..... :		
Supervised by (name + signature)... :		

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

- Page 1 to 45 for TRF;
- European group differences (46-62 pages)
- Product photos (63-71 Pages)

Summary of testing:

Tests performed (name of test and test clause):

1. Following tests performed during evaluation:

Clause(s)	Test(s)
1.6.2	Input current test
1.7.11	Durability of marking test
2.2.2, 2.2.3, 2.2.4	SELV Reliability Test Including Hazardous Voltage Measurements
2.4.1, 2.4.2	Limited Current Circuit Measurements
2.6.3.4	Protective Bonding Test
2.9.2	Humidity Conditioning
2.10.2	Determination of Working Voltage - Working Voltage Measurement Test
2.10.3 & 2.10.4	Clearance and creepage distance measurements
4.2.4	Steady force test
4.2.5	Impact Test
4.5.2	Maximum temperature test
4.5.5	Ball Pressure Test
5.1	Touch Current Test
5.2	Electric Strength Test
5.3	Fault condition test

Testing location:

EMTEK (Shenzhen) Co., Ltd.

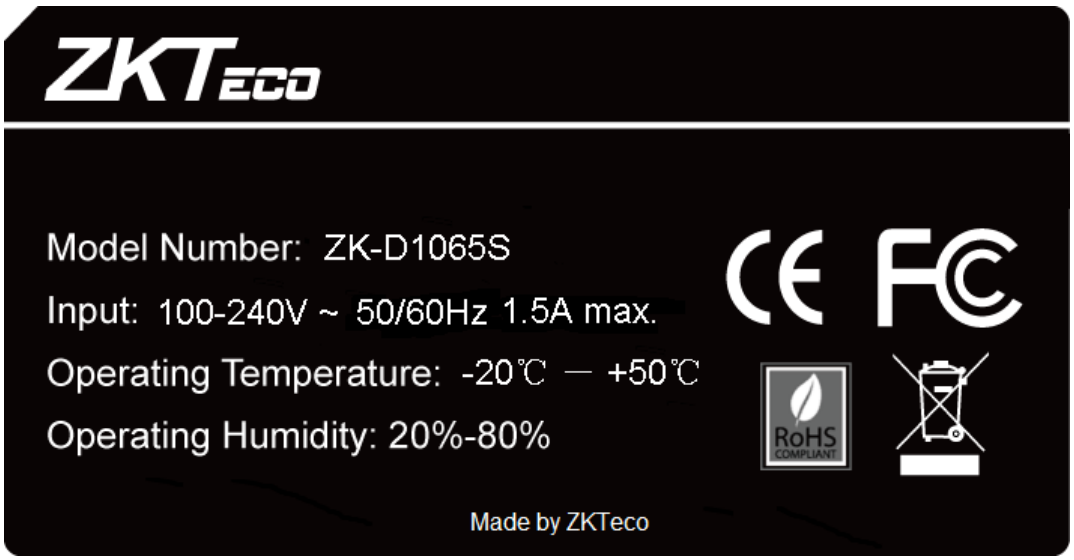
Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

Summary of compliance with National Differences

EU Group Differences, EU Special National Conditions.

Copy of marking plate (representative)

The artwork below may be only a draft.



Manufacturer: ZKTECO CO., LTD.

Address: No.26,Pingshan 188 Industry zone, Tangxia Town, Dongguan City, Guangdong Province, China 523728

Importer: XXX

Address: XXX

Remark:

- The above markings are the minimum requirements required by the safety standard. For the final production, the additional markings which do not give rise to misunderstanding may be added.

- The CE marking and WEEE symbol should be at least 5.0mm and 7.0mm respectively in height.

Test item particulars .....:	
Equipment mobility .....:	[] movable [] hand-held [] transportable [x] stationary [] for building-in [] direct plug-in
Connection to the mains.....:	[x] pluggable equipment [x] type A [] type B [] permanent connection [x] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains [] built-in component, considered in end system
Operating condition .....:	[x] continuous [] rated operating / resting time:
Access location .....:	[x] operator accessible [] restricted access location
Over voltage category (OVC) .....:	[] OVC I [x] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values .....:	±10% (requested by client)
Tested for IT power systems .....:	[] Yes [x] No
IT testing, phase-phase voltage (V) .....:	
Class of equipment .....:	[x] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) .....:	N/A
Pollution degree (PD) .....:	[] PD 1 [x] PD 2 [] PD 3
IP protection class .....:	IP20
Altitude during operation (m) .....:	Up to 2000m
Altitude of test laboratory (m) .....:	Below 2000m
Mass of equipment (kg) .....:	>20kg
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 .....:	October 15, 2016
Date(s) of performance of tests.....:	October 15, 2016 to October 28, 2016
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 IECEE 02:

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).....: Same as manufacturer

General product information:

1) The product covered by this report is Walk Through Metal Detector used for information technology equipment.
2) Mains supply tolerance: 100Vac (-10%), 240Vac (+10%) of input voltage considered.
3) All models are identical in electrical, mechanical, physical construction except model number, the model ZK-D1065S was chose to test.

Max. ambient temperature: 50℃

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
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 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 controls	N/A
1.5.4	Transformers	Transformers used are suitable for their intended applications and comply with relevant parts of this standard and particularly Annex C. See Annex C- Transformers.	P
1.5.5	Interconnecting cables	No Interconnecting cables	N/A
1.5.6	Capacitors bridging insulation	X, Y capacitors complying with IEC 60384-14 provided.	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Bleeder resistors bridging functional insulation only.	P
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		N/A
1.5.9	Surge suppressors	Evaluated in approved power supply.	P
1.5.9.1	General		P
1.5.9.2	Protection of VDRs		P
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR	Type A	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No this VDR	N/A
1.6	**Power interface**		P

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

1.6.1	AC power distribution systems	TN power system	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	This appliance is not hand-held equipment.	N/A
1.6.4	Neutral conductor		N/A
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	See below	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:	Single power source	N/A
	Rated voltage(s) or voltage range(s) (V) .....:	100V-240V	P
	Symbol for nature of supply, for d.c. only.....:		N/A
	Rated frequency or rated frequency range (Hz) ...:	50Hz/60Hz	N/A
	Rated current (mA or A) .....:	1.5A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....:	See copy of marking plate	P
	Model identification or type reference .....:	See page 1	P
	Symbol for Class II equipment only .....:		N/A
	Other markings and symbols .....:	Additional symbol or marking does not give rise to misunderstanding	P
1.7.1.3	Use of graphical symbols		N/A
1.7.2	Safety instructions and marking	See below	P
1.7.2.1	General	English version provided	P
1.7.2.2	Disconnect devices	Plug	P
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No operator accessible area need be accessed by the use of a tool	N/A
1.2.7.6	Ozone	Not such equipment	N/A
1.7.3	Short duty cycles	For continuous operation	N/A
1.7.4	Supply voltage adjustment .....:	No voltage selector	N/A
	Methods and means of adjustment; reference to installation instructions .....:		N/A
1.7.5	Power outlets on the equipment .....:	No power outlets provided	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	"F1 T2AL 250V or T3.15AL 250V" marked on PCB adjacent to fuse F1	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.7	Wiring terminals	See below	P
1.7.7.1	Protective earthing and bonding terminals .....:		P
1.7.7.2	Terminals for a.c. mains supply conductors	Detachable power supply cord	N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	No safety relevant controls and indicators	N/A
1.7.8.1	Identification, location and marking .....:	No safety relevant controls and indicators	N/A
1.7.8.2	Colours .....:	No safety relevant controls and indicatoTFRrs	N/A
1.7.8.3	Symbols according to IEC 60417.....:	No symbols used.	N/A
1.7.8.4	Markings using figures .....:		N/A
1.7.9	Isolation of multiple power sources .....:	Single power source	N/A
1.7.10	Thermostats and other regulating devices .....:	No such devices used	N/A
1.7.11	Durability	The label was subjected to the performance of marking test. The label was rubbed with cloth soaked with water for 15 sec. and then again for 15 sec. with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was no curling and shrinkable of the label edge.	P
1.7.12	Removable parts	No such parts	N/A
1.7.13	Replaceable batteries .....:		N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations .....:	Not intended for use in restricted access locations	N/A

2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	No access with test finger and test pin to any hazardous parts.	P
2.1.1.1	Access to energized parts	See below	P
	Test by inspection .....:	Complied.	P
	Test with test finger (Figure 2A) .....:	No contact.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with test pin (Figure 2B) .....:	No contact.	P
	Test with test probe (Figure 2C) .....:	No TNV	N/A
2.1.1.2	Battery compartments	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	(see appended tables 2.10.2 and 2.10.5)	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator access area	N/A
2.1.1.5	Energy hazards .....:	No energy hazards.	N/A
2.1.1.6	Manual controls	No manual controls	N/A
2.1.1.7	Discharge of capacitors in equipment	CX1=0.47uF, R2=R3= R2A=R3A=1.0M ohm	P
	Measured voltage (V); time-constant (s).....:	Vp=396V, Vtc=16V at 1s	—
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
2.1.1.9	Audio amplifiers .....:	Not such amplifiers	N/A
2.1.2	Protection in service access areas		P
2.1.3	Protection in restricted access locations	Not intended for use in such areas	N/A

