TEST REPORT
EN 60950-1
Information technology equipment – Safety – Part 1: General requirements

Report Reference No. ..... :	B-S180818717
Tested by (printed name and signature) .....:	Rocky
Checked by (printed name and signature) .....:	Apollo
Approved by (printed name and signature) .....:	Bruce
Date of issue ..... :	Aug.13, 2018
Testing laboratory Name..... :	Beide (Shenzhen) Product Service Limited
Address ..... :	6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China
Report body .....:	Beide (Shenzhen) Product Service Limited
Address(China) ..... :	6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China
Applicant's Name .....:	Noor Al Hayat Computer Tr LLC
Address ..... :	Mohammed Al mulla Tower,Office No. 1007,Near Ansar Mall, Sharjah, UAE
Client No.....:	09716942
Test specification	
Standard..... :	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
Test procedure ..... :	CE-scheme
Non-standard test method ..... :	N.A.
Test item Description ..... :	Power supply
Trademark..... :	N/A
Model and/or type reference ..... :	Tortox BX600, Tortox BX700
Manufacturer ..... :	Guangzhou Aojie Science & Technology Co.,Ltd.
Address ..... :	No.18 Gaozeng Industrial Park,Fanghua Road East, Renhe, Baiyun, Guangzhou,Guangdong,China
Rating(s)..... :	Input: 110-240V~, 47-63Hz, 600W (Tortox BX600)

Particulars: test item vs. test requirements	
Equipment mobility ..... :	For building-in
Operating condition..... :	Continuous
Mains supply tolerance (%) ..... :	+6%/-10%
Type of AC power distribution systems ..... :	TN, TT power distribution systems
IT testing, phase-phase voltage (V) :	Single phase
Class of equipment ..... :	Class I
Protection against ingress of water ..... :	IP20
Test case verdicts	
Test case does not apply to the test object :	N/A
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement ... :	F(ail)
Testing	
Date of receipt of test item ..... :	Aug.02,2018
Date(s) of performance of test ..... :	Aug.02-13,2018

General remarks

The test result presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.
Throughout this report a comma (point) is used as the decimal separator.

General product information:

Power supply for built-in, Class I equipment which is used for information technology equipment.

Unless otherwise specified, the model Tortox BX600 was selected as representative model to perform all tests.

Copy of marking plate

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

Power Supply
Model: Tortox BX600
Input: 110-240V~, 47-63Hz, 600W

Noor Al Hayat Computer Tr LLC
Add: Mohammed Al mulla Tower,Office No. 1007,Near Ansar Mall, Sharjah, UAE

The height of the letters is not less than 2mm, Height of WEEE mark at least 7mm, and height of other marks at least 5mm.

The label above is representative; other models are the same except the model names and wattage.

EN 60950-1			
Clause	Requirement – Test	Result - Remark	Verdict
1	**GENERAL**		**P**
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950 or relevant component standard		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 such components.	N
1.5.4	Transformers	The internal transformer meets the requirements of this standard including the Annex C.	P
1.5.5	Interconnecting cables		P
1.5.6	Capacitors in primary circuits	X, Y capacitor were comply with IEC/EN 60384-14	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional insulation, basic insulation or supplementary insulation	Functional insulation only	P
1.5.7.2	Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and other circuits		N
1.5.7.3	Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and circuits connected to an antenna or coaxial cable		N
1.5.8	Components in equipment for IT power systems	No such equipment	N
1.5.9	Surge suppressors		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		P
1.5.9.4	Bridging of basic insulation by a VDR		N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N
1.6	Power interface		P
1.6.1	AC power distribution systems	TN, TT	P
1.6.2	Input current	(see appended table 1.6.2)	P

