



## APPLICATION FOR LOW VOLTAGE DIRECTIVE

On Behalf of

BeiJing Creative LianJie Network Technology Co.,Ltd

### POWER INJECTOR

PT-PSE106GW, PT-PSE106GW-AR, PT-PSE106GWN

Prepared for : BeiJing Creative LianJie Network Technology Co.,Ltd  
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Beijing, China 100085

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Date of Test: November 02, 2015 to November 17, 2015  
Date of Report: November 18, 2015  
Report Number: WSCT1511002847S

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Report No.: WSCT1511002847S Issued: November 18, 2015 Revised:None

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**Revision History Of Report**

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	WSCT1511002847S	Initial Issue	ALL	Wang Fengbing

**ACCREDITATIONS**

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Report No.: WSCT1511002847S Issued: November 18, 2015 Revised:None

**TEST REPORT**

**EN60950 -1**

**Information technology equipment – Safety-  
Part 1: General requirements**

Report reference No ..... : WSCT1511002847S

Tested by ..... : Colin Chen  
(printed name and signature) .....

*Colin Chen*

Checked by ..... : Mike Zhao  
(printed name and signature) .....



*Mike Zhao*

Approved by ..... : Wang Fengbing  
(printed name and signature) .....

*Wang Fengbing*

Date of issue..... : November 18, 2015

Testing Laboratory Name ..... : World Standardization Certification & Testing CO.,LTD

Address ..... : Building A, Baoshi Road, Baoshi Science & Technology Park, Bao'an District, Shenzhen, Guangdong, China

Testing location ..... : CBTL  CCATL  SMT  TMP

Address ..... : Same as above.

Applicant's Name ..... : BeiJing Creative LianJie Network Technology Co.,Ltd

Address ..... : Rm 207 Ka Wah Building F, No.9 shangdi 3rd street, Haidian Dist. Beijing, China 100085

**Test specification**

Standard..... : EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

Test procedure ..... : LVD Approval

Non-standard test method ..... : N/A

Test Report Form No..... : IECEN60950\_1F

TRF originator ..... : SGS Fimko Ltd

Master TRF ..... : Dated 2014-02

Master TRF ..... : dated 2012-08

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Test item description .....	POWER INJECTOR
Manufacturer.....	BeiJing Creative LianJie Network Technology Co.,Ltd
Address .....	2rd Floor G Building, JinXiongDa Technopark, XingYuan Road, DaTangLang Village,Dalingshan Town,Dongguan City,Guangdong Province,China 523811
Trademark .....	
Model and/or type reference .....	PT-PSE106GW, PT-PSE106GW-AR, PT-PSE106GWN
Rating(s) .....	Input: AC100-240V 50-60Hz 1.5A Output: 55V ---1100mA







<b>Test item particulars</b>	
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
Connection to the mains.....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input type="checkbox"/> not directly connected to the mains
Operating condition .....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
Access location .....	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location <input type="checkbox"/> considered in end system
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: not directly connected to the mains
Mains supply tolerance (%) or absolute mains supply values .....	±10%(requested by client)
Tested for IT power systems .....	<input type="checkbox"/> Yes (only for Norway) <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V) .....	N/A
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
Considered current rating of protective device as part of the building installation (A) .....	16A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
IP protection class .....	IPX0
Altitude during operation (m) .....	<2000
Altitude of test laboratory (m) .....	<500
Mass of equipment (kg) .....	Approx.0.446kg
<b>Test case verdicts</b>	
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)
<b>Testing</b>	
Date of receipt of test item .....	November 02, 2015
Date(s) of performance of test .....	November 02, 2015 to November 17, 2015





**General remarks**

The test results presented in this report only to the object tested.  
This report shall not be reproduced except in full without the written approval of the testing laboratory.  
The test results presented in this report relate only to the item tested.  
"(see remark #)" refers to a remark appended to the report.  
"(see Annex #)" refers to an annex appended to the report.  
"(See Enclosure #)" refers to additional information appended to the report.  
"(See appended table)" refers to a table appended to the report.  
Throughout this report a point is used as the decimal separator.

**List of Attachments:**

Appendix 1: Photo documentation.  
Appendix 2: Equipment list.

**Comments**

Brief description of the test sample:  
The equipment is a **POWER INJECTOR** for the general use in information technology equipment.  
The manufacturer specified maximum ambient temperature as 40°C.

**Summary of Testing and Conclusions**

The sample(s) tested complies with the requirements of  
**EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013.**







**MODEL DESCRIPTION:**

No.	Model No.	Input			Output Voltage (Vdc)	Output Current (mA)
		Voltage	Frequency	Current		
1	PT-PSE106GW	AC100-240V	50-60Hz	1.5A	55	1100
2	PT-PSE106GW-AR	AC100-240V	50-60Hz	1.5A	55	1100
3	PT-PSE106GWN	AC100-240V	50-60Hz	1.5A	55	1100

1. All models in each series have similar construction with the same diagram circuit and PCB layout, but different from model names and management board use.
2. Test data for PT-PSE106GW represent all models in this test report, which is conditioned with Max. current, power consumption.
3. All tests were conducted on the models of PT-PSE106GW and the test result was passed.

**Copy of marking plate:**

**PROJET®**  
POWER INJECTOR  
Model: PT-PSE106GWN  
Input: 100-240VAC 1.5A  
50-60Hz  
Output: 55VDC/1100mA  
Power pins:  
4,5(+) 7,8(-) and 3,6(+) 1,2(-)  
Data speed: 10/100/1000Mbps

S/N: PT1544010021

**WARNING:**

- indoor use only
- risk of electric shock
- do not open
- dry location use only

**MADE IN CHINA**

**PROJET®**  
POWER INJECTOR  
Model: PT-PSE106GW-AR  
Input: 100-240VAC 1.5A  
50-60Hz  
Output: 55VDC/1100mA  
Power pins: 4,5(+)7,8(-) 3,6(+)1,2(-)  
Data speed: 10/100/1000Mbps  
Protection line: 1,2,3,4,5,6,7,8  
Common mode(10/700us): 6KV

S/N: PT1543010006

**WARNING:**

- indoor use only
- risk of electric shock
- do not open
- dry location use only

**MADE IN CHINA**

**PROJET®**  
POWER INJECTOR  
Model: PT-PSE106GW  
Input: 100-240VAC 1.5A  
50-60Hz  
Output: 55VDC/1100mA  
Power pins:  
4,5(+) 7,8(-) and 3,6(+) 1,2(-)  
Data speed: 10/100/1000Mbps

S/N: PT1545010005

**WARNING:**

- indoor use only
- risk of electric shock
- do not open
- dry location use only

**MADE IN CHINA**

Note: There are reference labels. final labels should be including the content of them.

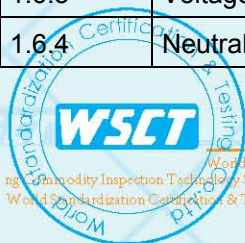




EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		P

1.5	Components		P
1.5.1	Comply with IEC60950 or relevant component standard	(see appended table 1.5.1).	P
1.5.2	Evaluation and testing of components	Components which are certified to IEC and/or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal controls.	N/A
1.5.4	Transformers		P
1.5.5	Interconnecting cables		N/A
1.5.6	Capacitors bridging insulation	EN60384-14 approved	P
1.5.7	Resistors bridging insulation		P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	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		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/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

1.6	Power interface		P
1.6.1	AC power distribution systems		P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment	N/A
1.6.4	Neutral conductor		N/A







EN60950-1

Clause	Requirement – Test	Result – Remark	Verdict
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		N/A
	Rated voltage(s) or voltage range(s) (V) .....	100-240V	P
	Symbol for nature of supply, for d.c. only .....	AC source	N/A
	Rated frequency or frequency range (Hz) .....	50-60Hz	P
	Rated current (A) .....	1.5A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark .....	Trade-mark: <b>PRDCET</b> <sup>®</sup>	P
	Model identification or type reference :	PT-PSE106GW	P
	Symbol of Class II.....		N/A
	Other markings and symbols .....	Additional symbols or marking do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols		P
1.7.2	Safety instructions and marking	English provided. (Version in other language will be provided when submitted for national approval)	P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	AC plug serves as disconnect device	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		N/A
1.7.2.6	Ozone	Not such equipment.	N/A
1.7.3	Short duty cycles		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) .....	Marking provided on PCB: F1 T3.15AL 250V	P
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminal for a.c. mains supply conductors		N/A





EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		N/A
1.7.8.1	Identification, location and marking .....		N/A
1.7.8.2	Colours .....		N/A
1.7.8.3	Symbols according to IEC 60417 .....		N/A
1.7.8.4	Markings using figures .....		N/A
1.7.9	Isolation of multiple power sources .....		N/A
1.7.10	Thermostats and other regulation devices	Such devices not used.	N/A
1.7.11	Durability	The label was subjected to the permanence 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 lifting of the label edge.	P
1.7.12	Removable parts	Not provided on removable 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 parts with only basic insulation to ELV or hazardous voltage.	P
2.1.1.1	Access to energized parts	Connot touch live part or basic insulaiton	P
	Test by inspection .....		P
	Test with test finger (Figure 2A) .....		P
	Test with test pin (Figure 2B).....		P
	Test with test probe (Figure 2C) .....		N/A
2.1.1.2	Battery compartments .....	No battery compartments.	N/A







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (V); distance (mm) trough insulation		--
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards .....	The energy does not exceed 240VA between any two points in accessible connector of secondary circuit. (see appended table 2.1.1.5.)	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s).....	After 1s voltage:2V; Limit: 368Vp×37%=136.16V	--
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 equipment.	N/A
2.1.2	Protection in service access areas	No operator accessible area that needs to be accessed by the use of a tool.	N/A
2.1.3	Protection in restricted access locations	Not intended for use in restricted access locations.	N/A

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		P
2.3.1	Limits		P
	Type of TNV circuits .....	TNV-1	--
2.3.2	Separation from other circuits and from accessible parts		P
2.3.2.1	General requirements		P
2.3.2.2	Protection by basic insulation		P





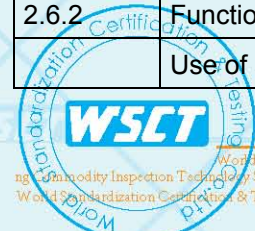
Report No.: WSCT1511002847S Issued: November 18, 2015 Revised:None

EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other construction		N/A
2.3.3	Separation from hazardous voltages		P
	Insulation employed.....:	RI	--
2.3.4	Connection of TNV circuits to other circuits	TNV-1 to SELV	P
	Insulation employed.....:	BI	--
2.3.5	Test for operating voltages generated externally		N/A

<b>2.4</b>	<b>Limited current circuits</b>		<b>P</b>
2.4.1	General requirements		P
2.4.2	Limit values	29.61mA	P
	Frequency (Hz).....:	42.3k	--
	Measured current (mA).....:	0.51	--
	Measured voltage (V).....:	1.02	--
	Measured circuit capacitance (μF).....:	2200pF	--
2.4.3	Connection of limited current circuits to other circuits		N/A

<b>2.5</b>	<b>Limited power sources</b>		<b>P</b>
	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	A regulating network limits the output in compliance with table 2B both under normal operating conditions and after any single fault.	P
	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).....:	(see appended table 2.5)	--
	Current rating of overcurrent protective device (A)		N/A

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		<b>P</b>
2.6.1	Protective earthing		P
2.6.2	Functional earthing		N/A
	Use of symbol for functional earthing.....:		N/A







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
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	Approved AC inlet used	N/A
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG.....:		--
2.6.3.3	Size of protective bonding conductors		P
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG.....:	Comply with 2.6.3.4	--
	Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG.....:		--
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min).....:	0.015Ω, 0.48V, 32A, 2min Limit: 0.1Ω, 2.5V	P
2.6.3.5	Colour of insulation .....	Green-and-yellow	P
2.6.4	Terminals		P
2.6.4.1	General		P
2.6.4.1	Protective earthing and bonding terminals	Approved AC inlet used	P
	Rated current (A), type and nominal thread diameter (mm)..... :		--
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		N/A
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 used	P
2.6.5.4	Parts that can be removed by an operator		P
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		P
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		<b>P</b>
2.7.1	Basic requirements	Fuse “F1” integrated in the equipment	P
	Instructions when protection relies on building installation		N/A





EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection	By building installation	P
2.7.4	Number and location of protective devices .....	One current fuse on line conductor	P
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel .....		N/A

<b>2.8</b>	<b>Safety interlocks</b>		<b>N/A</b>
2.8.1	General principles	No safety interlocks	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	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) .....		--
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

<b>2.9</b>	<b>Electrical insulation</b>		<b>P</b>
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	48h	P
	Relative humidity (%), temperature (°C)	95%, 30°C	--
2.9.3	Grade of insulation	Basic, supplementary, functional, double and reinforced insulation	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used .....	Method 1 and Method 3	--

<b>2.10</b>	<b>Clearances, creepage distances and distances through insulation</b>		<b>P</b>
2.10.1	General		P
2.10.1.1	Frequency .....	Considered	P







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
2.10.1.2	Pollution degrees .....	2	P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts N		P
2.10.1.5	Insulation with varying dimensions N		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		P
2.10.2.1	General		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		P
2.10.3.1	General		P
2.10.3.2	Mains transient voltages		P
	a) AC mains supply .....	2500Vpeak	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		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....		N/A
2.10.3.7	Transients from d.c. mains supply .....		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply .....		N/A
	For a d.c. mains supply .....		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests.....	Material group IIIa/IIIb is assumed to be used	—





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Clause	Requirement – Test	Result – Remark	Verdict
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	(see appended table 2.10.3 and 2.10.4)	P
2.10.5.1	General		P
2.10.5.2	Distance through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulation compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		P
2.10.5.5	Cemented joints		N/A
2.10.5.6	Thin sheet material – General	Insulation tape	P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs).....:	2 layers tape	--
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		P
	Electric strength test	(see appended table 5.2)	--
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		--
2.10.5.11	Insulation in wound components	Triple insulated wire used as secondary winding of transformer T1.	P
2.10.5.12	Wire in wound components		P
	Working voltage .....	(see appended table 2.10.2)	P
	a) Basic insulation not under stress .....		N/A
	b) Basic, supplementary, reinforced insulation .....		N/A
	c) Compliance with Annex U .....	Approved TIW wire used, comply with Annex U, three layers	P
	Two wires in contact inside wound component; angle between 45° and 90° .....		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		P