2.2	**SELV circuits**		P
2.2.1	General requirements	The DC output of approved power supply evaluated in approved power supply.	P
2.2.2	Voltages under normal conditions (V) .....:	Evaluated in approved power supply.	P
2.2.3	Voltages under fault conditions (V) .....:	Evaluated in approved power supply SELV circuits.	P
2.2.4	Connection of SELV circuits to other circuits .....:	SELV circuits in approved power supply only connected with SELV circuits in the equipment.	P

2.3	**TNV circuits** *No TNV circuits*		N/A
2.3.1	Limits		N/A
	Type of TNV circuits.....:		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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** *No such circuits*		P
2.4.1	General requirements	See below	P
2.4.2	Limit values	0.7mA	P
	Frequency (Hz) .....:	60Hz	—
	Measured current (mA) .....:	Tested using the measuring instrument of Figure D.1. 0.12mA	—
	Measured voltage (V).....:	0.06V	—
	Measured circuit capacitance (nF or µF) .....:	CY1=2200pF	—
2.4.3	Connection of limited current circuits to other circuits	Output circuit as limited current circuit connected to primary via one bridging capacitor (CY1).	P
2.5	**Limited power sources**		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....:		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters		N/A

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

2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Earth terminal of Appliance inlet As protective earthing terminal. The metal chassis reliably connected to earthby screw.	P
2.6.2	Functional earthing	Functional earthing is in the secondary circuit and separated from the primary by reinforced insulation.	P
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors	See below	P
	Rated current (A), cross-sectional area (mm^2), AWG.....:		—
2.6.3.3	Size of protective bonding conductors	Protective bonding conductors evaluated based on 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).....:	1. PE terminal to farthest metal enclosure: Resistance: 0.06Ω, Test Current: 32A, 2mins, voltage drop 1.92V; 2. PE terminal to farthest metal enclosure: Resistance: 0.05Ω, voltage drop 2V; Test Current: 40A, 2mins	P
2.6.3.5	Colour of insulation .....:		N/A
2.6.4	Terminals	See below.	P
2.6.4.1	General	See below.	P
2.6.4.2	Protective earthing and bonding terminals	Appliance inlet with earth terminal used.	P
	Rated current (A), type, nominal thread diameter (mm).....:	See appended table 1.5.1.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	It should be considered in the final system.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.5	Integrity of protective earthing	No switch or overcurrent protective device in protective earthing.	P
2.6.5.1	Interconnection of equipment		P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		P
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance	Comply to Annex J.	P
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	The equipment relies on fuse or circuit breaker of the wall outlet protection of the building installation in regard to L to N short-circuits. A build-in fuse provided as overcurrent protection device (see 5.3)	P
	Instructions when protection relies on building installation		N/A
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	Building installation is considered as providing short-circuit backup protection.	P
2.7.4	Number and location of protective devices .....:	Over-current protection by built-in fuses in the equipment	P
2.7.5	Protection by several devices	Protection provided by fuses.	N/A
2.7.6	Warning to service personnel .....:		N/A
2.8	**Safety interlocks** *No safety interlocks*		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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, 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 material not used.	P
2.9.2	Humidity conditioning	Performed at 40°C, 93% R.H. for 120h (requested by manufacturer).	P
	Relative humidity (%), temperature (°C) .....:	See above.	—
2.9.3	Grade of insulation	See above.	
2.9.4	Separation from hazardous voltages	The adequate levels of safety insulation provided and maintained to comply with the requirements of this standard.	P
	Method(s) used .....:	SELV separated from primary by reinforced or double insulation.	—
2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General	See below	P
2.10.1.1	Frequency .....:	Considered	P
2.10.1.2	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	No such part	P
2.10.1.5	Insulation with varying dimensions	No such transformer used	N/A
2.10.1.6	Special separation requirements	No TNV	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuit	N/A
2.10.2	Determination of working voltage		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.2.1	General	The rms and the peak voltage were measured with unit connected to a 240V TN power system. Pollution Degree 2 and Overvoltage Category II considered.	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 and advantage of annex G is not considered.	P
2.10.3.1	General	Considered.	P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....:		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	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	Sub-clause 5.3.4 considered	P
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:	Normal transient voltage considered (Overvoltage category II for primary circuit).	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 .....:	Not connected to telecommunication networks and cable distribution systems.	N/A
2.10.3.9	Measurement of transient voltage levels	Normal transient voltage considered	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	Evaluated in approved power supply board and see appended table 2.10.3 and 2.10.4 for other parts.	P
2.10.4.1	General	Considered	P
2.10.4.2	Material group and comparative tracking index	Material group IIIb is assumed to be used.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	CTI tests ..... :	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances	Evaluated in approved power supply board and see appended table 2.10.3 and 2.10.4 for other parts.	P
2.10.5	**Solid insulation**	Evaluated in approved power supply board and see appended table 2.10.5 for other parts.	P
2.10.5.1	General	See below.	P
2.10.5.2	Distances through insulation	Evaluated in approved power supply board and see appended table 2.10.5 for other parts.	P
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices	Approved optocoupler with dti≥0.4mm used.	P
2.10.5.5.	Cemented joints	No such construction	N/A
2.10.5.6	Thin sheet material – General	Two layers insulation tape used for insulation of primary winding and secondary winding, each of which complies with the required electric strength test.	P
2.10.5.7	Separable thin sheet material	Insulation tape	P
	Number of layers (pcs)..... :	Reinforced Insulation - 2 layers	—
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		—
2.10.5.10	Thin sheet material – alternative test procedure	(see appended table 5.2)	P
	Electric strength test		—
2.10.5.11	Insulation in wound components	Approved triple insulated wire used as secondary winding of Transformer (T1)	P
2.10.5.12	Wire in wound components		P
	Working voltage ..... :		P
	a) Basic insulation not under stress ..... :		N/A
	b) Basic, supplementary, reinforced insulation ..... :	Wire complies to Annex U, three layers insulation.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	c) Compliance with Annex U .....:	Tubing used to relieve mechanical stress at crossover points	P
	Two wires in contact inside wound component; angle between 45° and 90° .....:	Tubing used to relieve mechanical stress at crossover points	P
2.10.5.13	Wire with solvent-based enamel in wound components	No such construction	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	No such construction	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 boards	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	No multi-layer PCB provided	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	No multi-layer PCB provided	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) .....:	Single layer PCB	N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.8	Tests on coated printed boards and coated components	No such boards and 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		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints	No such devices and joints	N/A
2.10.12	Enclosed and sealed parts	No hermetically sealed component	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Internal wires are UL recognized wiring which is PVC insulated, rated VW-1or FT-1, min. 105C, 600V and having gauge suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	The wire connected to PCB by soldering method and additionally fixed by glue	P
3.1.4	Insulation of conductors	The insulation of the individual conductors suitable for the application and the working voltage. For the insulation material see 3.1.1	P
3.1.5	Beads and ceramic insulators	Not used	N/A
3.1.6	Screws for electrical contact pressure	No such screws provided	N/A
3.1.7	Insulating materials in electrical connections	All current carrying connection are metal to metal	N/A
3.1.8	Self-tapping and spaced thread screws	Not used	N/A
3.1.9	Termination of conductors	All conductors are reliable secured	P
	10 N pull test		P
3.1.10	Sleeving on wiring	No sleeving used to provide supplementary insulation	N/A

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		P
3.2.1.2	Connection to a d.c. mains supply	Only a.c. mains supply.	N/A
3.2.2	Multiple supply connections	Only for one mains connection.	N/A
3.2.3	Permanently connected equipment	Unit is not permanently connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets	Approved Appliance inlet used	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.5	Power supply cords	See below.	N/A
3.2.5.1	AC power supply cords	Not provided	N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.5.2	DC power supply cords	AC Source.	N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards	No cord guards	N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—
	Radius of curvature of cord (mm) .....:		—
3.2.9	Supply wiring space	Not permanent connection or non-detachable power cord type.	N/A