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Clause	Requirement – Test	Result - Remark	Verdict
1.6.3	Voltage limit of hand-held equipment	No hand-held equipment	N
1.6.4	Neutral conductor		P
1.7	Marking and instructions		P
1.7.1	Power rating		P
	Rated voltage(s) or voltage range(s) (V)	110-240V	P
	Symbol for nature of supply, for d.c. only		N
	Rated frequency or rated frequency range (Hz) .	47-63Hz	P
	Rated current (mA or A)		P
	Manufacturer's name or trademark or identification mark	Guangzhou Aojie Science & Technology Co.,Ltd.	P
	Type/model or type reference		P
	Symbol of Class II equipment only	Class I equipment	N
	Other symbols	Additional symbol or marking does not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	No such disconnect devices	N
1.7.2.3	Overcurrent protective devices	No such devices	N
1.7.2.4	IT power distribution systems	TN power system	N
1.7.2.5	Operator access with a tool	No such access	N
1.7.2.6	Ozone	No produce ozone	N
1.7.3	Short duty cycles	For continuous operation	N
1.7.4	Supply voltage adjustment	Single input voltage range without adjustment.	N
1.7.5	Power outlets on the equipment	No standard socket-outlet.	N
1.7.6	Fuse identification	F1 marked, Fusing characteristics refer to Instructions	P
1.7.7	Wiring terminals		N
1.7.7.1	Protective earthing and bonding terminals		N
1.7.7.2	Terminal for a.c. mains supply conductors	Approved AC inlet used	N
1.7.7.3	Terminals for d.c. mains supply conductors		N
1.7.8	Controls and indicators		P
1.7.8.1	Identification, location and marking	"I", "O" marked on mains switch	P
1.7.8.2	Colours		N
1.7.8.3	Symbols according to IEC 60417	See above	P

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Clause	Requirement – Test	Result - Remark	Verdict
1.7.8.4	Markings using figures		N
1.7.9	Isolation of multiple power sources	Not for multiple power sources	N
1.7.10	IT power distribution systems	Not for connection to IT power systems	N
1.7.11	Thermostats and other regulating devices	No such devices	N
1.7.12	Language	Markings and user manual in English	--
1.7.13	Durability	The label was subjected to the durability 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 nor lifting of the label edge.	P
1.7.14	Removable parts		N
2	**PROTECTION FROM HAZARDS**		**P**
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Built-in equipment, considered in end use product	N
2.1.1.1	Access to energized parts		N
	Test by inspection	Built-in equipment, considered in end use product	N
	Test with test finger	Ditto.	N
	Test with test pin	Ditto.	N
	Test with test probe	No TNV circuit.	N
2.1.1.2	Battery compartments	There are no battery compartments	N
2.1.1.3	Access to ELV wiring	There are no accessible ELV wiring	N
	Working voltage (V); minimum distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring	There is no access to hazardous voltage circuits	N
2.1.1.5	Energy hazards	Built-in component, considered in end system	P
2.1.1.6	Manual controls	There are no manual controls	N

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Clause	Requirement – Test	Result - Remark	Verdict
2.1.1.7	Discharge of capacitors in equipment		P
	Time-constant (s); measured voltage (V).....	16V after 1s, limited: 132V	—
2.1.1.8	Energy hazards - d.c. mains supplies	AC mains	N
2.1.1.9	Audio amplifiers in information technology equipment	No audio amplifiers	N
2.1.2	Protection in service access areas	There are no service access areas	N
2.1.3	Protection in restricted access locations	Not for such areas	N
2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V)	Within SELV limits.	P
2.2.3	Voltages under fault conditions (V)	Within SELV limits.	P
2.2.4	Connection of SELV circuits to other circuits	Connect to SELV circuits only.	P
2.3	TNV circuits		N
2.3.1	Limits	No TNV circuits.	N
	Type of TNV circuits.....		—
2.3.2	Separation from other circuits and from accessible parts		N
	Insulation employed.....		—
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed.....		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed.....		—
2.3.5	Test for operating voltages generated externally		N
2.4	Limited current circuits		P
2.4.1	General requirements		P
2.4.2	Limit values	0.7mA	P
	Frequency (Hz).....	60Hz	—
	Measured current (mA)	0.23	—
	Measured voltage (V)	3.6	—