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Clause	Requirement – Test	Result – Remark	Verdict
2.10.6.1	Uncoated printed board		P
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations		N/A
2.10.8	Test on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		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		N/A
2.10.12	Enclosed and sealed parts		N/A

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>		<b>P</b>
3.1	General		P
3.1.1	Current rating and overcurrent protection		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	Securing well	P
3.1.4	Insulation of conductors		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	Non-metallic materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws	Not used.	N/A
3.1.9	Termination of conductors		P
	10 N pull test		--
3.1.10	Sleeving on wiring		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
<b>3.2</b>	<b>Connection to a mains supplies</b>		<b>P</b>
3.2.1	Means of connection	AC inlet	P
3.2.1.1	Connection to an a.c. mains supply	Ditto	P
3.2.1.2	Connection to an 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 a permanently connected equipment.	N/A
	Number of conductors, diameter of cable and conduits (mm) .....		--
3.2.4	Appliance inlets	Comply with IEC/EN60320	P
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type.....		--
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....		--
3.2.5.2	DC power supply cords		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		N/A
	Diameter or minor dimension D (mm); test mass (g) :		--
	Radius of curvature of cord (mm).....		--
3.2.9	Supply wiring space		N/A

<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		<b>N/A</b>
3.3.1	Wiring terminals	No such terminals	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ).....		--
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm).....		--







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Clause	Requirement – Test	Result – Remark	Verdict
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

<b>3.4</b>	<b>Disconnection from the a.c. mains supply</b>		<b>P</b>
3.4.1	General requirement		P
3.4.2	Disconnect devices	AC inlet	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment	Both poles disconnected simultaneously	P
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A

<b>3.5</b>	<b>Interconnection of equipment</b>		<b>P</b>
3.5.1	General requirements		P
3.5.2	Types of interconnection circuits .....		P
3.5.3	ELV circuits as interconnection circuits	No ELV circuits	N/A
3.5.4	Data ports for additional equipment	Network port used as data Transmission	P

<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		<b>P</b>
4.1	Stability		N/A
	Angle of 10°		N/A
	Test: force (N) .....		N/A

<b>4.2</b>	<b>Mechanical strength</b>		<b>P</b>
4.2.1	General		P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N		P





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Clause	Requirement – Test	Result – Remark	Verdict
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		P
4.2.5	Impact test		P
	Fall test		P
	Swing test		N/A
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test	97.7°C, 7h	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) :	50N	P
4.2.11	Rotating solid media		N/A
	Test to cover on the door.....:		N/A

<b>4.3</b>	<b>Design and construction</b>		<b>P</b>
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N) :	No handles or controls provided.	N/A
4.3.3	Adjustable controls	No such controls provided.	N/A
4.3.4	Securing of parts	Securing well	P
4.3.5	Connection of plugs and sockets		N/A
4.3.6	Direct plug-in equipment		N/A
	Torque (Nm) :		--
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment		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 discharge 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

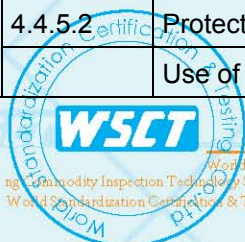






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Clause	Requirement – Test	Result – Remark	Verdict
4.3.12	Flammable liquids :	No such flammable liquid.	N/A
	Quantity of liquid (l) :		N/A
	Flash point (°C) :		N/A
4.3.13	Radiation :		P
4.3.13.1	General	LED radiation only	P
4.3.13.2	Ionizing radiation	No ionizing radiation.	N/A
	Measured radiation (pA/kg)		--
	Measured high – voltage (kv)		--
	Measured focus voltage (kv)		--
	CRT markings		--
4.3.13.3	Effective 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	LED as indication only	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

<b>4.4</b>	<b>Protection against hazardous moving parts</b>	<b>No moving parts</b>	<b>N/A</b>
4.4.1	General		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





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Clause	Requirement – Test	Result – Remark	Verdict
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning .....		N/A

<b>4.5</b>	<b>Thermal requirements</b>		<b>P</b>
4.5.1	General		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

<b>4.6</b>	<b>Openings in enclosures</b>		<b>P</b>
4.6.1	Top and side openings	No openings	P
	Dimensions (mm) :		--
4.6.2	Bottoms of fire enclosures	No openings	P
	Construction of the bottom , dimensions (mm) ...:		--
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		N/A
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature/time.....:		--

<b>4.7</b>	<b>Resistance to fire</b>		<b>P</b>
4.7.1	Reducing the risk of ignition and spread of flame		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





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Clause	Requirement – Test	Result – Remark	Verdict
4.7.3	Materials		P
4.7.3.1	General	PCB: V-0	P
4.7.3.2	Materials for fire enclosures	enclosure:V-0	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	Min:V-2	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 provided.	N/A

<b>5</b>	<b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b>		<b>P</b>
5.1	Touch current and protective conductor current		P
5.1.1	General		P
5.1.2	Configuration of equipment under test (EUT)		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		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		P
5.1.4	Application of measuring instrument	See Annex D	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) .....	264V, 60Hz	--
	Measured touch current (mA) .....	(see appended table 5.1)	--
	Max. allowed touch current (mA) .....	0.25	--
	Measured protective conductor current (mA)		--
	Max. allowed protective conductor current (mA)		--
5.1.7	Equipment with touch current exceeding 3.5 mA .....		N/A
5.1.7.1	General .....		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		P





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Clause	Requirement – Test	Result – Remark	Verdict
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		P
	Test voltage (V) .....	264V, 60Hz	--
	Measured current (mA) .....	(see appended table 5.1)	--
	Max. allowed current (mA) .....	0.25	--
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

<b>5.2</b>	<b>Electric strength</b>		<b>P</b>
5.2.1	General		P
5.2.2	Test procedure		P

<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		<b>P</b>
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors		N/A
5.3.3	Transformers		P
5.3.4	Functional insulation .....	Method c	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE .....		N/A
5.3.7	Simulation of faults	See appended table 5.3.	P
5.3.8	Unattended equipment	No such equipment.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	No flame emitted, no molten material emitted, no deformation of enclosure	P
5.3.9.1	During the tests	No hazards	P
5.3.9.2	After the tests	No fire, no danger	P

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		<b>P</b>
6.1	Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment		P
6.1.1	Protection from hazardous voltages		P
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A







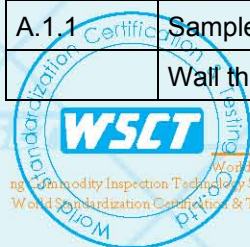
EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	Supply voltage (V) .....		--
	Current in the test circuit (mA) .....		--
6.1.2.2	Exclusions .....		N/A

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		<b>P</b>
6.2.1	Separation requirements	c)	P
6.2.2	Electric strength test procedure		P
6.2.2.1	Impulse test	1.5 kV impulse	P
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		P

<b>6.3</b>	<b>Protection of telecommunication wiring system from overheating</b>		<b>P</b>
	Max. output current (A).....	1.19A	--
	Current limiting method .....	Inherent impedance	--

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		<b>N/A</b>
7.1	General	Not connect to cable distribution system.	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b> <b>UL listed material used.</b>		<b>N/A</b>
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples		--
	Wall thickness (mm) .....		--





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Clause	Requirement – Test	Result – Remark	Verdict
A.1.2	Conditioning of samples; temperature (°C) .....		--
A.1.3	Mounting of samples .....		--
A.1.4	Test flame		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 criteria		N/A

<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		<b>N/A</b>
B.1	General requirements		N/A
	Position .....		--
	Manufacturer .....		--
	Type .....		--







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Clause	Requirement – Test	Result – Remark	Verdict
	Rated values .....		--
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) .....		--
	Electric strength test: test voltage (V) .....		--
B.6	Running overload test for DC motors in secondary circuits		N/A
B.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 DC 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 table 1.5.1
	Type .....	See table 1.5.1
	Rated values .....	See table 1.5.1
	Method of protection .....	By protection circuit
C.1	Overload test	P
C.2	Insulation	(see appended tables 5.2 and C2)
	Protection of displacement of windings :	By bobbin and insulation tape

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





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Clause	Requirement – Test	Result – Remark	Verdict

<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b>		<b>N/A</b>
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<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)</b>		<b>P</b>
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<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		<b>N/A</b>
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 levels (V).....		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances.....		N/A

<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		<b>N/A</b>
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<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		<b>N/A</b>
	Metal(s) used .....		--

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

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b>	<b>P</b>
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

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

<b>N</b>	<b>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)</b>	<b>P</b>
N.1	ITU-T impulse test generators	P





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Clause	Requirement – Test	Result – Remark	Verdict
N.2	IEC 60065 impulse test generator		N/A

<b>P</b>	<b>ANNEX P, NORMATIVE REFERENCES</b>		--
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<b>Q</b>	<b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>		<b>P</b>
	a) Preferred climatic categories .....	-40°C to 85°C	P
	b) Maximum continuous voltage .....	300Vmin	P
	c) Pulse current .....	considered	P
	Body of the VDR Test according to IEC60695-11-5 .. :		P
	Body of the VDR.Flammability class of material ( min V-1) .....		P

<b>R</b>	<b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>		<b>N/A</b>
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

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

<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		<b>N/A</b>
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<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		<b>P</b>
		VDE approved triple insulated wire used.	--

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

<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		<b>N/A</b>
W.1	Touch current from electronic circuits		N/A







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Clause	Requirement – Test	Result – Remark	Verdict
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

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

<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3) Equipment will not be exposed to ultraviolet light.</b>		<b>N/A</b>
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

<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		<b>P</b>
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<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		<b>N/A</b>
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<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>		<b>--</b>
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<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>		<b>N/A</b>
CC.1	General		N/A
CC.2	Test program 1.....		N/A
CC.3	Test program 2.....		N/A
CC.4	Test program 3.....		N/A
CC.5	Compliance.....		N/A

<b>DD</b>	<b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b>		<b>N/A</b>
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



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Clause	Requirement – Test	Result – Remark	Verdict
DD.4	Compliance.....:		N/A

<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>	<b>N/A</b>
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**EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013– CENELEC COMMON MODIFICATIONS**

	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it's amendmets are prefixed "Z"	P
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 4.7.3.1 Note 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	P
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	P







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	*Note of secretary: Text of Common Modification remains unchanged.		
1.1.1 (A1:2010)	<b>Replace</b> the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimediaequipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN60065 applies.		P
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressureThe apparatus shall be so designed andconstructed as to present no danger when usedfor its intended purpose, either in normaloperating conditions or under fault conditions,particularly providing protection against exposure to excessive sound pressures from headphonesor earphones. NOTE Z1 A new method of measurement is describedin EN 50332-1, Sound system equipment:Headphones and earphones associated with portableaudio equipment - Maximum sound pressure levelmeasurement 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 portableaudio equipment - Maximum sound pressure levelmeasurement methodology and limit considerations – Part 2: Guidelines to associate sets with headphonescoming from different manufacturers.		N/A
(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 /A12:2010		N/A
1.5.1 (Added)	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		N/A





EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
info*)	New Directive 2011/65/11 *		
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 standard and amendments.		N/A
	<b>Zx Protection against excessive sound pressure from personal music players.</b>		<b>N/A</b>
	<b>Zx.1 General</b> 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. <b>A personal music player is a portable equipment</b> 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 players is connected to an external amplifier; or		N/A







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>-while the headphones or earphones are not used.</p> <p>NOTE 2 An external amplifier which is not part of the personal music players or the listening device, but which is intended to play the music as a standalone music player.</p> <p>The requirements do not apply to:</p> <p>-hearing aid equipment and professional equipment;</p> <p>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.</p> <p>-analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</p> <p>NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years is will no longer exist. This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		
	<p><b>Zx.2 Equipment requirements</b></p> <p>No safety provision is required for equipment that complies with the following:</p> <p>-equipment provided as a package (personal music player with its listening device), where the acoustic output <math>L_{Aeq,T} \leq 85</math> dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and</p> <p>-a personal music player provided with an analogue electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</p> <p>NOTE 1 wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level <math>L_{Aeq,T}</math> is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p>		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	<p>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</p> <p>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 dose not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> <li>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</li> <li>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</li> </ol> <p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) measured over the dutation of the song is lower than the average produced by the programme simulation noise, the warning dose not need to be given as long as the average sound pressure of the song is below the basic limit of 85dBA. In this case T</p>		







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) where 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 dose not need to be give as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>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 acknowledgedment as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		
	<p><b>Zx.3 Warning</b></p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>- The symbol of Figure 1 with a minimum height of 5 mm; and</li> <li>- The following wording, or similar:</li> </ul> <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p> <div data-bbox="448 1284 823 1509" data-label="Image"> <p>Figure 1 – Warning label (IEC 60417-6044)</p> </div> <p>Alternatively, the entire warning may be give through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N/A
	<p><b>Zx.4 Requirements for listening devices (headphones and earphones)</b></p>		--
	<p><b>Zx.4.1 Wired listening devices with analogue input</b></p> <p>With 94 dBA sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including</p>		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	<p>any available setting (for example built-in volume level control).</p> <p>NOTE The values of dBA -75 mV correspond with 85 dBA -27 mV and 100 dBA -150 mV.</p>		
	<p><b>Zx.4.2 Wired listening devices with digital input</b></p> <p>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 <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>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.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>		N/A
	<p><b>Zx.4.3 Wireless listening devices</b></p> <p>In wireless mode:</p> <ul style="list-style-type: none"> <li>- with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>- respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>- 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 <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA</li> </ul> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p>		N/A
	<p><b>Zx.5 Measurement methods</b></p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated</p>		N/A







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		
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): 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;		P
	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.		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".		N/A





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Clause	Requirement – Test	Result – Remark	Verdict
	<p>In table 3B, replace the first four lines by the following:</p> <p>Up to and including 6   0,75<sup>a)</sup>  </p> <p>Over 6; up to and including 10   (0,75)<sup>b)</sup> 1,0 </p> <p>Over 10 up to and including 16   (1,0)<sup>c)</sup> 1,5 </p> <p>In the conditions applicable to table 3B, delete the words "in some countries" in condition<sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete thesecond sentence.</p>		
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designationscorresponding to the IEC cord types are given inAnnex 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 4   Delete the fifth line : conductor sizes for 13 to 16 A.		N/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(artificial 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 exceece 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
Bibliograp- hy	Additional EN standards.		—
<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>		—







EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
<b>ZB ANNEX(normative)</b>		<b>SPECIAL NATIONAL CONDITIONS(EN)</b>	
1.2.4.1	In <b>Denmark</b> , 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 <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex		N/A
1.5.7.1 (A11:2009)	In <b>Finland, Norway</b> and <b>Sweden</b> , 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 resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In <b>Norway</b> , 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).		N/A
1.5.9.4	In <b>Finland, Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	In <b>Finland, Norway</b> and <b>Sweden</b> , 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 <b>Finland</b> : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In <b>Norway</b> : "Apparatet må tilkoples jordet stikkontakt" In <b>Sweden</b> : "Apparaten skall anslutas till jordat uttag"		N/A
1.7.2.1(A11:2009)	In <b>Norway</b> and <b>Sweden</b> , 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.		N/A





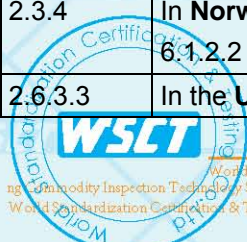
EN60950-1			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following 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. 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).”</p>		
	<p>NOTE In Norway, due to regulation for installations of cabledistribution systems, and in Sweden, a galvanic isolator shallprovide electrical insulation below 5 MHz. The insulation shallwithstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz,for 1 min.</p> <p>Translation to Norwegian (the Swedish text willalso be accepted in Norway):“Utstyr som er koplet til beskyttelsesjord vianettplugg og/eller via annet jordtilkoplettutstyr – og er tilkoplett et kabel-TV nett, kanforårsake brannfare. For å unngå dette skal detved tilkopling av utstyret til kabel-TV nettetinstalleres en galvanisk isolator mellom utstyretog kabel- TV nettet.”Translation to Swedish:”Utrustning som är kopplad till skyddsjord viajordat vägguttag och/eller via annanutrustning och samtidigt är kopplad till kabel-TVnät kan i vissa fall medfra risk frbrand. Fr att undvika detta skall vid anslutningav utrustningen till kabel-TV nätgalvanisk isolator finnas mellan utrustningen ochkabel-TV nätet.”</p>		N/A
1.7.2.1 (A2:2013)	<p>In <b>Denmark</b>, CLASS I PLUGGABLEEQUIPMENT TYPE A intended for connection toother equipment or a network shall, if safety relieson connection to protective earth or if surgesuppressors are connected</p>		N/A







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	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 <b>Denmark</b> shall be as follows: In <b>Denmark</b> : “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		
1.7.5	In <b>Denmark</b> , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
1.7.5 (A11:2009)	For <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		
1.7.5 (A2:2013)	In <b>Denmark</b> , 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 <b>Norway</b> , 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 <b>Finland, Norway and Sweden</b> 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 <b>Norway</b> , 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 <b>United Kingdom</b> , the current rating of the circuit		N/A





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	shall be taken as 13 A, not 16 A.		
2.7.1	In the <b>United Kingdom</b> , 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
2.10.5.13	In <b>Finland, Norway and Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In <b>Switzerland</b> , 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		N/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 230/400V, 16 A SEV 5933-2.1998 Plug Type 21, L+N, 250V, 16A SEV 5934-2.1998 Plug Type 23, L+N+PE 250V, 16 A		N/A
3.2.1.1	In <b>Denmark</b> , supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N/A







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	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.		
3.2.1.1 (A2:2013)	<p>In <b>Denmark</b>, supply cords of single-phase equipment having a rated current not exceeding 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.</p> <p>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.</p> <p>Justification the Heavy Current Regulations, 6c</p>		N/A
3.2.1.1	<p>In <b>Spain</b>, 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.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>		N/A
3.2.1.1	In the <b>United Kingdom</b> , 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		N/A





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	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.		
3.2.1.1	In <b>Ireland</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the <b>United Kingdom</b> , a power supply cord with conductor of 1,25 mm <sup>2</sup> 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 <b>United Kingdom</b> , 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 <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.		N/A
4.3.6	In the <b>United Kingdom</b> , 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 <b>Ireland</b> , DIRECT PLUG-IN EQUIPMENT is known		N/A







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	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.		
5.1.7.1	<p>In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that                             <ul style="list-style-type: none"> <li>is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>		N/A
6.1.2.1 (A1:2010)	<p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>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</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11</li> </ul>		N/A





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	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.		
	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; - 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.		N/A
6.1.2.2	In <b>Finland, Norway and Sweden</b> , 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.		N/A
7.2	In <b>Finland, Norway and Sweden</b> , 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.		N/A
7.3	In <b>Norway and Sweden</b> , for requirements see		N/A







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(A11:2009)	1.2.13.14 and 1.7.2.1 of this annex.		





1.5.1	TABLE: list of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Certification No.
Enclosure	SABIC INNOVATIVE PLASTICS B V	SHF4910(G G)	V-0, 130 °C, min. thickness 1.5mm.	UL94	UL E45329
Inlet	Zhejiang LECI Electronics Co., Ltd	DB-14	10A, 250V	IEC/EN 60320-1	VDE
Internal wire	Various	Various	105°C, min. 18AWG, 600V.	UL 758	UL
Earth wire	Various	Various	105°C, min. 18AWG, 600V.	UL 758	UL
Resistor (R1,R2)	Various	Various	0.91Mohm, min.1/8W	EN60950-1	Test with appliance
PCB	Mei Zhou Li Yu Da Circuit Board Co Ltd	LYD-2	V-0, 130 °C	UL 796	UL E320265
(Alt.)	DONGGUAN HUAXING CIRCUIT BOARD FACTORY	KB-5150	V-0, 130 °C	UL 796	UL E230194
(Alt.)	Various	Various	V-0, 130 °C	UL 796	UL
Fuse (F1)	XC ELECTRONICS (SHENZHEN) CORP LTD	5TE	T3.15A, 250 Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40029550
(Alt.)	CONQUER ELECTRONICS CO LTD	MST	T3.15A, 250 Vac	IEC/EN 60127-1 IEC/EN 60127-3	UL E82636 VDE 40017118
(Alt.)	Shenzhen Lanson Electronics CO LTD	SMT	T3.15A, 250 Vac	IEC/EN 60127-1 IEC/EN 60127-3	UL E221465 VDE 40012592
Varistor (RV1) (Optional)	JOYIN CO LTD	10S561K, 14S561K	300Vac, 85°C	EN 61051-1 EN 61051-2 EN 61051-2-2 UL1449	VDE 40004658 UL E325508
(Alt.)	BRIGHTKING(BEIJING)CO.,LTD	10D561K 14D561K	300Vac, 85°C	EN 61051-1 EN 61051-2 EN 61051-2-2	VDE 40027827
X-capacitor (CX1)	Shenzhen Su Rong Capacitors Co., Ltd.	MPX/MKP	Max.0.47uF, 280Vac, X2 Type, 105°C	EN 60384-14	VDE 40008924,
(Alt.)	Dain Electronics Co., Ltd	MPX	Max.0.47uF, 275Vac, X2 Type, 110°C	EN 60384-14 UL 1414	VDE40018798, UL E147776
(Alt.)	Shenzhen Jing Yu Electronics Co.,Ltd	CBBX2	Max.0.47uF, 275Vac, X2 Type, 105°C	EN 60384-14 UL 1414	VDE40006514, UL E230035







(Alt.)	Shenzhen Yimanfeng Science And Technology Co., Ltd.	MKP	Max.0.47uF, 280Vac, X2 Type, 105°C	EN 60384-14 UL 1414	VDE 40028516 UL E315567
(Alt.)	Fuxin Pan Ocean Electronic Ltd.	MPX-X2	Max.0.47uF, Min.275Vac, X2 Type 110°C	EN 60384-14	VDE 40015756
(Alt.)	Xiamen Faratronic Co. Ltd	MKP62	Max.0.47uF, 275Vac, X2 Type 110°C	EN 60384-14 UL 1414	VDE40000358, UL E186600
(Alt.)	Shantou High-New Technology Dev. Zone Songtian Enterprise Co., Ltd.	MPX	Max.0.47uF,275 Vac, X2 Type 110°C	EN 60384-14 UL 1414	VDE 40034679 UL E208107
(Alt.)	Dongguan Easy-gather Electronic Co., Ltd.	MKP-X2	Max.0.47uF,275 Vac, X2 Type 110°C	EN 60384-14 UL 1414	VDE40022258 UL E252221
Y- capacitor (CY1, CY2, CY3, CY4, CY5)	Dongguan Easy-gather Electronic Co., Ltd.	DCF	Max.2200pF, 400Vac, 125°C, Y1 type	EN 60384-14 UL 1414	VDE 40022942, UL E252221
(Alt.)	Shantou High-New TechnologyDev. Zone Songtian Enterprise Co., Ltd.	CD	Max. 2200pF, min.250Vac, 125°C, Y1 type	EN 60384-14 UL 1414	VDE 40025754 UL E208107
(Alt.)	Yinan Don's Electronic Component Co.,Ltd	CT81	Max. 2200pF, min.250Vac, 125°C, Y1 type	EN 60384-1 UL 1414	VDE 135256 UL E145038
(Alt.)	NANJING YUYUE ELECTRONICS CO.,LTD	CT7	Max. 2200pF, 400Vac, 125°C, Y1 type	EN 60384-14 UL 1414	VDE 40008010 UL E237728
(Alt.)	VISHAY Electronic GmbH	VY1	Max. 2200pF, 500Vac, 125°C, Y1 type	EN60384-14 UL 1414	VDE 40012673 UL E183844
(Alt.)	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 2200pF, min.250Vac, 125°C, Y1 type	EN 60384-14 UL 1414	VDE 40036246 UL E154899
(Alt.)	JYA-NAY Co., Ltd.	JN	Max. 2200pF, min.250Vac, 125°C, Y1 type	UL 1414	UL E201384





Photo coupler (US1)	COSMO Electronics Corporation	KPC817 K1010	Dti>=0.4mm, 100 °C	EN 60950-1 UL1577	VDE 101347 UL E169586
(Alt.)	Sharp Corporation Electronic Components and Devices Group	PC817	Dti>=0.4mm, 100°C	EN 60950-1 UL1577	VDE 40008087 UL E64380
(Alt.)	Lite-On Electronics Co., Ltd.	LTV-817	Dti=0.5mm, 100 °C	UL1577	UL E113898
(Alt.)	Everlight Electronics Co., Ltd.	EL817	Dti=0.5mm, 100 °C	EN 60950-1 UL1577	VDE 132249 UL E214129
(Alt.)	Bright Led Electronics Corp.	BPC-817	Dti>=0.4mm, 100°C	EN 60950-1 UL1577	VDE 40007240 UL E236324
Insulation Tape (Wrap HS1)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ-280	130°C	UL 510	UL E165111
Insulation sheet	MianYang LongHua Film Co.,Ltd	PP-(i)(j)	Min. 0.4mm thickness, V-0, 100°C	UL 94	UL E254551
Transformer (T1)	QINZHOU CHANGHUI ELECTRONICAL TECHNOLOGY CO.LTD	PT-02-5501 30	Class B	EN60950-1	Test with appliance
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	150°C, V-0	UL94	UL E59481
-Magnet Wire	Tai-I Electric Wire&Cable Co.,Ltd	UEW,UEW B UEWE	130°C	UL1446	UL E85640
-Triple insulation wire	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C	UL1446 EN60950-1	UL E206440 VDE 006735
-(Alt.)	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	130°C	UL1446 EN60950-1	UL E211989 VDE 136581
-(Alt.)	E&B Technology Co.,Ltd	E&B-XXXB	130°C	UL1446 EN60950-1	UL E315265 VDE 40023473
-Tube	CHANGYUAN ELECTRONICS CO., LTD	CB-TT-S	600V, 200°C	UL 510	UL E180908
-(Alt.)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	UL 510	UL E203950
-Varnish	Qualipoly Chemical Corp	1032BOH	130°C	UL1446	UL E213437





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-Insulation Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ-280	130°C	UL 510	UL E165111
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Note:





1.5.1	TABLE: Opto Electronic Devices					P
Manufacturer .....	COSMO Electronics Corporation	Sharp Corporation Electronic Components and Devices Group	Lite-On Electronics Co., Ltd	Everlight Electronics Co., Ltd.	Bright Led Electronics Corp.	
Type .....	KPC817, K1010	PC817	LTV-817	EL817	BPC-817	
Separately tested .....	VDE, UL	VDE, UL	VDE, UL	VDE, UL	VDE, UL	
Bridging insulation .....	RI	RI	RI	RI	RI	
External creepage distance (mm) .....	5.2, 6.5	8.2	7.6	7.6	7.6	
Internal creepage distance (mm) .....	5.2, 6.5	4.0	7.6	7.6	7.6	
Distance through insulation (mm) .....	≥0.4	≥0.5	≥0.5	≥0.5	≥0.4	
Tested under the following conditions .....	N/A	N/A	N/A	N/A	N/A	
Input .....	--	--	--	--	--	
Output .....	--	--	--	--	--	
Supplementary information: RI: reinforced insulation						

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	Irated (A)	I (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
90V50Hz	--	1.232	69.23	F1	1.232	Loading 55V, 1100mA
100V50Hz	1.5	1.103	69.19	F1	1.103	Loading 55V, 1100mA
240V50Hz	1.5	0.610	68.81	F1	0.610	Loading 55V, 1100mA
264V50Hz	--	0.589	68.93	F1	0.589	Loading 55V, 1100mA
90V60Hz	--	1.209	69.24	F1	1.209	Loading 55V, 1100mA
100V60Hz	1.5	1.103	69.02	F1	1.103	Loading 55V, 1100mA
240V60Hz	1.5	0.604	68.67	F1	0.604	Loading 55V, 1100mA
264V60Hz	--	0.538	68.92	F1	0.538	Loading 55V, 1100mA

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
55	1.1	54.86	1.19	62.81	

Note(s):







2.1.1.5 c) 2)	TABLE: stored energy	N/A
Capacitance C ( $\mu$ F)	Voltage U (V)	Energy E (J)
Note(s):		

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P
Component (measured between)	max. Voltage	Voltage Limitation Component
	V peak	V d.c.
T1 pin 7-FA	261	--
After DS1	--	50.5
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)
DS1 short	0	
Supplementary information:		