3.3	**Wiring terminals for connection of external conductors**		P
3.3.1	Wiring terminals	Detachable power supply cords	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		P
	Rated current (A), cord/cable type, cross-sectional area (mm^2) .....:	See appended table 1.5.1	—
3.3.5	Wiring terminal sizes		P
	Rated current (A), type, nominal thread diameter (mm) .....:	See appended table 1.5.1	—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	Detachable power supply cords	P
3.4.2	Disconnect devices	Plug	P
3.4.3	Permanently connected equipment	Not such equipment	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment	Single phase equipment	N/A
3.4.8	Switches as disconnect devices	Single-polarity switch	N/A
3.4.9	Plugs as disconnect devices		P
3.4.10	Interconnected equipment	Not such equipment	N/A
3.4.11	Multiple power sources	Single power source	N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	This power supply is not considered for connection to TNV.	N/A
3.5.2	Types of interconnection circuits .....:	Interconnection circuits of SELV through the connector. No ELV interconnection circuits	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	N/A
3.5.4	Data ports for additional equipment	No such ports	N/A
4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability (stationary appliance)		P
	Angle of 10°	Mass>7kg.	N/A
	Test force (N) .....:		N/A
4.2	**Mechanical strength**		P
4.2.1	General	See below. After tests, unit complies with the requirements of sub-clauses 2.1.1 and 2.10.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N	No internal enclosure	N/A
4.2.4	Steady force test, 250 N	Applied on the rear plastic enclosure and metal enclosure. After tests, unit complies with 2.1.1, 2.6.1, 2.10.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	Impact test	500g steel ball falls freely from 1.3m on top, front, rear and bottom of enclosure, no access to hazardous parts.	P
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) .....:		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes	No CRT	N/A
	Picture tube separately certified .....:		N/A
4.2.9	High pressure lamps	No high pressure lamps	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) .....:	Not such 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) .....:		N/A
4.3.3	Adjustable controls	No such controls provided.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress	P
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment	Not such equipment.	N/A
	Torque .....:		—
	Compliance with the relevant mains plug standard .....:		N/A
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N/A
4.3.8	Batteries		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		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	No container for liquid or gas	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.12	Flammable liquids .....:	No such flammable liquids	N/A
	Quantity of liquid (l) .....:		N/A
	Flash point (°C) .....:		N/A
4.3.13	Radiation		P
4.3.13.1	General	See below	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		N/A
	Part, property, retention after test, flammability classification .....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....:		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class .....:		—
4.3.13.5.2	Light emitting diodes (LEDs)		P
4.3.13.6	Other types .....:		N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	No moving parts	N/A
4.4.2	Protection in operator access areas .....:		N/A
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations .....:		N/A
4.4.4	Protection in service access areas		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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Use of symbol or warning ……:		N/A
4.5	**Thermal requirements**		P
4.5.1	General	Equipment loaded with rated output current	P
4.5.2	Temperature tests		P
	Normal load condition per Annex L .....:		—
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 .....:	(see appended table 4.5.5)	P
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings		P
	Dimensions (mm) .....:		—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottomm, dimensions (mm) ..:		—
4.6.3	Doors or covers in fire enclosures	Door by interlock	P
4.6.4	Openings in 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		P
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks) .....:		—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	No excessive temperatures. No easily burning materials employed.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.1	General	Components and materials have adequate flammability classification. For details see table 1.5.1	P
4.7.3.2	Materials for fire enclosures		P
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	PCB rated V-0. See appended table 1.5.1 for details. Internal components except small parts are V-2 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filter provided	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		P
5.1.1	General	See sub-clauses 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	EUT has two mains connection.	P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	Only one main connection can use at a time	P
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Equipment of figure 5A used.	P
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	P
5.1.5	Test procedure	Applied.	P
5.1.6	Test measurements	See appended table 5.1.	P
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
	Measured protective conductor current (mA) .....:		—
	Max. allowed protective conductor current (mA) ..:		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		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		N/A
	a) EUT with earthed telecommunication ports .....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure	(see appended table 5.2)	P
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation		P
5.3.2	Motors		N/A
5.3.3	Transformers	(see appended Annex C)	P
5.3.4	Functional insulation .....:	By short-circuited, results see appended table 5.3	P
5.3.5	Electromechanical components	No such components	N/A
5.3.6	Audio amplifiers in ITE .....:	Not used	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	Not such equipment	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire or molten metal occurred and no deformation of enclosure during the tests	P
5.3.9.2	After the tests	Electric Strength tests performed after abnormal and fault tests.	P

IEC 60950-1			
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	(see appended table 5.2)	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	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A

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

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		**N/A**
7.1	General		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	(see appended table 5.2)	N/A
7.4.3	Impulse test	(see appended table 5.2)	N/A

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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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)		P
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)..... :		—
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) .....:		—

C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position .....:	T1	—
	Manufacturer .....:	(see appended table 1.5.1)	—
	Type .....:	(see appended table 1.5.1)	—
	Rated values .....:	Overcurrent protection	—
	Method of protection .....:	Overcurrent protection	—
C.1	Overload test	(see appended table 5.3)	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
C.2	Insulation	(see appended tables 5.2 and C2)	P
	Protection from displacement of windings .....:	By insulation tape, Bobbin or Triple insulated wire	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	Measuring instrument	Measuring instrument 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

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.6	Determination of minimum clearances .....:		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used .....:	The internal metal enclosure is made of mild steel, screw spring washer are made of Ni on steel, the combined electrochemical potential is below 0.6V according to Table J.1.	—
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	(see appended table 5.3)	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		P
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) .....:		—

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		N/A
	a) Preferred climatic categories .....:		N/A
	b) Maximum continuous voltage .....:		N/A
	c) Pulse current .....:		N/A
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)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
		See separate test report	—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		Triple insulation wire used.	—
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
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)**		P
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		N/A
CC.2	Test program 1……..:		N/A
CC.3	Test program 2……..:		N/A

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

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		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

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General		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

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

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])
Power cord	Shenzhen Baohing Electric Wire&Cable Manufacture Co., Ltd.	H03VV-F H03VVH2-F H05VV-F H05VVH2-F	AC 250V, 5A	EN 50525-2-11 VDE 0285-525	VDE 103727
Plug (EU)	Shenzhen HongPu Electron Co., Ltd.	XTH-005	AC 250 V, 16A	VDE 0620-1	VDE 40026370
Connector	Interchangeable	Interchangeable	AC 250 V, 10A	EN60320-1 UL 60320-1	VDE UL
AC inlet	Interchangeable	Interchangeable	AC 250 V, 10A	EN60320-1 UL 60320-1	VDE UL
Wood Enclosure (Power supply)	Interchangeable	Interchangeable	70℃, Min. thickness 4mm	EN 60950-1	Test with appliance
PCB	Interchangeable	Interchangeable	V-0, 130°C	UL94, UL796	UL
Switch	Interchangeable	Interchangeable	250Vac,6A	EN 61058-1 UL 61058-1	VDE UL
Fuse (AC inlet)	Interchangeable	Interchangeable	F5AL, 250Vac	EN 60127-1 EN 60127-3 UL 248	VDE UL
Fuse (F1)	XC Electronics (Shen Zhen) Corp. Ltd.	3T-series	T3.15A, 250Vac	EN 60127-1 EN 60127-3 UL 248	VDE 40019636 UL E221465
(Alternative)	Shenzhen Lanson Electronics Co., Ltd.	3K Series	T3.15A, 250Vac	EN 60127-1 EN 60127-3 UL 248	VDE 40010682 UL E221465
Thermistor (RT1)	Sam Kyung Ceramics Co	Interchangeable	min.3.0 A,min.1Ω,	UL 1434,	UL E200822
(Alternative)	Interchangeable	Interchangeable	min.3.0 A,min.1Ω,	UL 1434,	UL
Line filter (LF1) (Optional)	Shenzhen Fujia Appliance Co., Ltd	H13*7*5	N1 (pin 1-3): Φ0.60mm x15Ts N2 (pin 4-2): Φ0.60mm x15Ts, min. 1.5mH, 130°C	EN 60950-1	Test with appliance

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

Line filter (LF2) (Optional)	Shenzhen Fujia Appliance Co., Ltd	H16*12*8	N1 (pin 1-3): Φ0.55mm x 50Ts N2 (pin 4-2): Φ0.55mm x 50Ts min.12mH 130°C	EN 60950-1	Test with appliance
X2-Capacitor (CX1) (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co	MPX	Max. 0.47μF, Min.250Vac, 40/110/56, X2 type	IEC/EN 60384-14 UL 60384-14	TUVR 50136379 UL E208107
(Alternative)	Shenzhen Surong Capacitors Co Ltd	MPX/MKP	Max. 0.47μF, Min.250Vac, 40/110/56, X2 type	IEC/EN 60384-14 UL 60384-14	VDE 40008924 UL E246678
(Alternative)	Tenta Electric Industrial Co Ltd	MEX	Max. 0.47μF, Min.250Vac, 40/110/56, X2 type	IEC/EN 60384-14 UL 60384-14	VDE 123198 UL E222911
(Alternative)	Carli Electronics Co Ltd	MPX	Max. 0.47μF, Min.250Vac, 40/110/56, X2 type	IEC/EN 60384-14 UL 60384-14	VDE 40008520 UL E120045
(Alternative)	Dain Electronics Co Ltd	MPX	Max. 0.47μF, Min.250Vac, 40/110/56, X2 type	IEC/EN 60384-14 UL 60384-14	VDE 40018798 UL E147776
Bleeder resistor (R2, R3)	Interchangeable	Interchangeable	Min.1.0M ohm, minimum1/4W	EN 60950-1	Test with appliance
Varistor (RV1) (Optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	STE-10D471K, STE-10D511K, STE-14D471K, STE-14D511K,	Min. 300V ac, 85°C, coating V-0	IEC/EN 61051-1 UL 1449	VDE 40023049 UL E330837
(Alternative)	Lien Shun Technical Co Ltd	10D471K, 10D511K, 14D471K, 14D511K	Min. 300V ac, 85°C, coating V-0	IEC/EN 61051-1 UL 1449	VDE 40005858, UL E315524
(Alternative)	Centra Science Corp	CNR-10D471K, CNR-10D511K, CNR-14D471K, CNR-14D511K	Min. 300V ac, 85°C, coating V-0	IEC/EN 61051-1 UL 1449	VDE 40008220 UL E316325
(Alternative)	Success Electronics Co Ltd	SVR-10D471K, SVR-10D511K, SVR-14D471K, SVR-14D511K	Min. 300V ac, 85°C, coating V-0	IEC/EN 61051-1 UL 1449	VDE123677 UL E330256
Bridge diode (BD1)	Interchangeable	Interchangeable	Min.4A, min.600Vac.	EN 60950-1	Test with appliance
Ripple capacitor (C1)	Interchangeable	Interchangeable	47-120μF, 400 or 450Vdc,105°C	EN 60950-1	Test with appliance