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Clause	Requirement – Test	Result - Remark	Verdict
	Measured capacitance (μF).....	2200pF	—
2.4.3	Connection of limited current circuits to other circuits	Connect to SELV circuits only.	P
2.5	Limited power sources		N
	Inherently limited output		N
	Impedance limited output		N
	Overcurrent protective device limited output		N
	Regulating network limited output under normal operating and single fault condition		N
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N
	Output voltage (V), output current (A), apparent power (VA) .....:		N
	Current rating of overcurrent protective device (A)		N
2.6	Provisions for earthing and bonding		P
2.6.1	Protective earthing		P
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General		P
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area (mm^2), AWG.....		—
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm^2), AWG.....		—
2.6.3.4	Resistance (Ω) of earthing conductors and their terminations, test current (A).....	0.05Ω	P
2.6.3.5	Colour of insulation.....	Green and yellow	P
2.6.4	Terminals	Comply with 2.6.3.4	P
2.6.4.1	General		P
2.6.4.2	Protective earthing and bonding terminals		P
	Rated current (A), type and nominal thread diameter (mm).....		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N

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Clause	Requirement – Test	Result - Remark	Verdict
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		P
2.6.5.3	Disconnection of protective earth	Approved AC inlet	P
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		P
2.6.5.7	Screws for protective bonding		P
2.6.5.8	Reliance on telecommunication network or cable distribution system		N
2.7	Overcurrent and earth fault protection in primary circuits		P
2.7.1	Basic requirements	Primary fuse as the part of the equipment	P
	Instructions when protection relies on building installation		N
2.7.2	Faults not covered in 5.3		N
2.7.3	Short-circuit backup protection		P
2.7.4	Number and location of protective devices .....:	Primary fuse located on the PCB	P
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel.....:		N
2.8	Safety interlocks		N
2.8.1	General principles	No safety interlocks	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm) ..... :		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

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Clause	Requirement – Test	Result - Remark	Verdict
2.9	Electrical insulation		P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	120hours	P
	Humidity (%) ..... :	93%	—
	Temperature (°C) ..... :	26.5°C	—
2.9.3	Grade of insulation		P
2.9.4	Separation from hazardous voltages		P
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See 2.10.3, 2.10.4, 2.10.5	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	Considered.	P
2.10.1.4	Intervening unconnected conductive parts	Considered.	P
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements		N
2.10.1.7	Insulation in circuits generating starting pulses		N
2.10.2	Determination of working voltage	.	P
2.10.2.1	General	.	P
2.10.2.2	RMS working voltage	Considered.	P
2.10.2.3	Peak working voltage	Considered.	P
2.10.3	Clearances	See below.	P
2.10.3.1	General	Considered.	P
2.10.3.2	Clearances in primary circuit	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.3	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Measurement of transient voltage levels	Equipment is not subject to transient voltages	N
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from an a.c. mains supply		N
2.10.3.7	Transients from a d.c. mains supply		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N
2.10.3.9	Measurement of transient voltages		N
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P

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Clause	Requirement – Test	Result - Remark	Verdict
	CTI tests .....:	Material group IIIb was assumed	—
2.10.4.1	General		—
2.10.4.2	Material group and comparative tracking index		—
2.10.4.3	Minimum creepage distances		—
2.10.5	Solid insulation	See below	P
2.10.5.1	Minimum distance through insulation	(see appended table 2.10.5)	P
2.10.5.2	Thin sheet material		P
	Number of layers (pcs) .....:	3 layers for reinforced insulation	—
	Electric strength test	(see appended table 5.2)	—
2.10.5.3	Printed boards		P
	Distance through insulation		P
	Electric strength test for thin sheet insulating material	(see appended table 5.2)	—
	Number of layers (pcs) .....:		N
2.10.5.4	Wound components		N
	Number of layers (pcs) .....:		N
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		N
2.10.5.5	Cemented joints		N
2.10.5.6	Thin sheet material - General		P
2.10.5.7	Separable thin sheet material		P
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material - standard test procedure		N
2.10.5.10	Thin sheet material - alternative test procedure		N
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
2.10.5.14	Additional insulation in wound components		N
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards		P
2.10.6.2	Coated printed boards		P
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		P
2.10.6.4	Insulation between conductors on different surfaces of a printed board		N
2.10.7	Component external terminations	No hermetically sealed componen	N