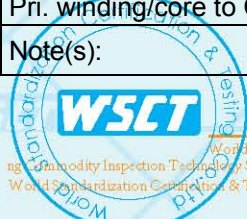
2.5	TABLE: limited power source measurement	P	
Circuit output tested:			
Note: Measured Uoc (V) with all load circuits disconnected:			
Components	Uoc(V)	I <sub>sc</sub> (A)	VA
		Meas.	Limit
Output/normal	54.86	1.19	8
R17/Sc	54.50	1.19	8
U1 PIN1-2/Sc	0	0	8
U1 PIN3-4/Sc	0	0	8
U1 PIN1/Oc	0	0	8
RS7/Sc	32.0	0	8
US2 PIN A-K/Sc	29.20	0	8
Supplementary information:			
Sc=Short circuit, Oc=Open circuit			

2.10.2	Table: working voltage measurement	P	
Location	Peak voltage (V)	RMS voltage (V)	Comments
T1 Pin 1 to Pin FA	524	222	
T1 Pin 2 to Pin FA	544	228	Max. PEAK voltage



<b>T1 Pin 5 to Pin FA</b>	505	230	
T1 Pin 6 to Pin FA	525	<b>239</b>	Max. RMS voltage
T1 Pin 1 to Pin 7	460	258	
T1 Pin 2 to Pin 7	348	212	
T1 Pin 5 to Pin 7	440	227	
T1 Pin 6 to Pin 7	364	226	
CY1 pri.-sec.	340	211	
CY4 pri.-sec.	112	77.2	
US1 Pin 1 to Pin 3	384	233	
US1Pin 1 to Pin 4	380	231	
US1 Pin 2 to Pin 3	384	231	
US1Pin 2 to Pin 4	380	230	
Note :			

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					P
Clearance cl and creepage distance dcr at/of:	Up(V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Functional:						
L to N	340	240	1.5	4.5	2.5	4.5
Basic/supplementary:						
Pri. Side and Sec. Side of F1	340	240	2.0	3.1	2.5	3.1
L to live part after F1	340	240	2.0	3.0	2.5	3.0
L to earth	340	240	2.0	3.4	2.5	3.6
N to earth	340	240	2.0	3.8	2.5	6.6
Pri. Side and Sec. Side of CY2	340	240	2.0	5.0	2.5	5.0
Pri. Side and Sec. Side of CY3	340	240	2.0	6.6	2.5	6.6
Reinforced:						
Pri. Side and Sec. Side of CY1	340	211	4.0	6.6	5.0	6.6
Pri. Side and Sec. Side of CY4	112	77.2	4.0	6.6	5.0	6.6
Pri. Side and Sec. Side of US1	384	233	4.0	6.9	5.0	6.9
Live part to accessible enclosure	340	240	4.0	6.0	5.0	6.0
Pri. trace to sec. trace of T1 on PCB	544	239	4.4	6.9	5.0	6.9
Pri. winding/core to sec. pin of T1	544	239	4.4	6.1	5.0	6.1
Pri. winding/core to US1 SEC. PIN	544	239	4.4	6.2	5.0	6.2
Pri. winding/core to CS4	544	239	4.4	6.0	5.0	6.0
Note(s):						







2.10.5	TABLE: distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Enclosure	340	240	3000	0.4	1.9
Insulation sheet	544	240	544	239	0.41
Note(s):					

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

4.5	TABLE: Thermal requirements				P
Test voltage(V).....:	90V60Hz (lable up)	90V60Hz (lable down)	264V50Hz (lable up)	264V50Hz (lable down)	—





Ambient T <sub>min</sub> (°C).....:	40.0	40.0	40.0	40.0	—
Ambient T <sub>max</sub> (°C).....:	40.0	40.0	40.0	40.0	—
maximum temperature T of part/at:	T(°C)				allowed T <sub>max</sub> (°C)
Inlet	66.1	67.7	62.7	67.8	70
Input wire	78.4	80.1	73.5	80.2	105
RV1	81.2	83.3	81.0	83.4	85
CX1	86.6	87.5	85.7	87.6	100
LF2	110.1	111.1	109.9	111.2	130
PCB near BD1	102.0	102.9	101.6	103.0	130
PCB near Q1	113.2	114.7	113.0	114.8	130
US1	96.9	98.3	95.7	98.5	100
T1 winding	105.9	107.2	107.4	107.3	110
T1 core	103.6	105.5	104.4	105.6	110
PCB near T1	99.5	100.2	99.9	100.4	130
CY1	100.8	105.2	101.6	105.3	125
PCB near DS1	98.2	97.4	98.6	98.6	130
CS3	88.1	88.5	89.0	88.6	105
CS2	96.8	96.4	97.6	97.1	105
LS2	86.5	87.3	87.8	87.4	130
C1	96.6	98.9	85.2	87.0	105
DC cord	79.9	81.6	80.9	81.7	105
PCB near T1(management board)	102.1	101.9	103.0	102.4	130
PCB near U1(management board)	62.2	68.3	63.2	68.4	130
PCB near Q1(management board)	79.1	81.9	80.2	82.0	130
Enclosure inside above T1	76.4	72.1	75.4	76.8	125
Enclosure outside above T1	70.9	63.9	70.2	70.7	95
Enclosure inside under T1	82.5	87.6	80.7	87.7	120
Enclosure outside under T1	65.7	76.7	65.9	76.8	95
Temperature T of winding	R1(Ω)	R2(Ω)	T(°C)	Allowed Tmax(°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)
Transformer bobbin		125	0.9
Supplementary information:			

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

5.1.6	TABLE: touch current measurement				P
Condition	L→terminal A (mA)	N→terminal A (mA)	Limit (mA)	Comments	
L/N to enclosure	0.005	0.005	0.25	--	
L/N to POE port	0.208	0.208	0.25	--	
L/N to LAN port	0.208	0.208	0.25	--	
L/N to earth	0.182	0.182	3.5	--	
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
L to N (open F1)		AC	1500	No
L to earth		AC	1500	No
L&N to enclosure		AC	3000	No
L&N to output terminal		AC	3000	No
T1 pri. winding/core to sec. winding		AC	3000	No
1 layer insulation tape		AC	3000	No
Supplementary information:				

5.3	TABLE: fault condition tests		P
	ambient temperature (°C) .....	See below	—





Power source for EUT: ManuFacterer, model/type, output rating .....		--		—		
Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Observation
Output	s-c	240	9h50min	F1	0.638	Maximum temperature measured: T1 Winding : 106.5°C T1 Core :103.7°C Ambient: 40.0°C no hazard.
Output	s-c	240	10min	F1	0.037	Unit Shutdown, recoverable, no hazard.
BD1	s-c	240	1s	F1	0	F1 opened immediately, no hazard
C1	s-c	240	1s	F1	0	F1 opened immediately, no hazard
Q1 Pin D-S	s-c	240	1s	F1	0	F1 opened immediately, Q1 damaged, no hazard
Q1 Pin D-G	s-c	240	1s	F1	0	F1 opened immediately, Q1 damaged, no hazard
U1 Pin 1-2	s-c	240	10min	F1	0.036-0.125	Input & Output bouncing, recoverable, no hazard.
U1 Pin 3-4	s-c	240	10min	F1	0.074	Unit Shutdown, recoverable, no hazard.
U1 Pin 1	o-c	240	10min	F1	0.074-0.340	Input & Output bouncing, recoverable, no hazard.
T1 Pin 1-3	s-c	240	10min	F1	0.071-0.185	Input & Output bouncing, recoverable, no hazard.
T1 Pin 5-6	s-c	240	10min	F1	0.069-0.160	Input & Output bouncing, recoverable, no hazard.
T1 sec. pin	s-c	240	10min	F1	0.072-0.184	Input & Output bouncing, recoverable, no hazard.
DS1	s-c	240	10min	F1	0.074-0.195	Input & Output bouncing, recoverable, no hazard.
CS3	s-c	240	10min	F1	0.074-0.126	Input & Output bouncing, recoverable, no hazard.
RS7	s-c	240	1h16min	F1	0.403	Input current reduced, no hazard.
US2 PIN A-K	s-c	240	10min	F1	0.414	Input current reduced, recoverable, no hazard.





R17	s-c	240	2h44min	F1	0.618	Maximum temperature measured: T1 Winding : 108.3°C T1 Core :106.5°C Ambient: 40.0°C no hazard.
-----	-----	-----	---------	----	-------	--

Supplementary information:

The unit passed 3000V hi-pot test between primary and accessible output connector after each single fault test above.

1. In fault column, s-c=short-circuited, o-c=open-circuited, o-l=over-loaded.
2. During the fault condition each test where components damaged, the test was repeated three times with the same result obtained.
3. Transformer winding and core temperature limit is 165°C (175-10).

Supplementary information:

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)
T1 Primary/core to secondary	Reinforced Insulation	544	239	3000Vac	4.4	5.0	TIW
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
T1 Primary/core to secondary	Reinforced Insulation			3000Vac	6.1	6.1	2 layers

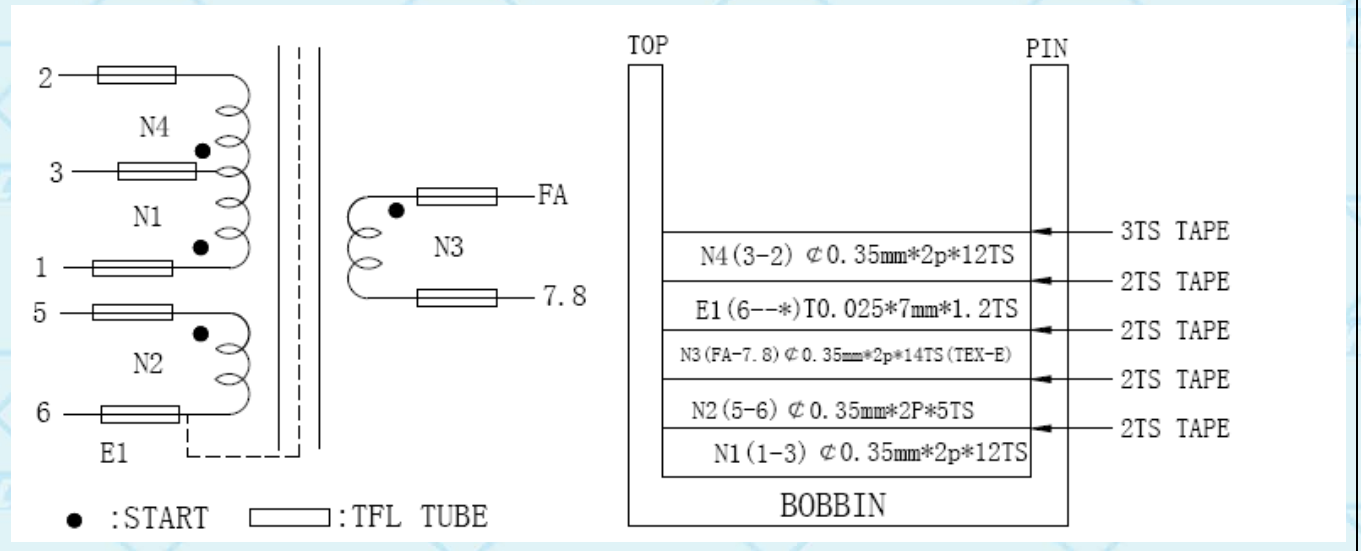
Supplementary information:





C.2	TABLE: transformers	P
-----	---------------------	---

Construction/winding diagram:







**Appendix 1**

Photo documentation

**Photo 1**

View:

**PT-PSE101G-AT**

- front
- rear
- right side
- left side
- top
- bottom
- internal



**Photo 2**

View:

**PT-PSE106GW**

- front
- rear
- right side
- left side
- top
- bottom
- internal







**Photo 3**

View:  
**PT-PSE106GW**

- front
- rear
- right side
- left side
- top
- bottom
- internal



**Photo 4**

View:  
**PT-PSE106GW**

- front
- rear
- right side
- left side
- top
- bottom
- internal

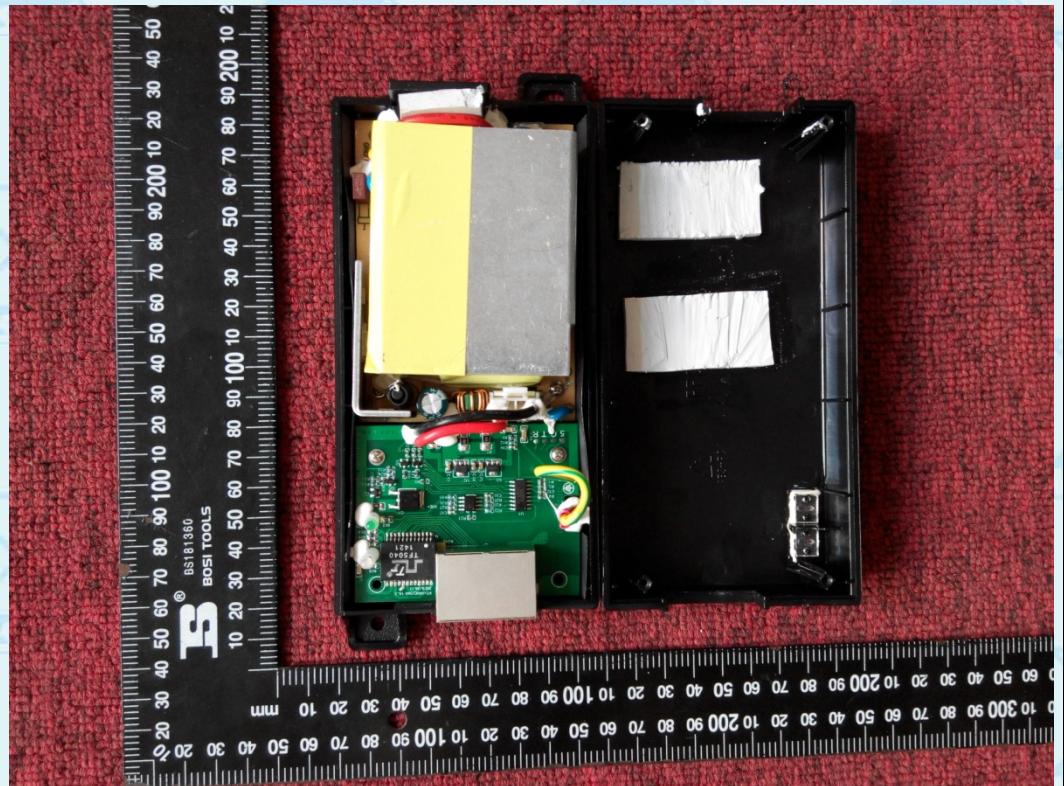






Photo 5

View:

PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

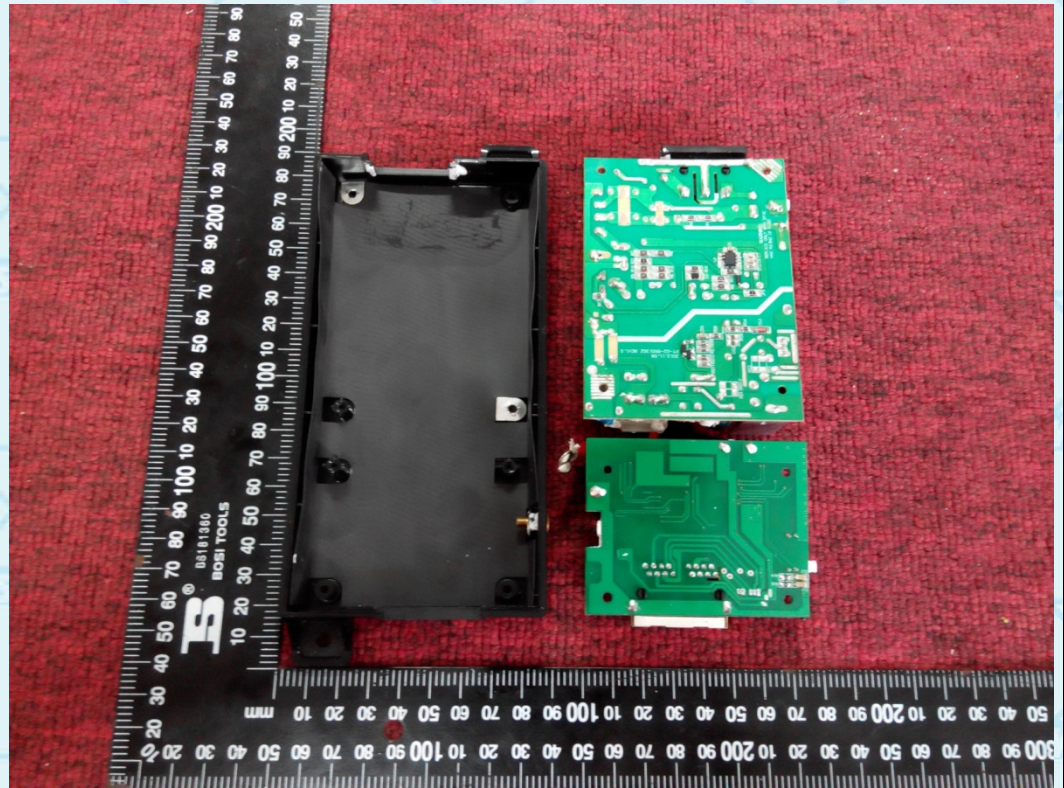


Photo 6

View:

PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal







Photo 7

View:

PT-PSE106GW

front

rear

right side

left side

top

bottom

internal

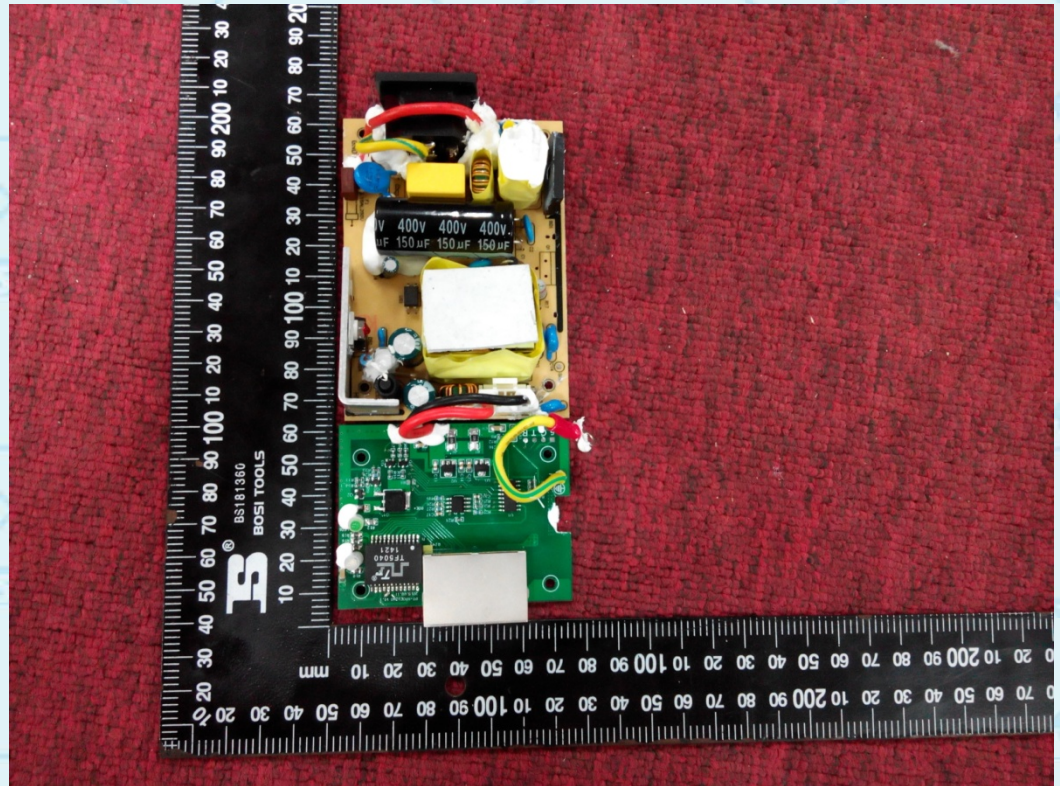


Photo 8

View:

PT-PSE106GW

front

rear

right side

left side

top

bottom

internal

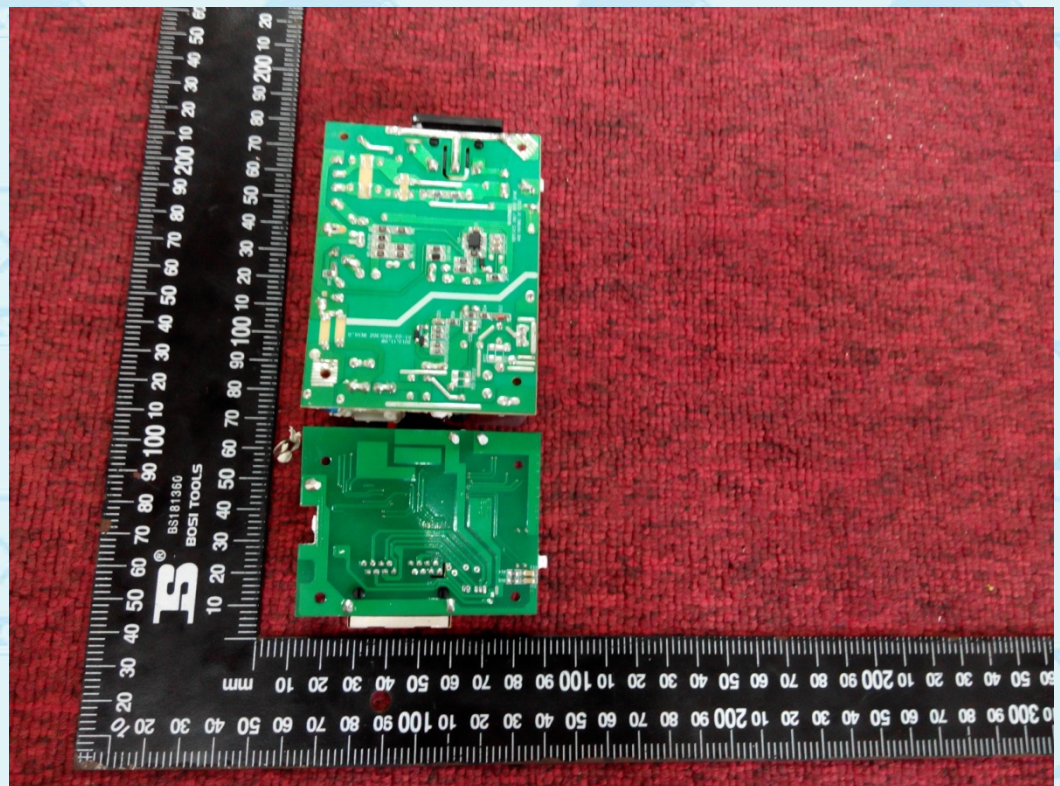






Photo 9

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

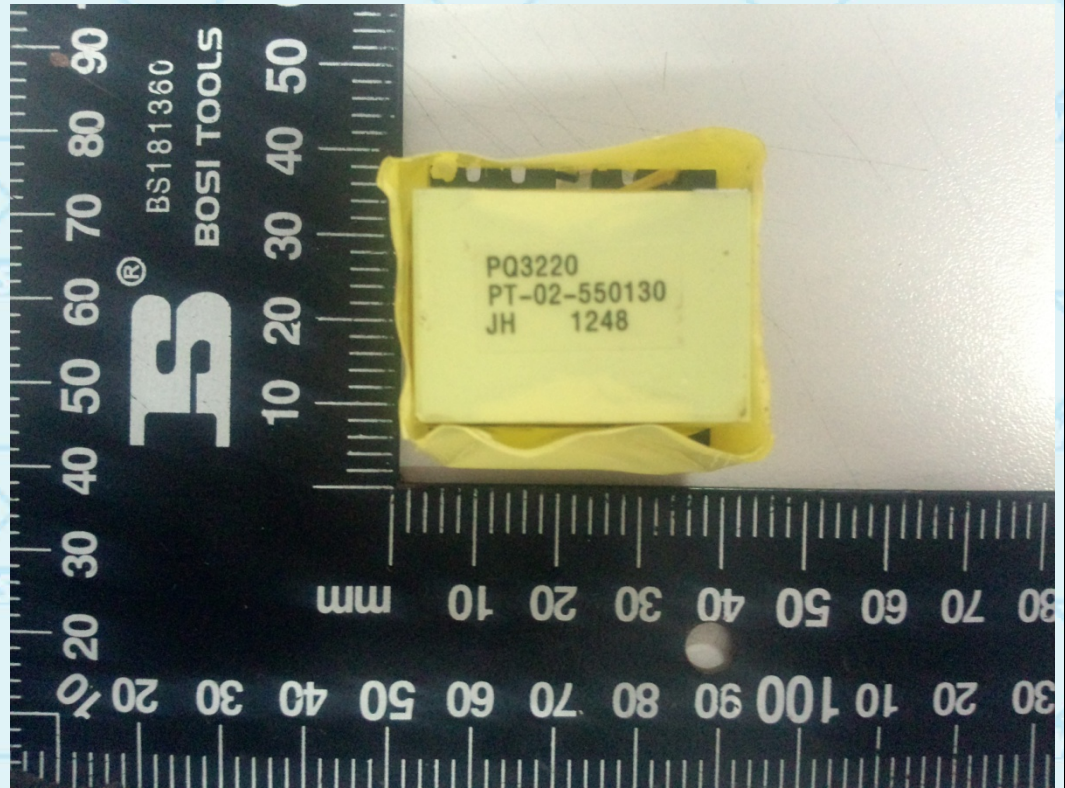


Photo 10

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

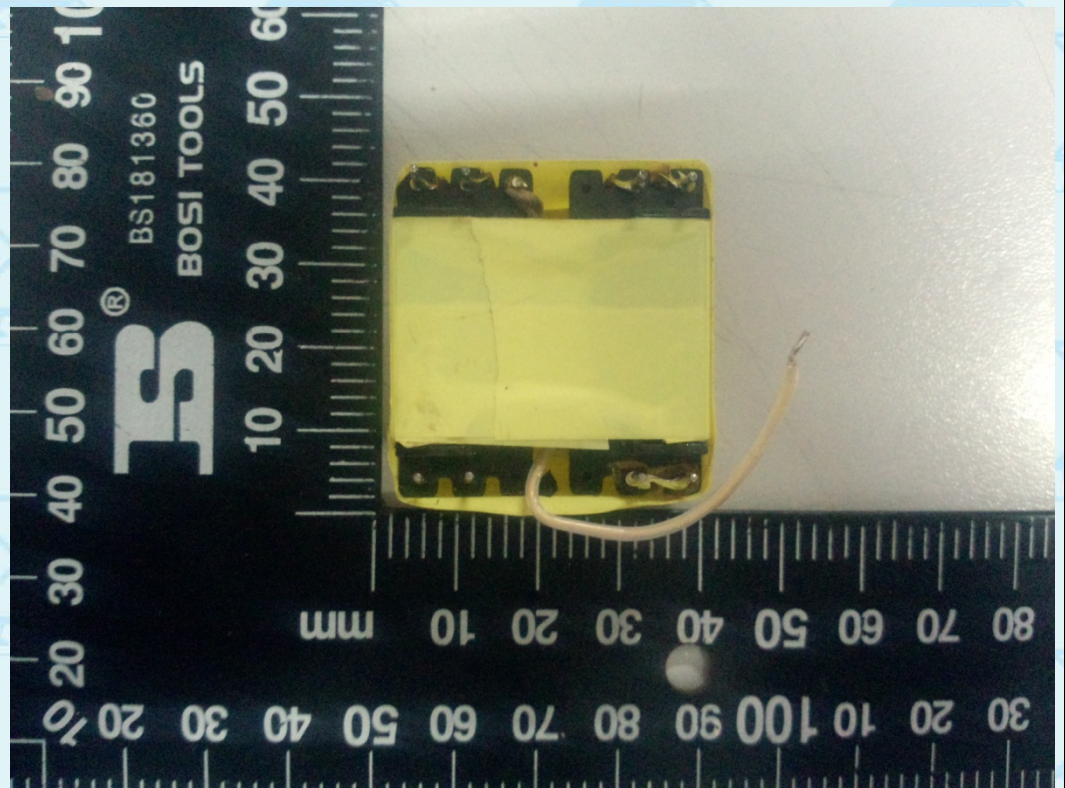






Photo 11

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

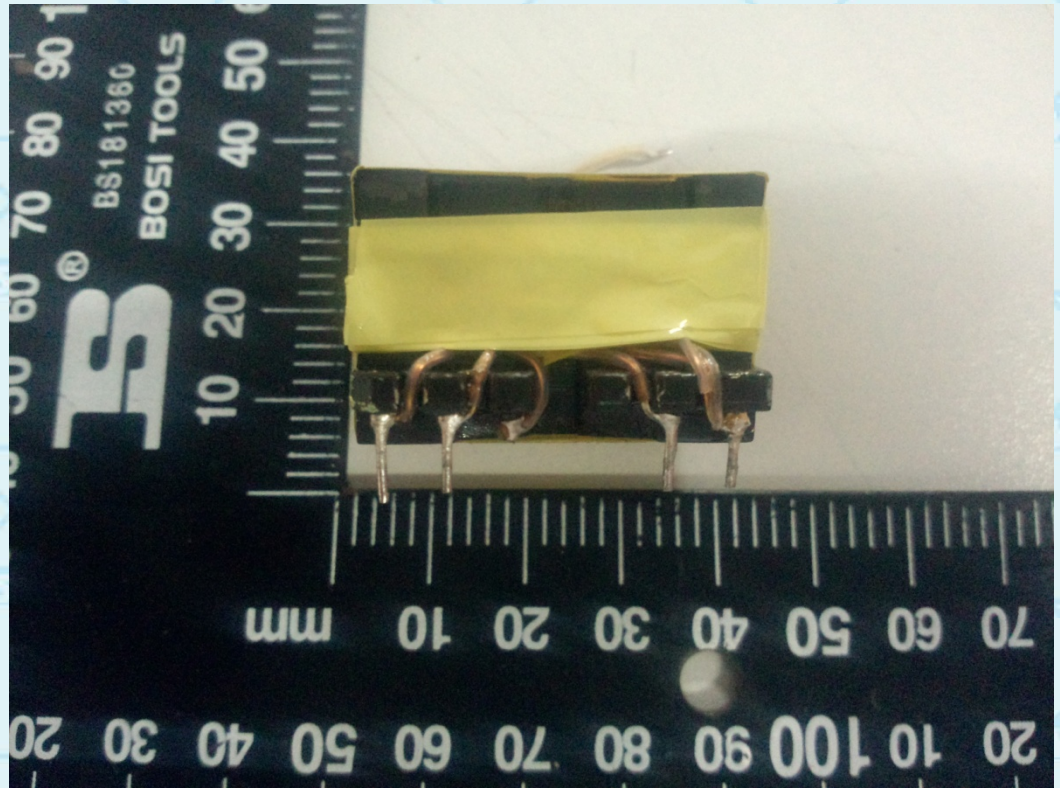


Photo 12

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

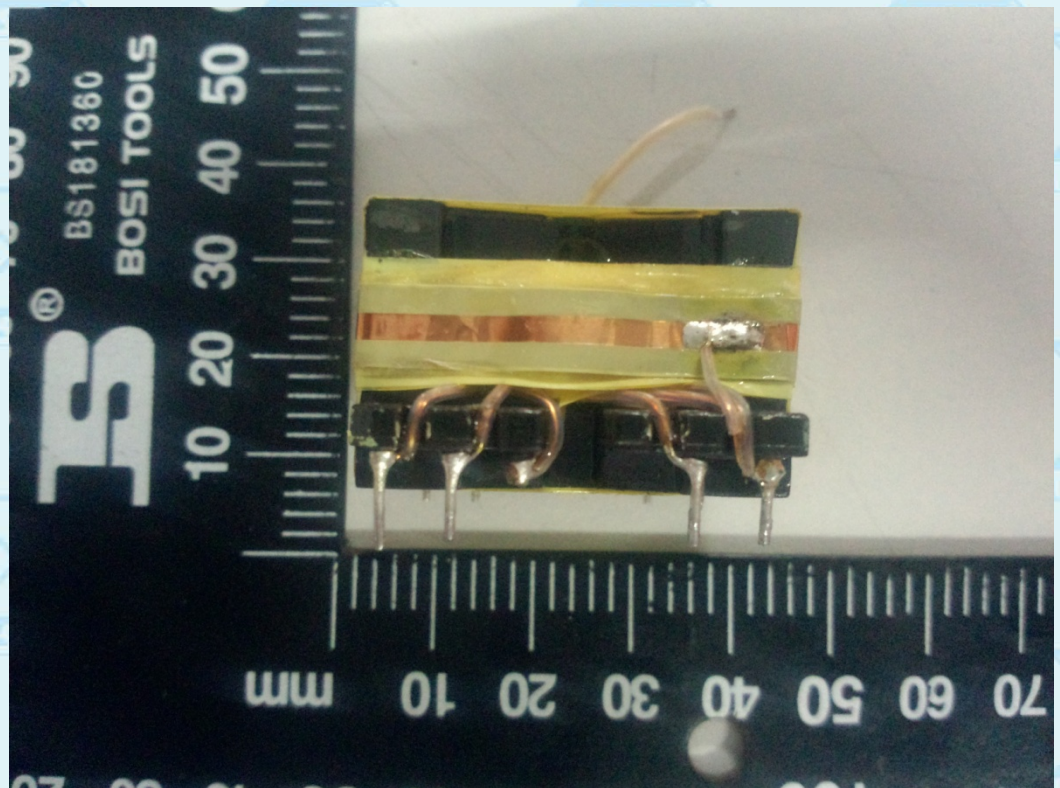






Photo 13

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

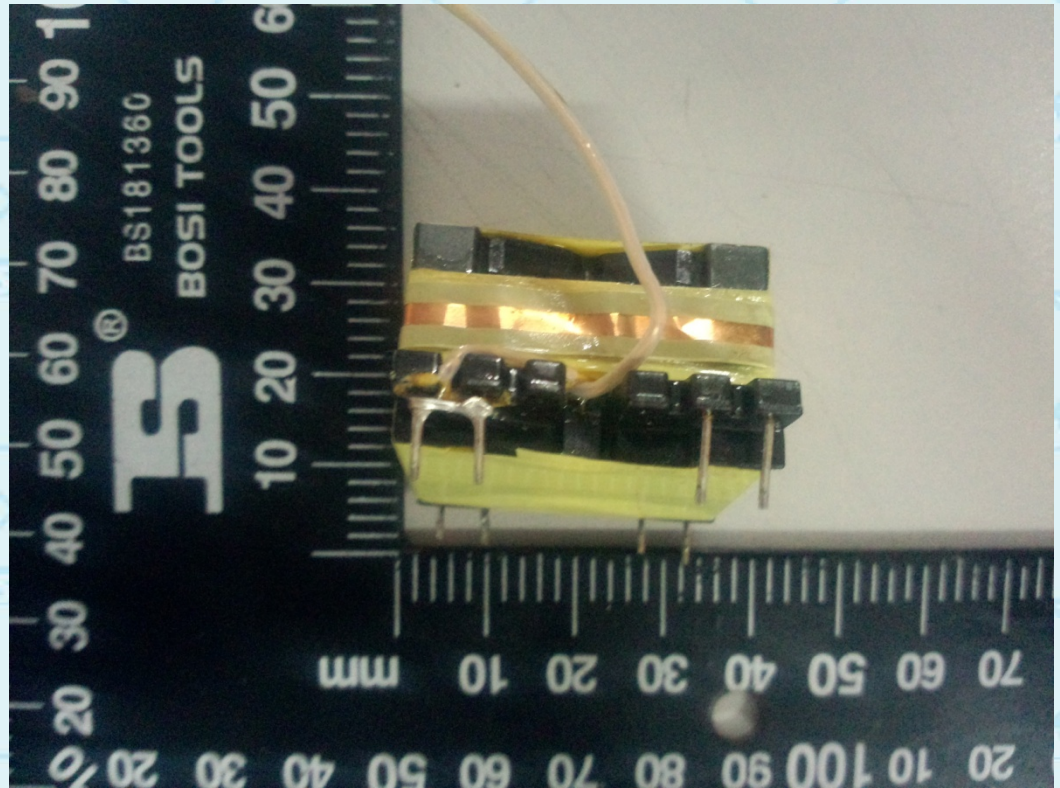
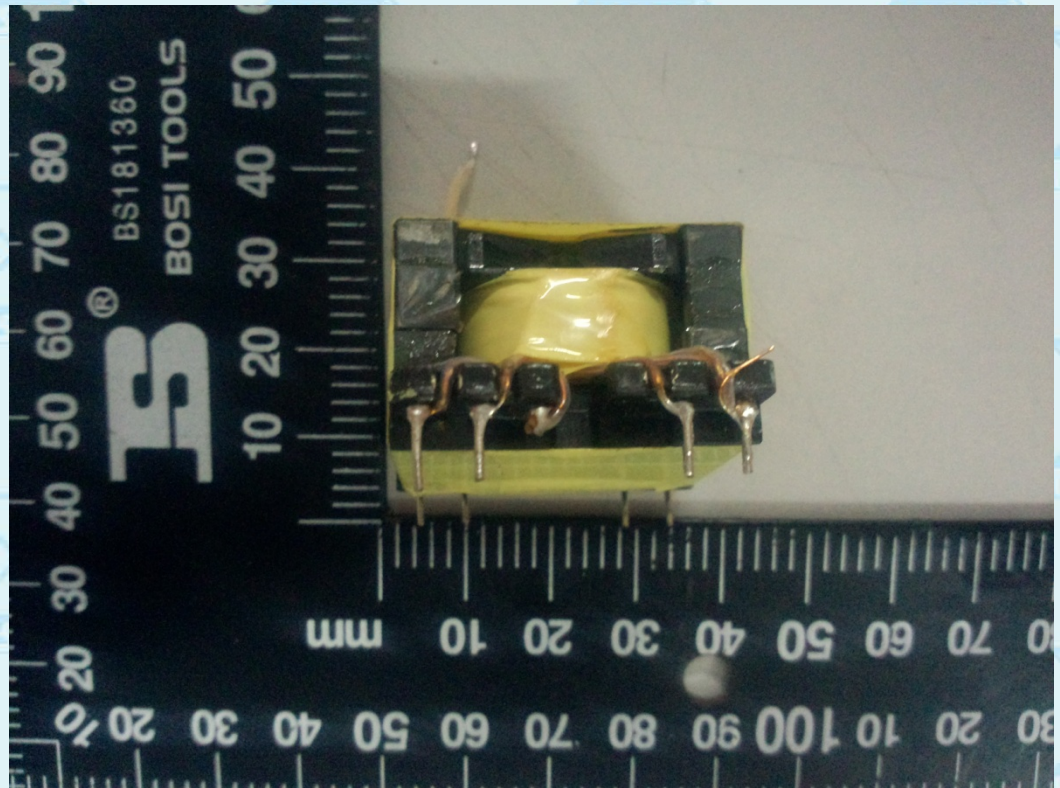


Photo 14

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal







**Photo 15**

View:  
**PT-PSE106GW**

front

rear

right side

left side

top

bottom

internal

A photograph showing the internal components of a PT-PSE106GW component. The component is a small, rectangular electronic device with a yellow-green top layer and a dark bottom layer. It is mounted on a black printed circuit board (PCB) with several gold-colored solder joints. A thin white wire is connected to the top of the component. The component is placed on a black ruler with white markings, showing its size. The ruler has markings in millimeters and centimeters. The text 'BS181360 BOSI TOOLS' is visible on the ruler.

**Photo 16**

View:  
**PT-PSE106GW**

front

rear

right side

left side

top

bottom

internal

A photograph showing the internal components of a PT-PSE106GW component, similar to Photo 15. The component is a small, rectangular electronic device with a yellow-green top layer and a dark bottom layer. It is mounted on a black printed circuit board (PCB) with several gold-colored solder joints. A thin white wire is connected to the top of the component. The component is placed on a black ruler with white markings, showing its size. The ruler has markings in millimeters and centimeters. The text 'BS181360 BOSI TOOLS' is visible on the ruler.