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

Transistor (Q1)	Interchangeable	Interchangeable	Min.4A, min.600Vac.	EN 60950-1	Test with appliance
Bridge capacitor (CY1,CY2,CY3) (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD	Max. 2200pF, min. 250Vac, 25/125/21, Y1 type	IEC 60384-14 UL 60384-14	VDE 40025754 UL E208107
(Alternative)	Dongguan Easy-Gather Electronic Co Ltd	DCF	Max. 2200pF, min. 250Vac, 25/125/21, Y1 type	IEC 60384-14 UL 1414 UL 60384-14	VDE 40022942 UL E252221
(Alternative)	Murata Mfg Co Ltd	KX	Max. 2200pF, min. 250Vac, 25/125/21, Y1 type	IEC/EN 60384-14	VDE 40002831 UL E37921
Optocoupler (U2)	Bright Led Electronics Corp.	BPC-817	Ex.Cr≥ 8.0mm, Ex.Cl≥ 8.0mm, DTI≥ 0.4mm, 110°C	EN 60747-5-5 UL1577	VDE 40007240 UL E236324
(Alternative)	Everlight Electronics Co Ltd	EL817	Ex.Cr≥ 8.0mm, Ex.Cl≥ 8.0mm, DTI≥ 0.4mm, 110°C	EN 60747-5-5 UL1577	VDE 132249 UL E214129
(Alternative)	Lite-On Technology Corp	LTV-817	Ex.Cr≥ 8.0mm, Ex.Cl≥ 8.0mm, DTI≥ 0.4mm, 115°C	EN 60747-5-5 UL1577	VDE40015248 UL E113898
(Alternative)	Cosmo Electronics Corp	KP1010	Ex.Cr≥ 8.0mm, Ex.Cl≥ 8.0mm, DTI≥ 0.4mm, 110°C	EN 60747-5-5 UL1577	VDE101347 UL E169586
Transformer (T1)	Shenzhen Fujia Appliance Co., Ltd.	2006-T2(for output voltage 10.5-15.0V)	Class B	IEC 90950-1	Test with appliance
- Bobbin	Sumitomo Bakelite Co. Ltd	PM-9820, PM-9630	Phenolic, V-0,150°C, Min. thickness 0.51mm	UL 94	UL E41429
(Alternative)	Chang Chun Plastics	T375J, T373J	Phenolic, V-0,150°C, Min. thickness 0.51mm	UL 94	UL E59481
- Secondary Triple insulated wire	WONDERFUL HI-TECH CO LTD	TIW-B	130°C	UL 2353 UL60601-1	UL E239958
(Alternative)	TOTOKU ELECTRIC CO LTD	TIW-E, 3S-ETFE, TIW-ESB, 3S-ETFESB	155℃	UL 2353 UL60601-1	UL E166483

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

(Alternative)	RUBADUE WIRE CO INC	TCA3, TCA3-AA-SB-X	155°C	UL 2353 UL60601-1	UL E206198
- Magnet wire	JIANGXI B-ENERGY SHANGRAO WIRE CO LTD	2UEW	130°C	UL 1446	UL E229727
(Alternative)	TAI-I ELECTRIC WIRE & CABLE CO LTD	UEW	130°C	UL 1446	UL E85640
(Alternative)	CHENG DU SOUTH-WEST ELECTRIC LTD CO	QA	155°C	UL 1446	UL E178366
-Tube	Great Holding Industrial Co Ltd	TFL, TFS, TFT	200°C VW-1, 600V	UL 224	UL E156256
(Alternative)	Fluo Tech Industries Co Ltd	TFL, TFS, TFT	200°C, VW-1, 600V	UL 224	UL E175982
(Alternative)	Zeus Industrial Products Inc	TFE-LW-150, TFE-TW-300, TFE-SW-600	200°C, VW-1, 600V	UL 224	UL E64007
- Insulation tape	3M Corp	1350F-1, 1350-1	130°C	UL 510	UL E17385
(Alternative)	Jinjiang Yahua Sticking Tape Co Ltd	PZ, CT	130°C	UL 510	UL E165111
(Alternative)	P Leo & Co (B C) Ltd	1P801, 1P802	130°C	UL 510	UL E200050
-Varnish	Hitachi Chemical Co	WP-2952F-2G	130°C	UL 1446	UL E72979
(Alternative)	Elantas Electrical Insulation Elantas Pdg Inc	468-2+	200°C	UL 1446	UL E87039
Supplementary information:					

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

1.5.1	TABLE: Opto Electronic Devices	P

Manufacturer ..... :	See appended table 1.5.1.
Type..... :	
Separately tested ..... :	See appended table 1.5.1.
Bridging insulation ..... :	
External creepage distance..... :	See appended table 1.5.1.
Internal creepage distance..... :	Reinforced See appended table 1.5.1.
Distance through insulation..... :	
Tested under the following conditions..... :	See appended table 1.5.1.
Input..... :	
Output..... :	See appended table 1.5.1.

supplementary information
Refer to table 1.5.1

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90/50Hz	0.261	--	13.8	F1	0.261	Normal operation
90/60Hz	0.262	--	13.7	F1	0.262	Normal operation
100/50Hz	0.259	1.5	13.8	F1	0.259	Normal operation
100/60Hz	0.261	1.5	13.9	F1	0.261	Normal operation
240/50Hz	0.141	1.5	13.9	F1	0.141	Normal operation
240/60Hz	0.145	1.5	14.2	F1	0.145	Normal operation
264/50Hz	0.138	--	14.2	F1	0.138	Normal operation
264/60Hz	0.139	--	14.3	F1	0.139	Normal operation
Supplementary information:						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test	N/A

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
--	--	--	--	--
supplementary information:				

2.1.1.5 c) 2)	TABLE: stored energy	N/A

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

Capacitance C (μF)	Voltage U (V)	Energy E (J)
supplementary information:		

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	
T1 secondary pin 9-F	12.39	--	--
	--	--	--

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
--	--
--	--
supplementary information:	
Test voltage: 240V, 60Hz	

2.5	TABLE: limited power sources						N/A
Circuit output tested:							
Measured Uoc (V) with all load circuits disconnected:							
Measuring position	Test condition (Single fault)	Uoc (V)	I_{sc} (A)		VA		
			Meas.	Limit	Meas.	Limit	
--	--	--	--	--	--	--	
Supplementary information: S-c=Short circuit, O-c=Open circuit							

2.10.2	Table: working voltage measurement	P

Location	RMS voltage (V)	Peak voltage (V)	Comments
T1 pin 1-9	212	356	
T1 pin 1-F	215	364	
T1 pin 3-9	215	412	
T1 pin 3-F	212	360	
T1 pin 4-9	204	344	
T1 pin 4-F	205	396	
T1 pin 6-9	261	504	Maximum Vrms and Maximum Vpeak

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

T1 pin 6-F	245	496	
U2 pin 1-3	219	364	
U2 pin 1-4	218	362	
U2 pin 2-3	219	363	
U2 pin 2-4	217	361	
CYI	201	344	
CY2	189	335	
CY3	192	338	
supplementary information:			

2.10.3 and 2.10.4	**TABLE: Clearance and creepage distance measurements**					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Primary traces of different polarity before fuse F1	<420	<250	1.5	5.0	2.5	5.0
Primary traces under fuse F1	<420	<250	1.5	3.2	2.5	3.2
L/N to metal enclosure	<420	<250	2.0	4.1	5.0	>10
primary PCB to metal enclosure	<420	<250	2.0	4.1	5.0	>10
CY1 primary trace to earthed trace	<420	<250	4.0	7.7	5.0	7.7
CY2 primary trace to earthed trace	<420	<250	4.0	5.4	5.0	5.4
CY3 primary trace to earthed trace	<420	<250	4.0	5.4	5.0	5.4
Supplementary information: Transformer (T1, T2, T3) Core is considered as floating, Transformer (T12) Core is considered as primary.						