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Clause	Requirement – Test	Result - Remark	Verdict
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
	Electric strength test		—
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and for insulating compound	Insulation kept homogenous.	N
2.10.11	Tests for semiconductor devices and for cemented joints		N
2.10.12	Enclosed and sealed parts		N
3	**WIRING, CONNECTIONS AND SUPPLY**		**P**
3.1	General		P
3.1.1	Current rating and overcurrent protection		P
3.1.2	Protection against mechanical damage		P
3.1.3	Securing of internal wiring		P
3.1.4	Insulation of conductors	The insulation of each individual conductors suitable for the application and the working voltage. For the insulation material see 3.1.1. (See appended table 5.2)	P
3.1.5	Beads and ceramic insulators	No beads and ceramic insulators	N
3.1.6	Screws for electrical contact pressure		P
3.1.7	Insulating materials in electrical connections		P
3.1.8	Self-tapping and spaced thread screws	.	N
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test		P
3.1.10	Sleeving on wiring	There are no sleeves used as supplementary insulation	P
3.2	Connection to an a.c. mains supply or a d.c. mains supply		P
3.2.1	Means of connection ..... :	Approved AC inlet	P
3.2.1.1	Connection to an a.c. mains supply		P
3.2.1.2	Connection to a d.c. mains supply		N

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Clause	Requirement – Test	Result - Remark	Verdict
3.2.2	Multiple supply connections	No multiple connection	N
3.2.3	Permanently connected equipment	No permanently connected equipment	N
	Number of conductors, diameter (mm) of cable and conduits ..... :		—
3.2.4	Appliance inlets		P
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		N
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	D (mm); test mass (g) ..... :		—
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		N
3.3	Wiring terminals for connection of external conductors		N
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type and nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminals design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		—
3.4	Disconnection from the mains supply		P

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Clause	Requirement – Test	Result - Remark	Verdict
3.4.1	General requirement		P
3.4.2	Disconnect devices	. Approved AC inlet	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords	No such switch	N
3.4.6	Single-phase equipment and d.c. equipment	The appliance coupler disconnects both poles simultaneously.	P
3.4.7	Three-phase equipment	Single phase.	N
3.4.8	Switches as disconnect devices	See sub-clause 3.4.2.	N
3.4.9	Plugs as disconnect devices	Built-in equipment considered in end used product	N
3.4.10	Interconnected equipment	No interconnected equipment.	N
3.4.11	Multiple power sources	Only one supply connection provided.	N
3.5	Interconnection of equipment		P
3.5.1	General requirements	It must be connected to other equipment for working	P
3.5.2	Types of interconnection circuits.....	SELV circuit only	P
3.5.3	ELV circuits as interconnection circuits		N
4	**PHYSICAL REQUIREMENTS**		—
4.1	Stability		N
	Angle of 10°		N
	Test: force (N).....		N
4.2	Mechanical strength		P
4.2.1	General	Built-in equipment, considered in end product also	P
4.2.2	Steady force test, 10 N		P
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test	Tested on AC inlet panel.	P
	Fall test	Tested on AC inlet panel.	P
	Swing test	Tested on AC inlet panel.	P