2.10.5	**TABLE: Distance through insulation measurements**				N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Phtocoupler (U2)	<420	<250	3000	0.4	*
Insulation sheet (between PWB and Bottom enclosure)	<420	<250	1500	--	*
Silicone tube (LF2 used)	<420	<250	1500	--	*
Supplementary information:					

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

4.3.8	TABLE: Batteries									N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available										
Is it possible to install the battery in a reverse polarity position?										N/A
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	--	--	--	--	--	--	--	--	--	
Max. A during fault condition	--	--	--	--	--	--	--	--	--	
Max. A during fault condition	--	--	--	--	--	--	--	--	--	
Max. A during fault condition	--	--	--	--	--	--	--	--	--	
Test results:										Verdict
- Chemical leaks										--
- Explosion of the battery										--
- Emission of flame or expulsion of molten metal										--
- Electric strength tests of equipment after completion of tests										--
Supplementary information:										

4.3.8	TABLE: Batteries	N/A
Battery category.....: --		
Manufacturer.....: --		
Type / model .....: --		
Voltage.....: --		
Capacity.....: --		
Tested and Certified by (incl. Ref. No.).....: --		
Circuit protection diagram: --		

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	

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

Language(s) ……..:	
Close to the battery ……..:	
In the servicing instructions ……..:	
In the operating instructions ……..:	

4.5	**TABLE: Thermal requirements**					P
	Supply voltage (V)	90V/60Hz	Shift to 50℃	264V/60Hz	Shift to 50℃	—
	Ambient T_{min} (°C)	--	--	--	--	—
	Ambient T_{max} (°C)	See below	See below	See below	See below	—
Maximum measured temperature T of part/at::		T (°C)				Allowed T_{max} (°C)
AC inlet		26.8	52.5	26.9	52.2	70
Switch		27.6	53.3	27.4	52.7	60
Input wire		29.8	55.5	30.0	55.3	80
RV1 body		36.6	62.3	36.7	62.0	85
LF1 coil		37.3	63.0	37.3	62.6	85
CX1 body		37.4	63.1	37.7	63.0	75
PCB near RT1		37.4	63.1	37.4	62.7	85
L1 coil		37.7	63.4	38.1	63.4	85
PCB near D4A		43.1	68.8	44.5	69.8	85
C6 body		41.7	67.4	42.5	67.8	70
PCB near U3		41.6	67.3	42.6	67.9	85
CY1 body		40.9	66.6	41.7	67.0	85
PCB near BD1		44.9	70.6	44.9	70.2	85
C1 body		40.7	66.4	40.7	66.0	70
LF2 coil		40.1	65.8	40.1	65.4	85
T1 core		30.6	56.3	30.9	56.2	Ref.
T1 coil;		44.7	70.4	46.6	71.9	75
U2 body		41.5	67.2	43.8	69.1	85
PCB near Q1		39.4	65.1	40.3	65.6	85
Output wire		37.4	63.1	37.8	63.1	70
C7 body		40.3	66.0	40.7	66.0	70
Wood enclosure		26.3	52.0	26.1	51.4	60
Ambient		24.3	50.0	24.7	50.0	--
Supplementary information:						

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

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

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) ..... :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
CON1	125	1.1
Supplementary information:		

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Supplementary information: see table 1.5.1					

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Enclosure(power supply) with metal foil and GND	0.005/0.005 (Normal/Reverse)	0.25	System on, switch “e” Open	
Supplementary information:				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
L/N to Metal enclosure(power supply)	DC	1500	No	
Primary circuit to secondary circuit	DC	3000	No	
Insulation tape	DC	3000	No	
Supplementary information:				

5.3	TABLE: Fault condition tests	P

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

	Ambient temperature (°C) .....:	See below	—
	Power source for EUT: Manufacturer, model/type, output rating .....:	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
BD1	S-C	240	1s	F1	0	Fuse opened, no hazards.
C1	S-C	240	1s	F1	0	Fuse opened, no hazards.
Q1 S-G	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
Q1 D-S	S-C	240	10min	F1	0	Fuse opened, no hazards.
Q1 D-G	S-C	240	10min	F1	0	Fuse opened, no hazards.
U2 pin 1-2	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
U2 pin 3	O-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
T1 pin 1-3	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
T1 pin 4-6	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
T1 pin 6-8	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
C7	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
C5	S-C	240	10min	F1	0.008	Unit shut down immediately, no damage, no hazards
Transformer output	Overload	240	3hrs 46mins	F1	0.138 to 0.292 to 0.428 to 0.04	The Max. loading to 5A, unit shut down when the loading to 6A, NB, NT, NC T1 coil: 122.0°C; T1 core: 116.3 °C; Ambient: 26.3°C
Supplementary information: In fault column, where s-c=short-circuited, o-l= over-loaded, o-c= open-circuited.						

C.2	TABLE: transformers	P

Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)

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

T1 Transformer primary winding to secondary winding	reinforced insulation	504	261	3000V	4.7	5.3	Min. 0.4mm
T1 Transformer secondary to core	reinforced insulation	504	261	3000V	4.7	5.3	Min. 0.4mm
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1 Transformer primary winding to secondary winding	Reinforced insulation			3000V	5.1	6.2	secondary winding: triple insulation wire
T1 Transformer secondary to core	Reinforced insulation			3000V	5.1	6.2	secondary winding: triple insulation wire
supplementary information:							

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Information technology equipment – Safety –

Part 1: General requirements

Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No.....:	EU_GD_IEC60950_1F
Attachment Originator .....:	SGS Fimko Ltd
Master Attachment.....:	Date 2014-02

EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013– CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note 4.7.3.1Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6.2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note 6.1.2.1 Note 2 6.2.2.1 Note 2 EE.3 Note		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the "country" notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	**Replace** the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		P
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		N/A
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	Added	P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	standard and amendments.		

	Zx Protection against excessive sound pressure from personal music players		N/A
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A
	analogue personal music players (personal		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods."  **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		

	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA.		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		
	Zx.4.3 Wireless listening devices In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		P
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;		
	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Deleted	N/A
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75 [a] | Over 6 up to and including 10| (0,75) [b] 1,0 | Over 10 up to and including 16| (1,0) [c] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a]. In NOTE 1, applicable to Table 3B, delete the second sentence.	Replaced	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		N/A
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	4 | Delete the fifth line: conductor sizes for 13 to 16 A		
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		—

ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**	—

ZB	**SPECIAL NATIONAL CONDITIONS (EN)**		—
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1 (A11:2009)	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	Not checked	N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	No such construction	N/A
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”		N/A
1.7.2.1 (A11:2009)	In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard.		

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."		
	NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet." Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."		N/A
1.7.2.1 (A2:2013)	In **Denmark**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in **Denmark** shall be as follows: In **Denmark**: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."		N/A
1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		
1.7.5 1.7.5 (A11:2009)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N/A
1.7.5 (A2:2013)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c		N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	No TNV	N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 , 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998:Plug Type 21, L+N, 250 V, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE 250 V, 16 A		N/A
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A
3.2.1.1 (A2:2013)	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c		
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON;	Not exceed 3.5mA	N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	• STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	No TNV	N/A
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1;		N/A

European group differences and national differences of IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.	No TNV	N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.	Not connected to cable distribution system	N/A
7.3	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.	Not connected to cable distribution system	N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.	Not connected to cable distribution system	N/A

Pictures

Fig. 1 -- Overview 1

Fig. 2 -- Overview 2

Pictures

Fig. 3 -- Overview 3

Fig. 4 -- Inside view 1

Pictures

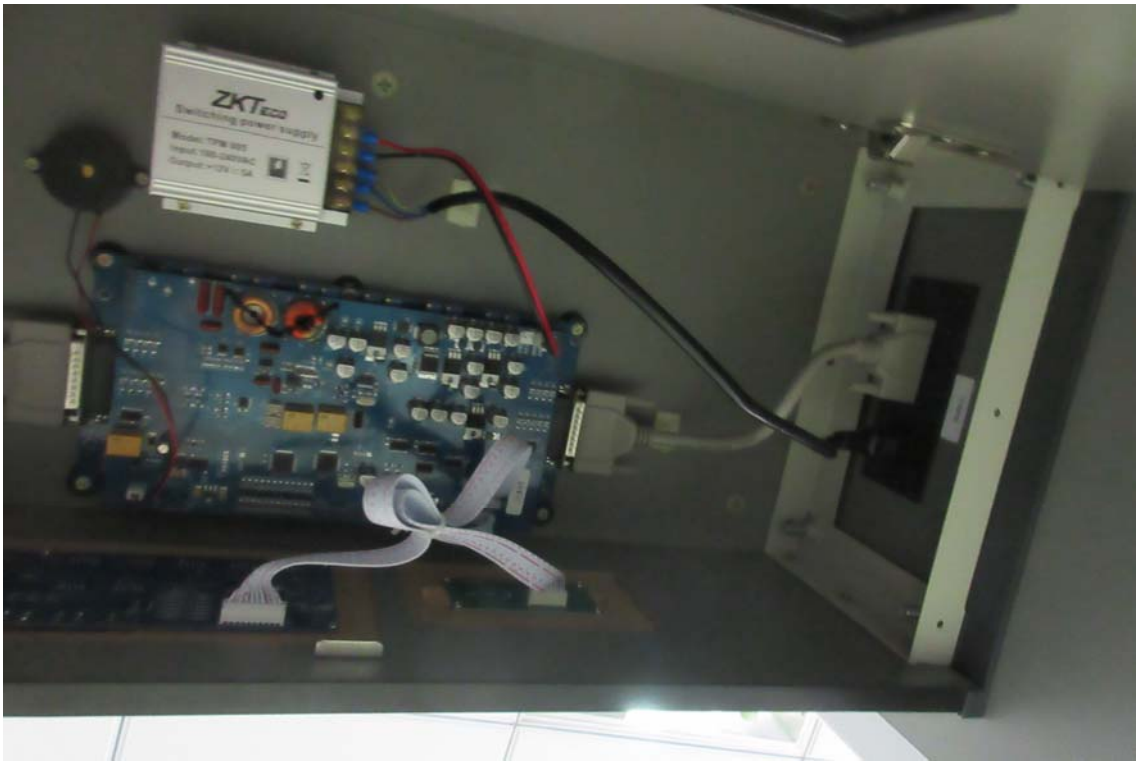


Fig. 5 -- Inside view 2

Fig.6 -- Inside view 3

Pictures

Fig.7 -- Inside view 4

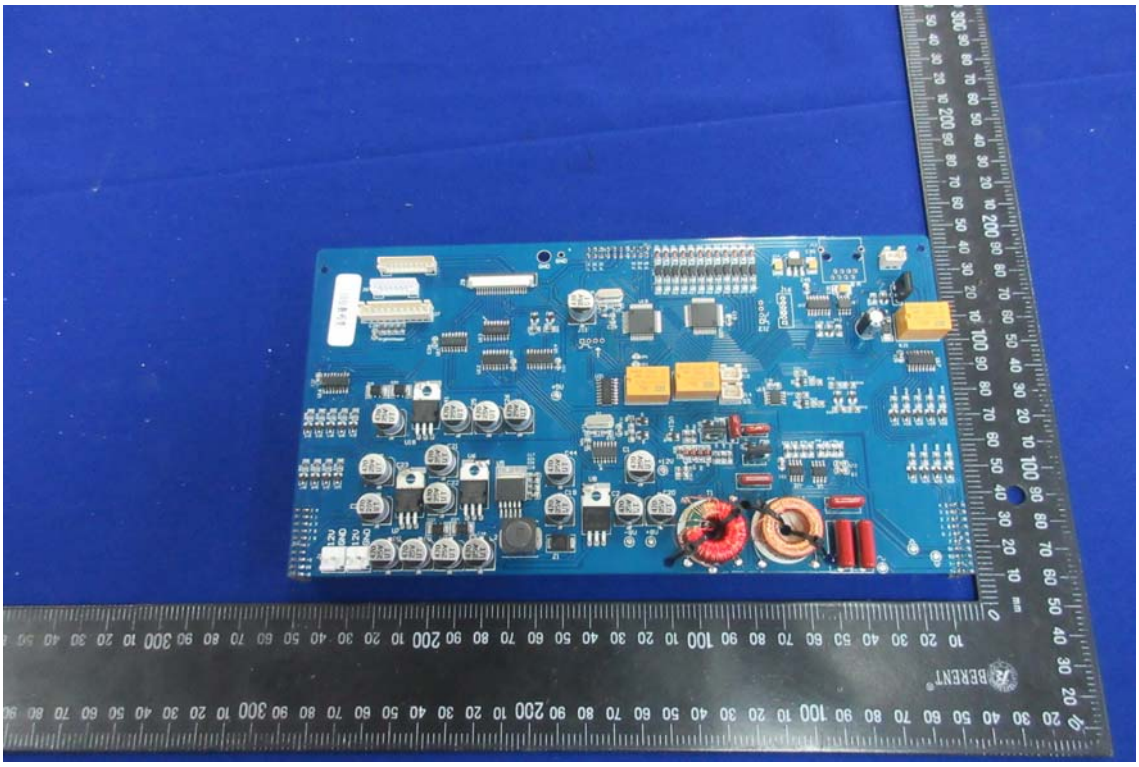


Fig.8 – Main PCB view 1

Pictures