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Clause	Requirement – Test	Result - Remark	Verdict
4.2.6	Drop test		N
4.2.7	Stress relief test		N
4.2.8	Cathode ray tubes		N
	Picture tube separately certified..... :		N
4.2.9	High pressure lamps		N
4.2.10	Wall or ceiling mounted equipment; force (N) ... :		N
4.3	Design and construction		P
4.3.1	Edges and corners	Corners and edges are rounded	P
4.3.2	Handles and manual controls; force (N) ..... :	No handles and controls	N
4.3.3	Adjustable controls	No controls	N
4.3.4	Securing of parts		P
4.3.5	Connection of plugs and sockets		N
4.3.6	Direct plug-in equipment		N
	Dimensions (mm) of mains plug for direct plug-in ..... :		N
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N) ..... :		N
4.3.7	Heating elements in earthed equipment	No heating elements	N
4.3.8	Batteries	No batteries	N
4.3.9	Oil and grease	No oil or grease	N
4.3.10	Dust, powders, liquids and gases	No dust, powder, fluids or liquids Equipment in intended use not considered to be exposed to these.	N
4.3.11	Containers for liquids or gases	No containers	N
4.3.12	Flammable liquids..... :	No liquids	N
	Quantity of liquid (l) ..... :		N
	Flash point (°C) ..... :		N
4.3.13	Radiation; type of radiation ..... :	No radiation	N
4.3.13.1	General		N
4.3.13.2	Ionizing radiation		N
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—

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Clause	Requirement – Test	Result - Remark	Verdict
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No equipment operated with UV radiating lamps	N
	Part, property, retention after test, flammability classification		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N
4.3.13.5	Laser (including LEDs)		N
	Laser class		—
4.3.13.6	Other types		N
4.4	Protection against hazardous moving parts		P
4.4.1	General	Built-in equipment, considered in end use product also	P
4.4.2	Protection in operator access areas		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		P
4.4.5.1	General	DC Fan used	P
	Not considered to cause pain or injury. A)…….:	<1	P
	Is considered to cause pain, not injury. B) …….:		N/A
	Considered to cause injury. C) …….:		N/A
4.4.5.2	Protection for users		P
	Use of symbol or warning ……..:		N/A
4.4.5.3	Protection for service persons		P
	Use of symbol or warning ……..:		N/A
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests	See appended table 4.5	P
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		P
4.6	Openings in enclosures		N

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Clause	Requirement – Test	Result - Remark	Verdict
4.6.1	Top and side openings	Built-in equipment, considered in end use product	N
4.6.2	Bottoms of fire enclosures		N
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment		N
4.6.4.1	Constructional design measures		N
4.6.4.2	Evaluation measures for larger openings		N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C)/time (weeks)..... :		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Built-in equipment, considered in end product also	P
	Method 1, selection and application of components wiring and materials		P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure	Metal enclsoure	P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General	PCB: Min. V-1	P
4.7.3.2	Materials for fire enclosures	Metal enclosure	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Built-in equipment, considered in end product also	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Min. V-2	P
4.7.3.5	Materials for air filter assemblies	No air filter.	N
4.7.3.6	Materials used in high-voltage components	No high voltage component.	N
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	Touch current and protective conductor current		P
5.1.1	General		P
5.1.2	Equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P

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Clause	Requirement – Test	Result - Remark	Verdict
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument	Measuring circuit according to circuit D.1	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Test voltage (V) .....:	See appended table 5.1	—
	Measured touch current (mA) .....:	See appended table 5.1	—
	Max. allowed touch current (mA) .....:	See appended table 5.1	—
	Measured protective conductor current (mA) ....:	See appended table 5.1	—
	Max. allowed protective conductor current (mA) :	See appended table 5.1	—
5.1.7	Equipment with touch current exceeding 3.5 mA .....:		N
5.1.7.1	General		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks	There is no Telecommunication network	N
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N
	Test voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
5.1.8.2	Summation of touch currents from telecommunication networks .....:		N

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	(see appended Annex B)	P
5.3.3	Transformers	(see appended Annex C)	P

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Clause	Requirement – Test	Result - Remark	Verdict
5.3.4	Functional insulation ..... :	By short-circuited or open-circuited.	P
5.3.5	Electromechanical components	No such components	N
5.3.6	Audio amplifiers in information technology equipment		N
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment		N
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	No reduction of clearance and creepage distance. Electric strength test is made on basic, supplementary and reinforced insulation after test.	P
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		**N**
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements		N
	Test voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions..... :		N
6.2	Protection of equipment users from overvoltages on telecommunication networks		N
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N
6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A) ..... :		—
	Current limiting method..... :		—