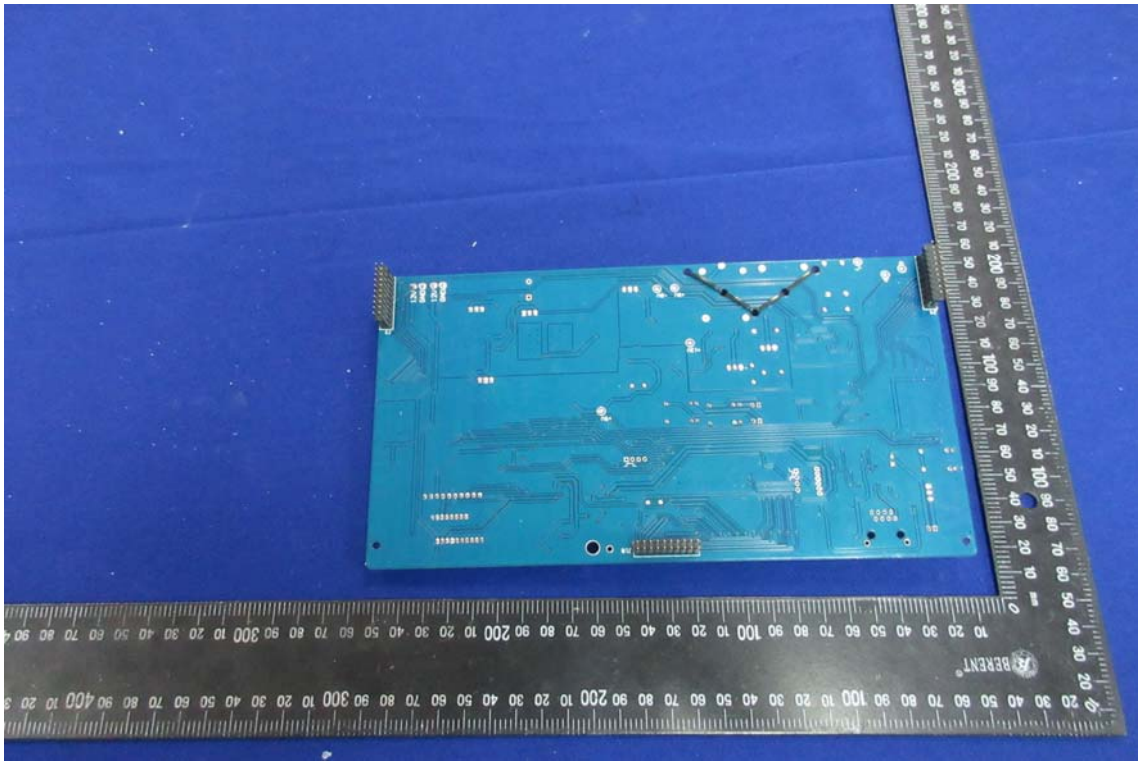


Fig.9 -- Main PCB view 2

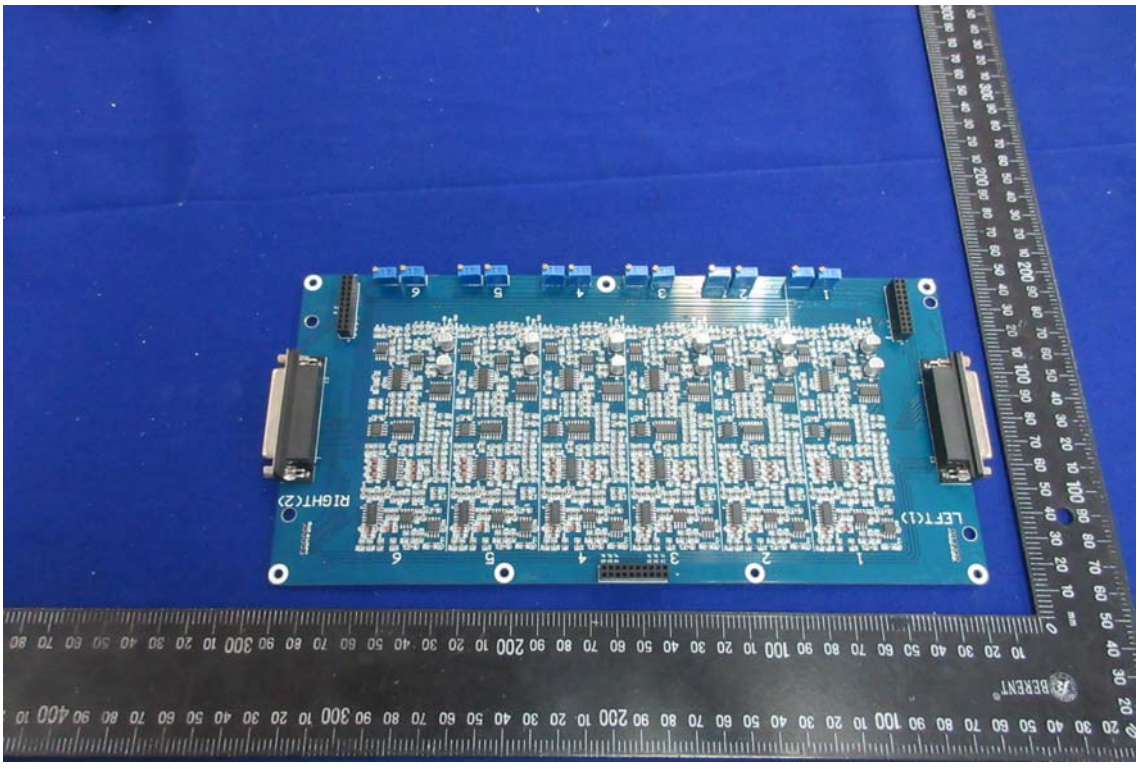


Fig.10 – Control PCB view 1

Pictures

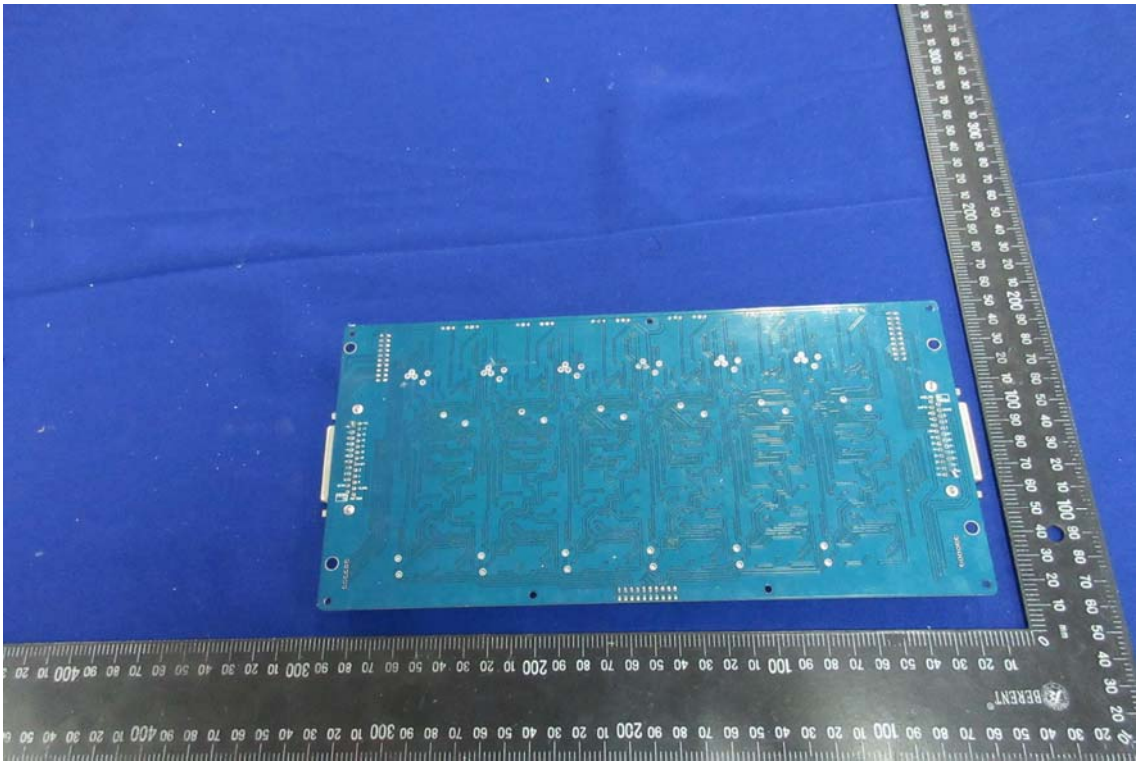


Fig.11 –Control PCB view 2

Fig.12 – LED PCB view 1

Pictures

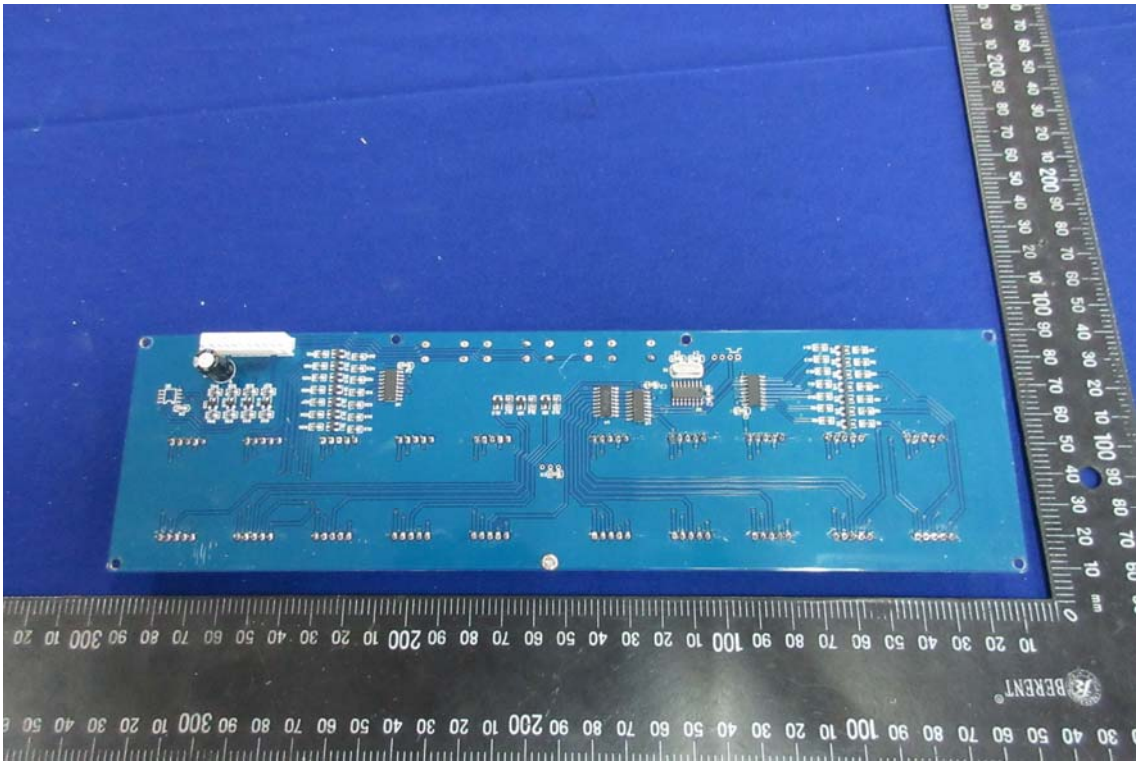


Fig.13 – LED PCB view 2