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Clause	Requirement – Test	Result - Remark	Verdict
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		**N**
7.1	General		N
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
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		**N**
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N
A.1.1	Samples ..... :		—
	Wall thickness (mm) ..... :		—
A.1.2	Conditioning of samples; temperature (°C)..... :		N
A.1.3	Mounting of samples..... :		N
A.1.4	Test flame		N
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N
A.2.1	Samples, material ..... :		—
	Wall thickness (mm) ..... :		—
A.2.2	Conditioning of samples		N
A.2.3	Mounting of samples		N
A.2.4	Test flame		N
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s)..... :		—

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Clause	Requirement – Test	Result - Remark	Verdict
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		**P**
B.1	General requirements		P
	Position ..... :	DC Fan in secondary circuit	—
	Manufacturer ..... :	(see appended tabel 1.5.1)	—
	Type ..... :	(see appended tabel 1.5.1)	—
	Rated values ..... :	(see appended tabel 1.5.1)	—
B.2	Test conditions		P
B.3	Maximum temperatures		P
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		N
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		P
B.7.1	General		P
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		P
B.7.4	Electric strength test		N
B.8	Test for motors with capacitors		N

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Clause	Requirement – Test	Result - Remark	Verdict
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		**P**
	Position ..... :	On the PCB	—
	Manufacturer ..... :	(see appended table 1.5.1)	—
	Type ..... :	(see appended table 1.5.1)	—
	Rated values ..... :	(see appended table 1.5.1)	—
	Method of protection ..... :	External to transformer (electronic protections) short-circuit protection	—
C.1	Overload test		P
C.2	Insulation	Double and reinforced insulation	P
	Protection from displacement of windings ..... :	Fixing by insulation tape and tube	P
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS**		**P**
D.1	Measuring instrument	Was used for testing according to clause 5.1.6	P
D.2	Alternative measuring instrument		N
E	**ANNEX E, TEMPERATURE RISE OF A WINDING**		**P**
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)**		**P**
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		**N**
G.1	Clearances	This method was not used	N
G.1.1	General		N
G.1.1	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V)..... :		N
G.2.1	AC mains supply		N
G.2.2	DC mains supply		N
G.2.3	Unearthed d.c. mains supplies		N
G.2.4	Battery operation		N

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Clause	Requirement – Test	Result - Remark	Verdict
G.3	Determination of telecommunication network transient voltage (V) ..... :		N
G.4	Determination of required withstand voltage (V). :		N
G.4.1	Mains transients and internal repetitive peaks		N
G.4.2	Transients from telecommunication networks		N
G.4.3	Combination of transients		N
G.4.4	Transients from cable distribution systems		N
G.5	Measurement of transient levels (V) ..... :		N
G.6	Determination of minimum clearances ..... :		N
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		**N**
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		**P**
	Metal used	Alloy metal or copper	—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)**		**N**
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) ..... :		N
K.3	Thermostat endurance test; operating voltage (V) ..... :		N
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation		N
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)**		**N**
L.1	Typewriters		N
L.2	Adding machines and cash registers		N
L.3	Erasers		N
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment		N
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		**N**
M.1	Introduction		N

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Clause	Requirement – Test	Result - Remark	Verdict
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringing signal		N
M.3.1.1	Frequency (Hz) ..... :		—
M.3.1.2	Voltage (V) ..... :		—
M.3.1.3	Cadence; time (s), voltage (V) ..... :		—
M.3.1.4	Single fault current (mA) ..... :		—
M.3.2	Tripping device and monitoring voltage ..... :		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) ..... :		N
N	**ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)**		**N**
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N
P	**ANNEX P, NORMATIVE REFERENCES**		**N**
Q	**ANNEX Q, VOLTAGE DEPENDENT RESISTORS(VDRs)**		**N**
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		**N**
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N
R.2	Reduced clearances (see 2.10.3)		N
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		**N**
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		**N**
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		**N**

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Clause	Requirement – Test	Result - Remark	Verdict
U.1	Wire construction		N
U.2	Type tests		N
U.2.1	Electric strength		N
U.2.2	Flexibility and adherence		N
U.2.3	Heat shock		N
U.2.4	Retention of electric strength after bending		N
U.3	Tests during manufacture		N
U.3.1	Routine testing		N
U.3.2	Sampling tests		N
V	**Annex V AC power distribution systems**		**P**
V.1	Introduction		P
V.2	TN power distribution systems		P
V.3	TT power distribution systems		P
V.4	IT power distribution systems		N
W	**Annex W Summation of touch currents**		**N**
W.1	Touch current from electronic circuits		N
W.1.1	Floating circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N
X	**Annex X Maximum heating effect in transformer tests**		**P**
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P
Y	**Annex Y Ultraviolet light conditioning test**		**N**
Y.1	Test apparatus		N
Y.2	Mounting of test samples		N
Y.3	Carbon-arc light-exposure apparatus		N
Y.4	Xenon-arc light-exposure apparatus		N

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Clause	Requirement – Test	Result - Remark	Verdict
Z	**Annex Z Overvoltage categories**		**N**
AA	**Annex AA Mandrel test**		**N**
BB	**Annex BB Changes in the second edition**		**N**
BB.1	Numbering changes table		N
BB.2	Changes to this edition		N
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		
CC.1	General		N/A
CC.2	Test program 1……..……..:		N/A
CC.3	Test program 2……..……..:		N/A
CC.4	Test program .....:		N/A
CC.5	Compliance…..:		N/A
DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		
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**		
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

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Clause	Requirement – Test	Result - Remark	Verdict

2.10.3 and 2.10.4	**TABLE: clearance and creepage distance measurements**				**P**
clearance cl and creepage distance dcr at/of:	U (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Different polarity L/N	240	2.0	3.0	2.4	3.0
Live part to metal enclosure	240	2.0	>3.0	2.4	>3.0
Primary trace to secondary trace	240	4.0	5.0	4.8	5.0
Note(s):					

4.5	**TABLE: maximum temperatures**					**P**
	test voltage (V) .....:	99	264	--	--	—
	Output voltage (V) .....:	--	--	--	--	—
maximum temperature T of part/at::		Meansure T (℃)				Allowed T (℃)
Internal wire		40.5	41.6	--	--	75
PCB		62.7	63.9	--	--	130
Terminal		41.7	43.0	--	--	85
Winding of T		79.6	82.5	--	--	110
Bobbin of T		77.3	80.6	--	--	Ref
L winding		67.7	69.1	--	--	130
Enclosure		32.9	34.0	--	--	Ref

Note:
1. The ambient temperature during this test was between 24.6℃ and 25.0℃
2. The value of dT is calculated under the condition the temperature of ambient considered as 25℃

4.5.2	**TABLE: ball pressure test of thermoplastic parts**	**P**
	allowed impression diameter (mm) ..... :	≤ 2 mm	—
Part		test temperature (°C)	impression diameter (mm)
AC inlet		125	1.2
PCB		125	0.8
Transformer bobbin		125	1.1
Note(s):			

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Clause	Requirement – Test	Result - Remark	Verdict

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests	P
test voltage applied between:	test voltage (V) a.c. / d.c.	breakdown Yes / No
L/N to accessible enclosure	AC 1500	No
Note(s):		