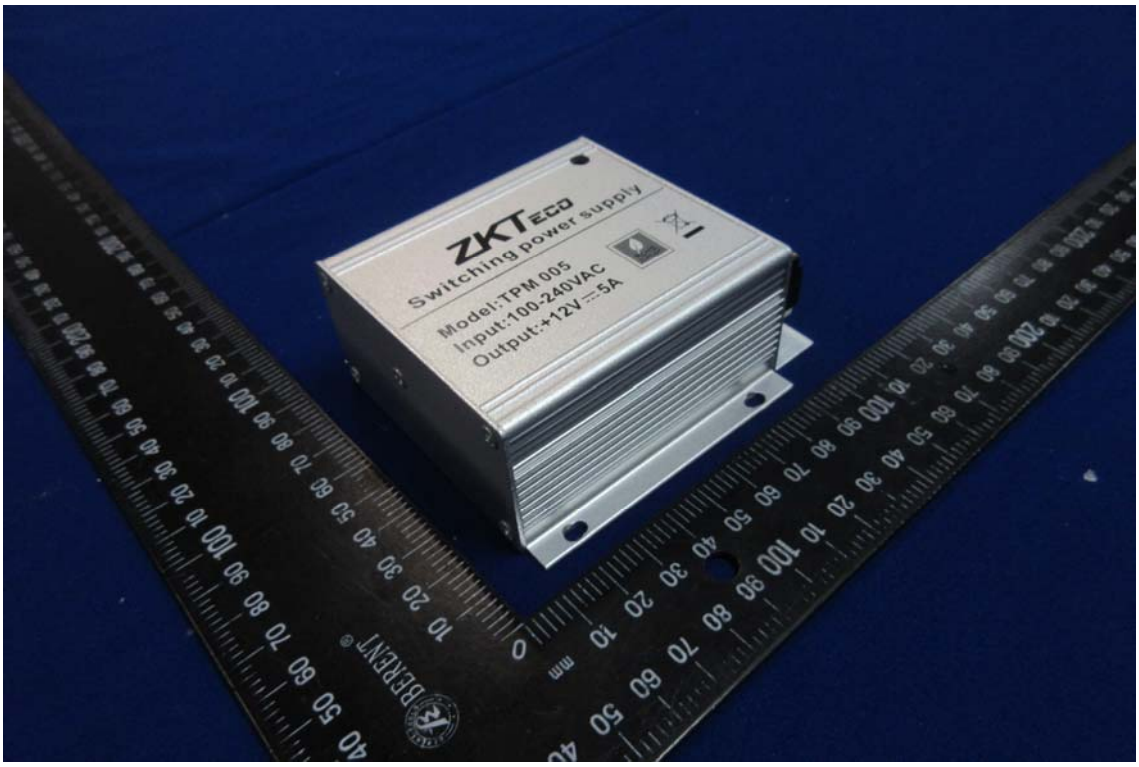


Fig.14 – Power view 1

Pictures

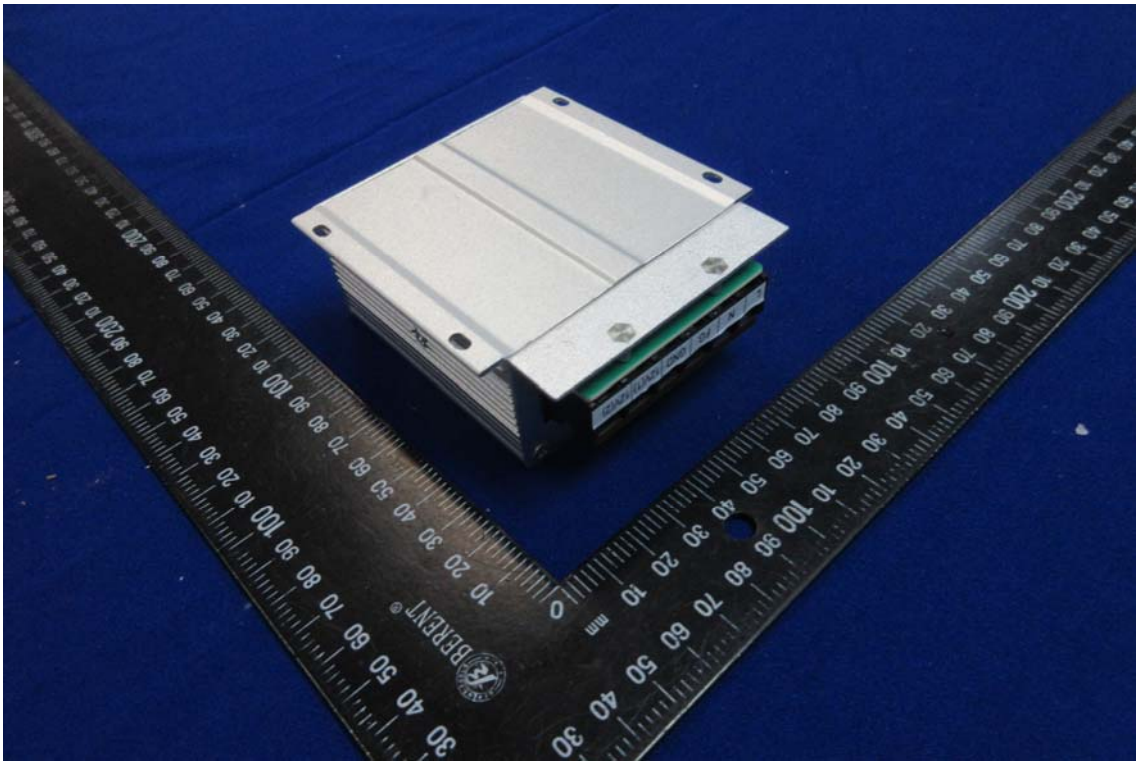


Fig.15 – Power view 2

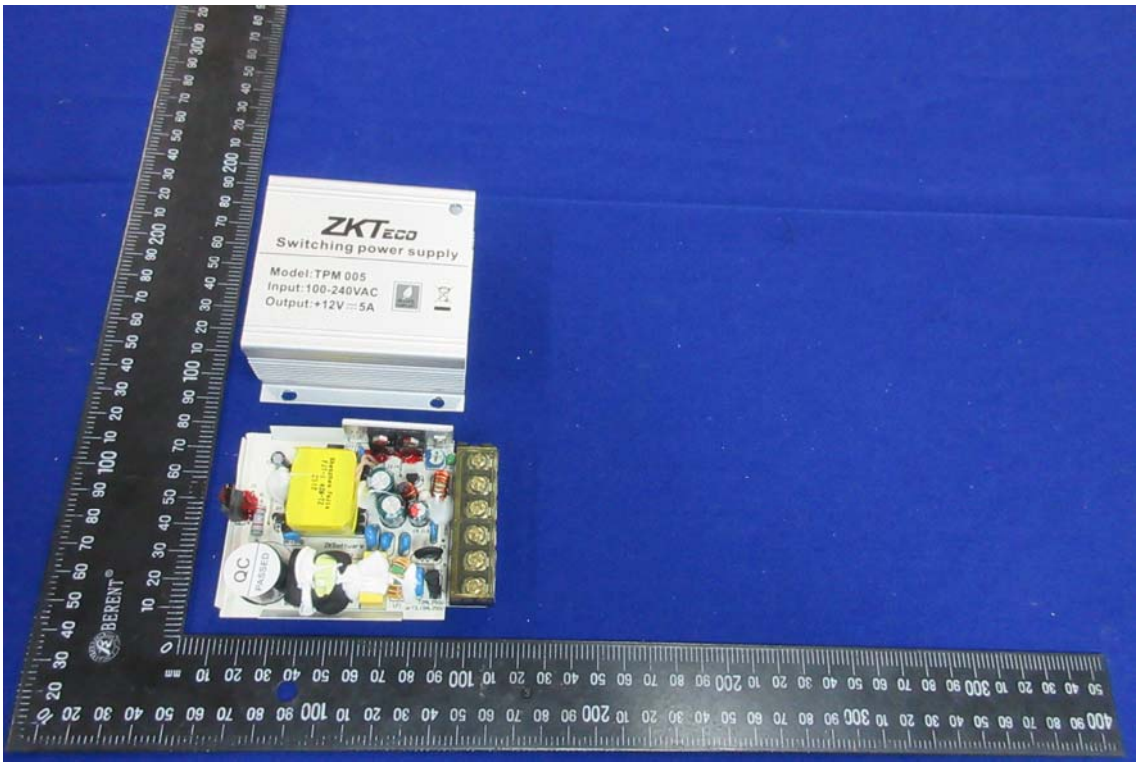


Fig.16 – Power inside view

Pictures

Fig.17 – Power PCB view 1

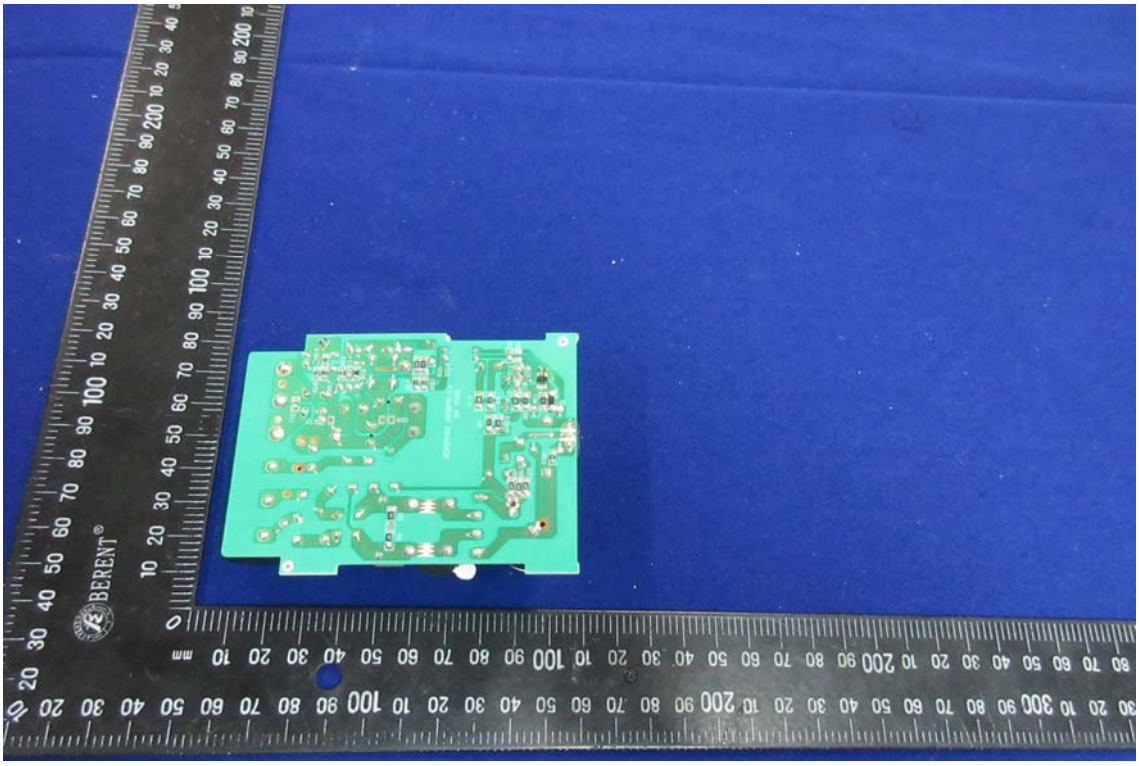


Fig.18 – Power PCB view 2