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])
Appliance Inlet	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD	ST-A01-002L	250Vac, 10A	IEC/EN 60320-1	VDE, SEMKO, UL
Power Switch	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD	PS8A	250Vac, Min8A	IEC/EN 61058	VDE, SEMKO, UL
DC Fan	GUANGZHOU YIJIA ELECTRONICS CO LTD	EJA1202512S EMN	DC 12V 0.18A 2.16w	IEC/EN60950-1	Test within appliance
Fuse (F1)	Xucheng Electronics (Shenzhen) Co.,Ltd	5F	Min6.3A/250V	IEC/EN 60127-1, IEC/EN 60127-2	VDE, SEMKO, UL
Transformer T1	Dongguan Kehui electric Co. Ltd	EE-13	Class B,130°C	IEC/EN60950-1	Test within appliance
Bobbin used in T1	Chang Chun pliastic co Ltd	T375J	Phenolic, 150°C	UL94	UL
Insulation tape used in T1	Suzhou jingyi	JY312#	130°C	UL510	UL
Triple wire use in T1	Furukawa	TEX-E	130°C	IEC/EN60950-1	VDE, UL
Transformer T2(Output power 600W	SHENZHEN LICI ELECTRONIC CO LTD	ERL-39	Class B,130°C	IEC/EN60950-1	Test within appliance
Bobbin used in T2	Chang Chun pliastic co Ltd	375HF	Phenolic, 150°C	UL94	UL
Insulation tape used in T2	Suzhou jingyi	JY312#	130°C	UL510	UL
Insulation tape used in T2	Suzhou jingyi	JY312#	130°C	UL510	UL
Transformer T3	SHENZHEN LICI ELECTRONIC CO LTD	EEL-19	Class B,130°C	IEC/EN60950-1	Test within appliance

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Clause	Requirement – Test	Result - Remark	Verdict

Bobbin used in T3	Chang Chun pliastic co Ltd	375HF	Phenolic, 150°C	UL94	UL
Insulation tape used in T3	Suzhou jingyi	JY312#	130°C	UL510	UL
Line filter	Dongguan Kehui electric Co. Ltd	26L-AJ047-A00	130°C	EN60950-1	Test within appliance
Bridge diode	Interchangeable	Interchangeable	Min. 8A, 600V	IEC/EN60950-1	Test within appliance
MOSFET	Interchangeable	Interchangeable	Min. 20A, 500V	IEC/EN60950-1	Test within appliance
Y-Capacitors	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CE	250V, 2200pF Y2	IEC/EN 60384-14	VDE, SEMKO, UL
X-Capacitors	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	STE	0.47uF,275V, 125°C, X2 type	IEC/EN 60384-14	VDE, SEMKO, UL
Y-Capacitors (Appliance Inlet)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CE	250V,4700pF Y2	IEC/EN 60384-14	VDE, SEMKO, UL
Bleeder Resistors (Appliance Inlet	Interchangeable	Interchangeable	220KΩ ±5%	EN60950-1	Tested in unit
Varistor (Z1) (optional)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D561K, 14D561K	Rated V-0, 85°C, minimum 300V, complied with 6KV/3KA; Coating rated V-0	IEC 61051 UL1449	VDE 40023049 UL E330837
PCB	Interchangeable	Interchangeable	130°C	UL796	UL

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Clause	Requirement – Test	Result - Remark	Verdict

Optical Isolators (IC2 IC3 IC4)	Shenzhen orient Technology	PC817	External creepage distance＞8.5mm Distance through insulation＞ 0.9mm Humidity test, electric strength test 3750V	EN/IEC60950-1	VDE, SEMKO, UL
Optical Isolators (IC2 IC3 IC4)) (Alternate)	SHARP CORPO ELECTPONIC COMPONENTS AND DEVICES GROUP.	PC817	External creepage distance＞8.5mm Distance through insulation＞ 0.9mm Humidity test, electric strength test 3750V	EN/IEC60950-1	VDE, SEMKO, UL
Optical Isolators (IC2 IC3 IC4)) (Alternate)	EVERLIGHT ELECTRONICS CO LTD	EL8171	Dti=0.5mm, int. dcr=6.0mm, ext. dcr=8.0mm, 100 °C	UL 1577 IEC/EN 60950-1 IEC/EN 60747-5-5	VDE 132249 UL E214129
Electrolytic Capacitor	Interchangeable	Interchangeable	Rated 220 – 560uF, 105°C, Min. 400Vac	IEC/EN60950-1	Test within appliance

Photo documentation

Tortox BX600