Photo 17

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

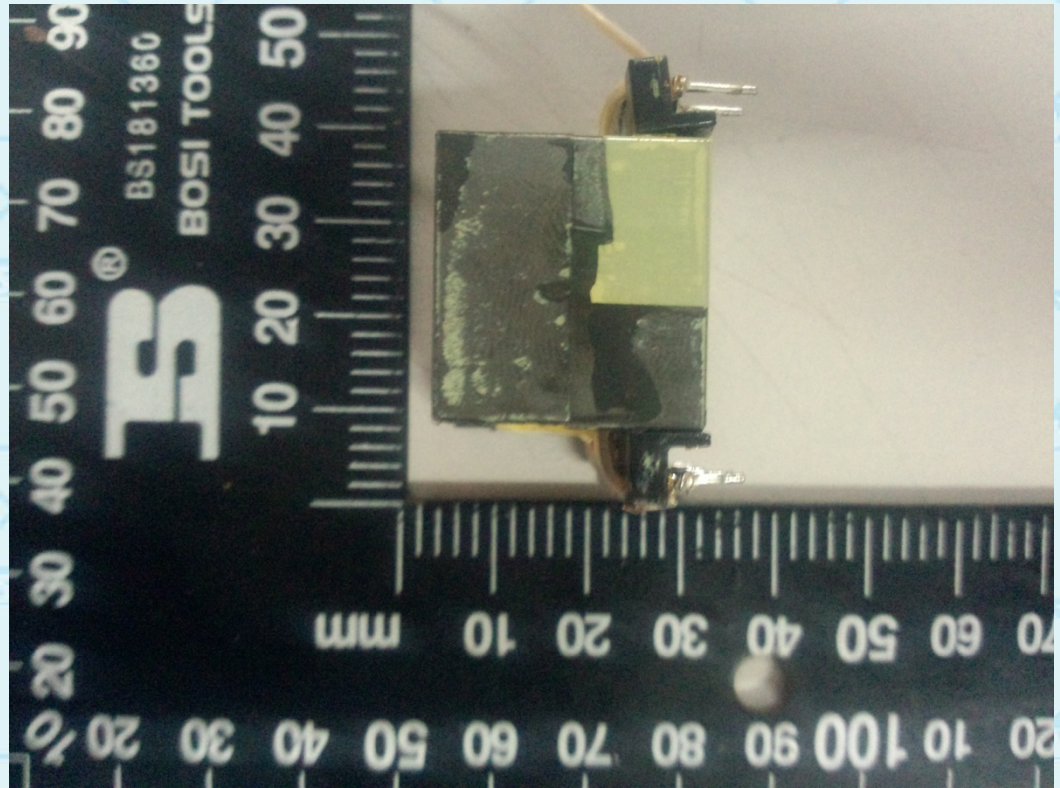


Photo 18

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

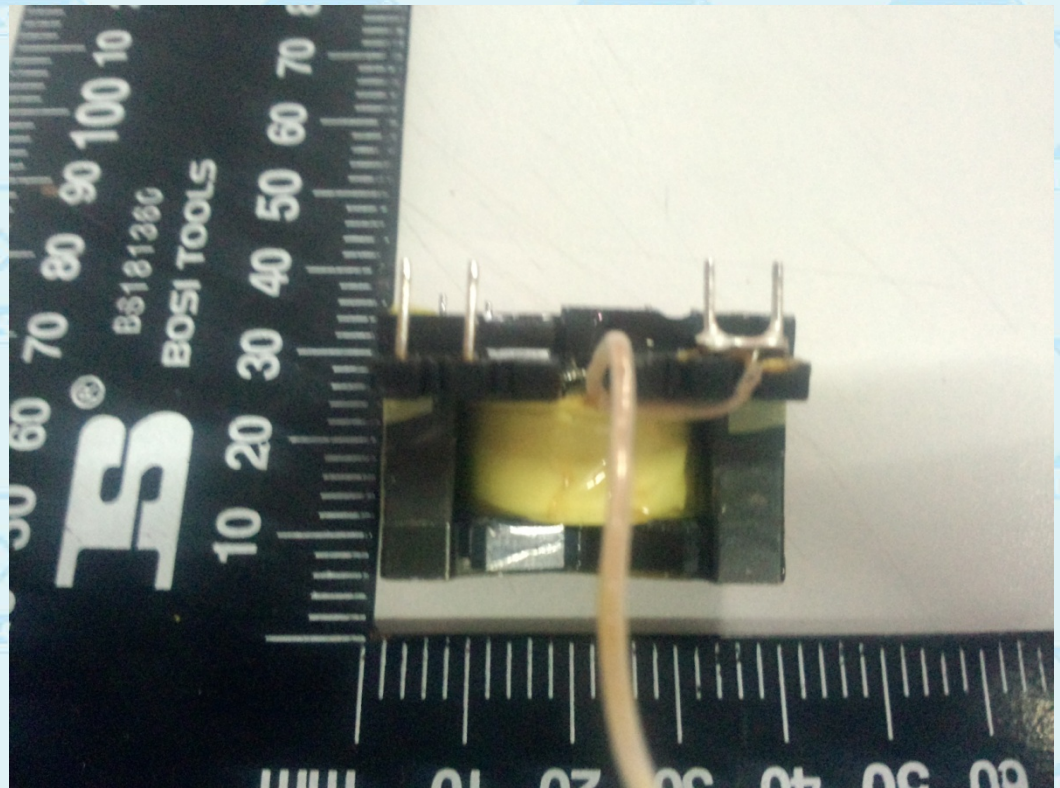






Photo 19

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

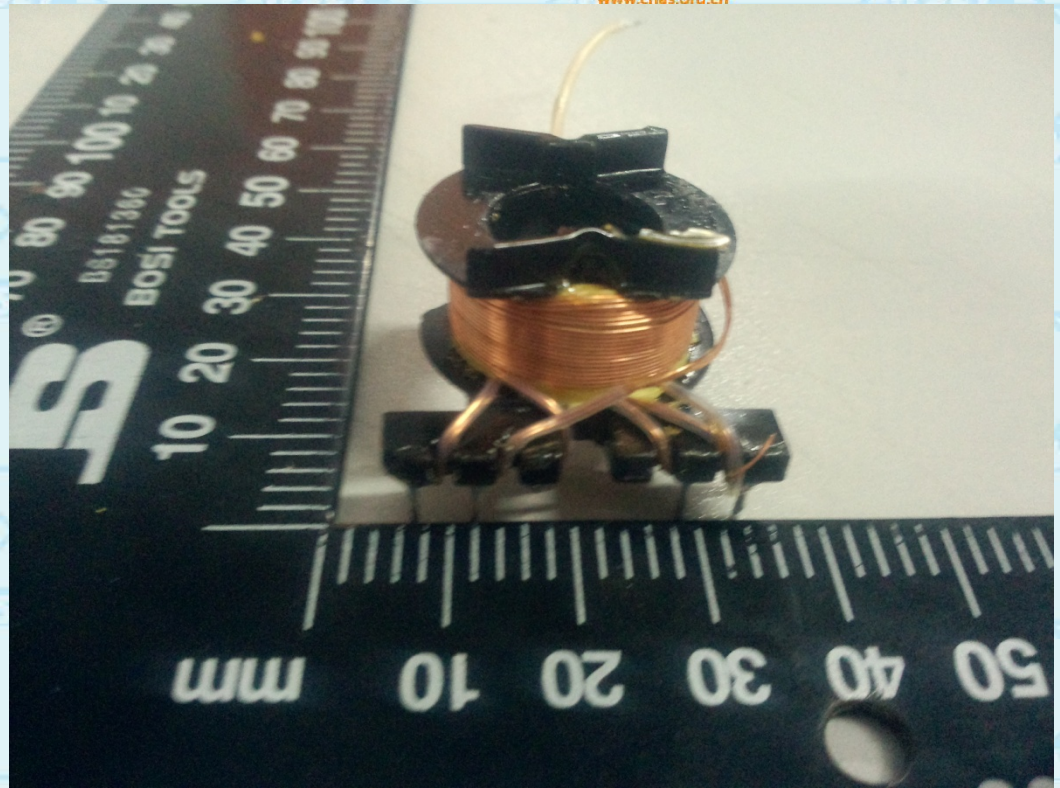


Photo 20

View:  
PT-PSE106GW

- front
- rear
- right side
- left side
- top
- bottom
- internal

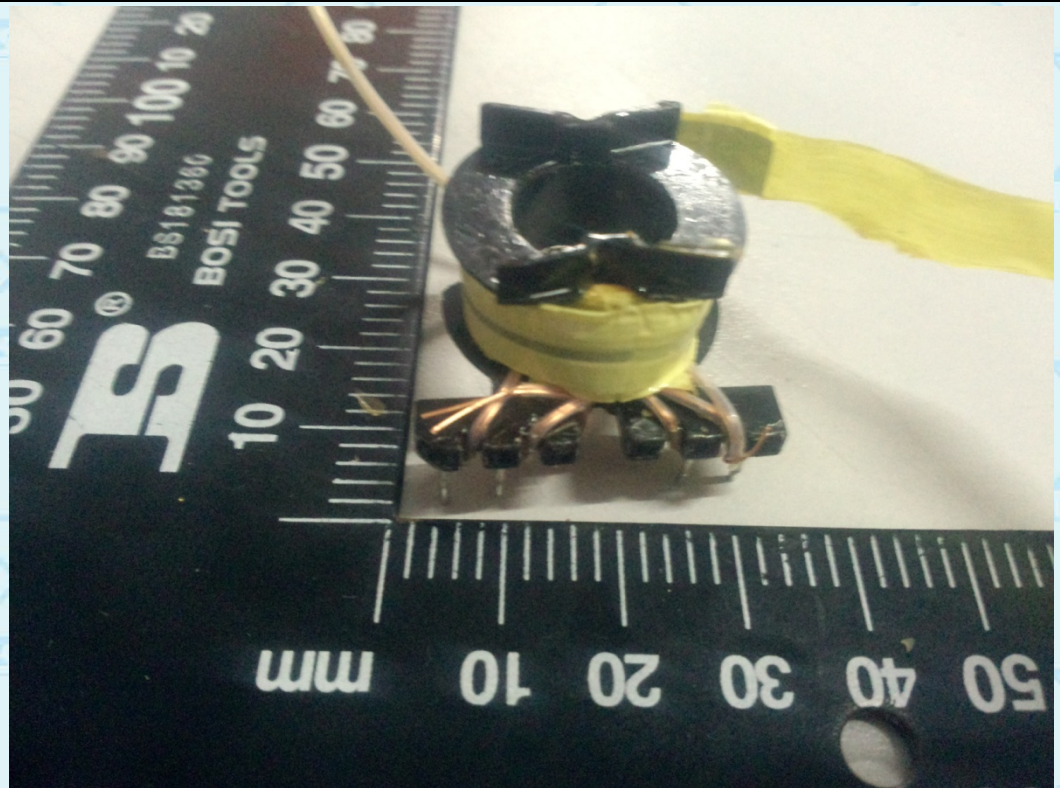






Photo 21

View:

PT-PSE106GW

[ ] front

[ ] rear

[ ] right side

[ ] left side

[ ] top

[ ] bottom

[x] internal

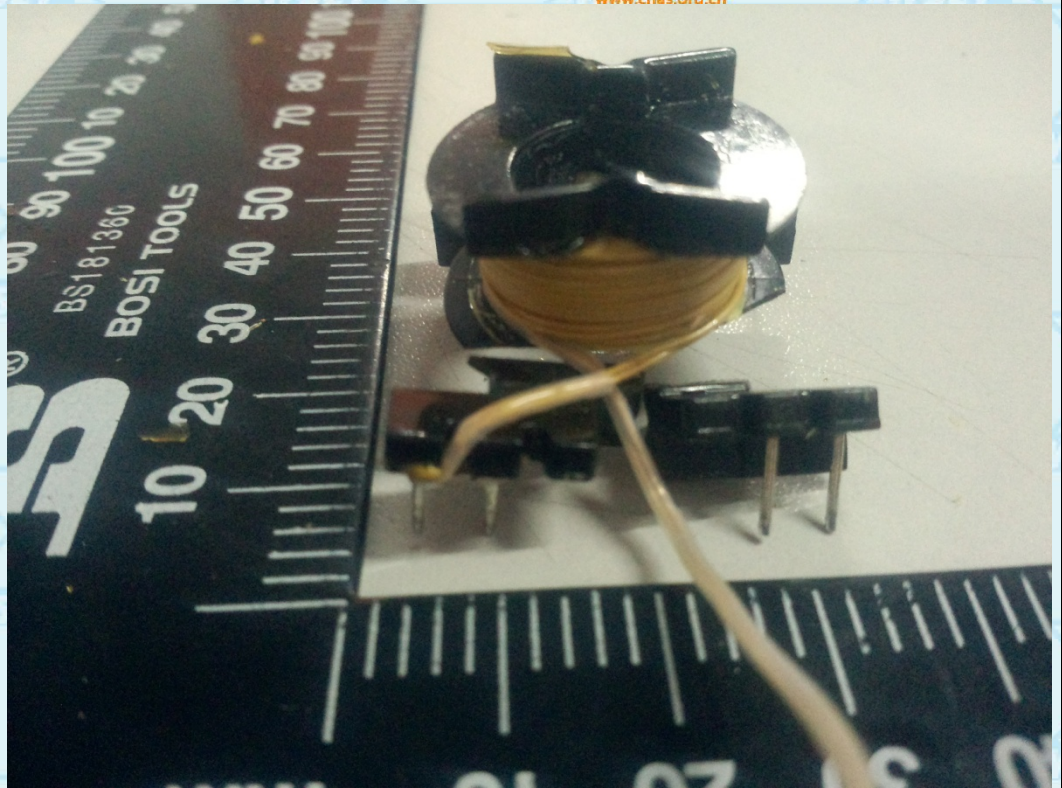


Photo 22

View:

PT-PSE106GW

[ ] front

[ ] rear

[ ] right side

[ ] left side

[ ] top

[ ] bottom

[x] internal







Photo 23

View:

PT-PSE106GW

front

rear

right side

left side

top

bottom

internal

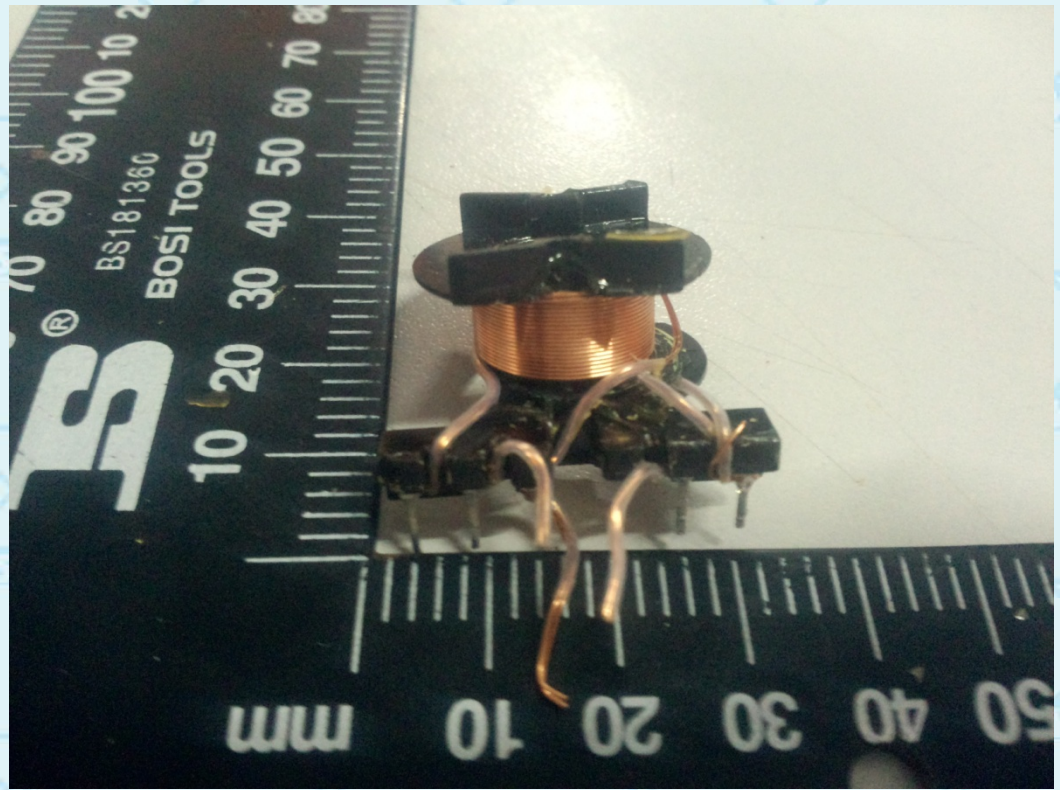


Photo 24

View:

PT-PSE106GW

front

rear

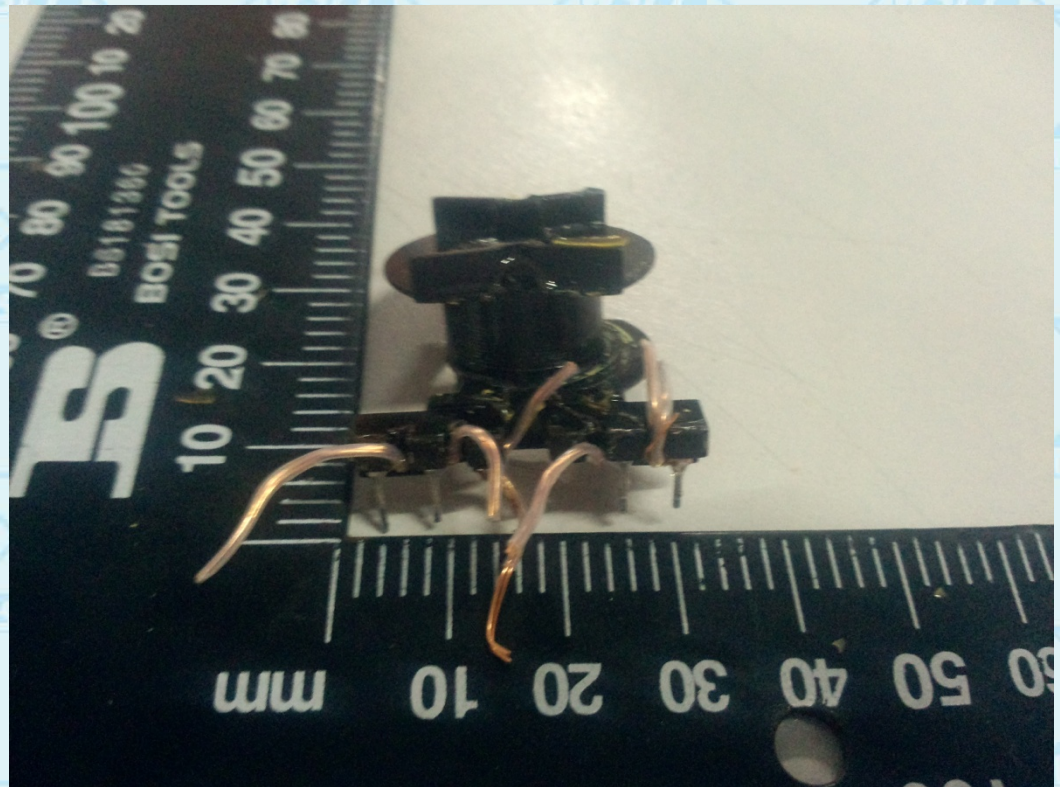
right side

left side

top

bottom

internal







**Appendix 2**

**Equipment list**

Code	Name	Model/Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCT S-001	Torque Meter	LJ-1	LJ010407	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-002	Tumbling Barrel	GT-1	G011307	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-003	Stability Board	WD-1	W010507	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-004	Glow Wire Test Set	GTR-B	R023207	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-005	Needle Flame Test Set	ZY-Z	Y021207	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-006	Hot line Coil Resistance Meter	RC-2	200978	2015.08.19	2016.08.18	Hangzhou Weibo	
WSCT S-007	Automatic Frequency Converter	AN9703 0TS	069712327L	2015.03.05	2016.03.04	Ainuo	√
WSCT S-008	Automatic Frequency Converter	AN9703 0TS	069712393L	2015.03.05	2016.03.04	Ainuo	√
WSCT S-009	Insulation Resistance Tester	AN9671	079602136	2015.08.19	2016.08.18	Ainuo	
WSCT S-010	Digital Power Meter	PF210	199764	2015.03.05	2016.03.04	Hangzhou Weibo	√
WSCT S-011	Digital Power Meter	8716C	870611014	2015.03.05	2016.03.04	Qingdao Qingzhi	√
WSCT S-012	Data Acquisition/Switch Unit	Agilent/34970A	MY44035738	2015.08.19	2016.08.18	Agilent	√
WSCT S-013	Desktop Multi Meter	GDM-82 45	CG810127	2015.03.05	2016.03.04	Good Will	
WSCT S-014	Desktop Multi Meter	GDM-82 45	CG810128	2015.03.05	2016.03.04	Good Will	
WSCT S-015	Temp.&Humi. Chamber	GDJS-5 00-40	0329	2015.07.22	2016.07.21	Guangzhou Gongwen	√
WSCT S-017	Pink Noise Generator	DF-168 1	DH06006133	2015.08.19	2016.08.18	Ningbo Zhongce	
WSCT S-018	Function Generator	GFG-82 16A	CH811153	2015.08.19	2016.08.18	Good Will	
WSCT S-019	Digital LCR	YD2810 B	3104	2015.08.19	2016.08.18	Yangzi	
WSCT S-020	Electronic weight	BCSS-3 kg	080556	2015.08.19	2016.08.18	Balance Electron	√
WSCT S-021	Audio Generator	GAG-80 9	EG850712	2015.08.19	2016.08.18	Good Will	
WSCT S-022	Oven	101A-3	33016	2015.07.22	2016.07.21	Rongfeng	√
WSCT S-023	Digital Caliper	SD-089	300609	2015.03.05	2016.03.04	Shanghai	√
WSCT S-024	Torque Driven	30LTDK	06K189	2015.03.05	2016.03.04	Nakamura	
WSCT S-025	Oscilloscope	TDS301 2B	B042290	2015.07.22	2016.07.21	Tektronix	√
WSCT S-026	Pull & Push Scale	FB-30B	192869	2015.07.22	2016.07.21	Imada	√





Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCT S-027	AC/DC Dielectric Resistance Test Meter	AN9634 H	069610322	2015.07.22	2016.07.21	Ainuo	√
WSCT S-028	Ground Bond Meter	AN9616 H	079602157	2015.03.05	2016.03.04	Ainuo	√
WSCT S-029	Leakage Current	AN9620 H	079601341	2015.03.05	2016.03.04	Ainuo	
WSCT S-030	DC Resistance Meter	YD2511	2073	2015.03.05	2016.03.04	Yangzi	
WSCT S-031	Voltage Regulator	SVC-20 K	0502072	2015.03.05	2016.03.04	Yangzhou Huatai	√
WSCT S-032	DC Power	TPR-30 10D	0384970	2015.08.19	2016.08.18	Longwei	
WSCT S-033	Data Acquisition/ Switch Unit	Agilent/ 34970A	MY44020255	2015.08.19	2016.08.18	Agilent	√
WSCT S-034	Plug Gauge	4P0533	4P0533	2015.08.19	2016.08.18	Jinghua	
WSCT S-035	Spring Hammer	CJ-3	C031207	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-036	Spring Hammer	CJ-3	C031307	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-037	Spring Hammer	CJ-3	C031107	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-038	Ball Pressure	QY-1	Q010707	2015.08.19	2016.08.18	Guangzhou Zhilitong	√
WSCT S-039	Stop Watch	PC396	101	2015.08.19	2016.08.18	Shenzhen Huibo	√
WSCT S-040	Digital Multimeter	F-115C	93420101	2015.08.19	2016.08.18	Fluke	
WSCT S-041	Digital Multimeter	F-115C	93420057	2015.08.19	2016.08.18	Fluke	
WSCT S-042	Test pin	TZ-31	V310307	2015.04.15	2016.04.14	Guangzhou Zhilitong	
WSCT S-043	Test pin	TZ-32	V320307	2013.11.27	2016.11.26	Guangzhou Zhilitong	
WSCT S-044	Test probe	ST-1	S011107	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-045	Test pin	ZX-14	X140107	2013.11.27	2016.11.26	Guangzhou Zhilitong	
WSCT S-046	Ball Pressure	QY-1	Q012807	2015.04.15	2016.04.14	Guangzhou Zhilitong	
WSCT S-047	Test finger	WZ-1	E010907	2015.04.15	2016.04.14	Guangzhou Zhilitong	
WSCT S-048	Test finger	WZ-2	E020907	2015.04.15	2016.04.14	Guangzhou Zhilitong	
WSCT S-049	Test Flat pin	TZ-40	V400107	2014.11.27	2016.11.26	Guangzhou Zhilitong	
WSCT S-050	Test Small pin	TZ-14	V140207	2013.11.27	2016.11.26	Zhilitong	
WSCT S-051	Test finger	TZ-12	H020507	2015.04.15	2016.04.14	Guangzhou Zhilitong	







Code	Name	Model/ Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCT S-052	Test finger	ZJ-1	Z011207	2015.04.15	2016.04.14	Guangzhou Zhilitong	
WSCT S-054	Test finger	GZ-1	F011107	2015.08.19	2016.08.18	Guangzhou Zhilitong	
WSCT S-055	Test finger	ZX-1	X010707-1	2015.08.19	2016.08.18	Guangzhou Zhilitong	√
WSCT S-056	Test pin	ZX-1	X010707-2	2013.11.27	2016.11.26	Guangzhou Zhilitong	
WSCT S-057	Test pin	ZX-1	X010707-3	2015.08.19	2016.08.18	Guangzhou Zhilitong	√
WSCT S-062	Test hook	WSCTS 01	001	2015.08.19	2016.08.18	Shenzhen Hengxintai	
WSCT S-063	Clock	8120	--	2015.08.19	2016.08.18	PanyuMingzhuxing	√
WSCT S-064	Tape	7.5m	7025	2015.03.05	2016.03.04	Rongsheng	√
WSCT S-065	Data Acquisition/ Switch Unit	Agilent/ 34970A	MY44026389	2015.08.19	2016.08.18	Agilent	
WSCT S-066	DC Power	RXN-30 10D	2008006875	2015.03.05	2016.03.04	Zhaoxin	
WSCT S-067	Digital Power Meter	CP-280	280902	2015.08.19	2016.08.18	Chyng hong	
WSCT S-068	Electronic scale	XJ-3K81 3 I	002	2015.03.05	2016.03.04	Yinuowei	
WSCT S-069	Leakage Current	Simpson 228	10-866030	2015.04.21	2016.04.20	USA Simpson	√
WSCT S-070	Steel Ball	GQ-1	GQ011307	2015.07.22	2016.07.21	Guangzhou Zhilitong	√
WSCT S-071	Insulation Comparison Tester	--	002	2015.08.19	2016.08.18	Shenzhen Hengxintai	√
WSCT S-072	Touch Current	420B	0706GD47	2015.08.19	2016.08.18	CEPREI	
WSCT S-073	Digital Power Meter	PF9800	709393	2015.03.05	2016.03.04	YUANFANG	
WSCT S-074	Digital Power Meter	PF9800	709387	2015.07.22	2016.07.21	YUANFANG	
WSCT S-075	Digital Power Meter	PF9800	709387	2015.07.22	2016.07.21	YUANFANG	
WSCT S-078	Metal Rod	--	0021877	2015.08.19	2016.08.18	--	
WSCT S-081	Electronic Load	IT8512	0020021863 76001076	2015.03.05	2016.03.04	ITECH Eletronics	√
WSCT S-082	Electronic Load	IT8512	0020021863 76001077	2015.03.05	2016.03.04	ITECH Eletronics	√
WSCT S-087	Oven	101A-3	32232	2015.08.19	2016.08.18	SHENZHEN RONGFENG	
WSCT S-088	Steel Ball	GQ-2	0021486	2015.08.19	2016.08.18	Zhilitong	
WSCT S-090	Weight	M1-35	M1-35	2014.02.11	2017.02.10	Penglaishi Shuiling	
WSCT S-091	Weight	M1-30	M1-30	2014.02.11	2017.02.10	Penglaishi Shuiling	







Code	Name	Model/Type	S/N	Calibrated date	Next Calibration Date	Manufacture	Used or not
WSCT S-092	Weight	M1-20	M1-20	2014.02.11	2017.02.10	Penglaishi Shuiling	
WSCT S-093	Weight	M1-10	M1-10	2014.02.11	2017.02.10	Penglaishi Shuiling	
WSCT S-094	Weight	M1-05	M1-05	2014.02.11	2017.02.10	Penglaishi Shuiling	
WSCT S-095	Weight	M1-01	M1-01	2014.02.11	2017.02.10	Penglaishi Shuiling	
WSCT S-096	Digital Power Meter	8705B	870906342	2015.08.19	2016.08.18	Qingdao Qingzhi	
WSCT S-097	Digital Power Meter	8705B	870906341	2015.08.19	2016.08.18	Qingdao Qingzhi	
WSCT S-098	Digital Power Meter	8716C	870906281	2015.08.19	2016.08.18	Qingdao Qingzhi	
WSCT S-099	Digital Power Meter	8716C	870906280	2015.08.19	2016.08.18	Qingdao Qingzhi	
WSCT S-100	Data Acquisition/Switch Unit	34970A	MY44047073	2015.08.19	2016.08.18	Agilent	
WSCT S-101	Data Acquisition/Switch Unit	34970A	MY44046852	2015.08.19	2016.08.18	Agilent	
WSCT S-102	Electronic Load	IT8512	0020021863 76001048	2015.08.19	2016.08.18	ITECH Electronics	
WSCT S-103	Electronic Load	IT8512	0020021863 74001002	2015.08.19	2016.08.18	ITECH Electronics	
WSCT S-105	Probe	TZ-60	V600108	2015.08.19	2016.08.18	--	
WSCT S-106	Probe	TZ-60	V600208	2015.08.19	2016.08.18	--	
WSCT S-107	Oscilloscope Carbon	P310	020213402	2015.07.22	2016.07.21	Tektronix	
WSCT S-108	Oscilloscope Carbon	TX3125	020213401	2015.07.22	2016.07.21	Tektronix	√
WSCT S-109	Magnifier	CT-200 U	--	2015.08.19	2016.08.18	--	√
WSCT S-110	digital power Meter	WT210	91LA25633	2015.08.19	2016.08.18	YOKOGAWA	
WSCT S-112	Salt mist tester	GL-015	8930148	2014.12.25	2015.12.24	GOTO	
WSCT S-113	Tracking Index Tester	HD-NH-1	11012725	2015.01.03	2016.01.02	HongDu	
WSCT S-194		DTE-D200	--	2015.08.19	2016.08.18	Huangcetong	√
WSCT P-001	Breaking Capacity & Normal Operation Tester	HD-LL-2	11012730	2015.08.19	2016.08.18	HongDu	
WSCT P-002	Pure Resistance Load Power Supplier	HD-RL-40B	11012727	2015.08.19	2016.08.18	HongDu	
WSCT P-003	Voltage drop Tester	HD-YL-2	11012728	2015.08.19	2016.08.18	HongDu	
WSCT P-004	Touch polarity tester	HD-303 AX	11012734	2015.08.19	2016.08.18	HongDu	





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WSCT P-006	Dumbbell-knife	C	--	2015.08.19	2016.08.18	Zhilitong	
WSCT P-007	Dumbbell-knife	D	--	2015.08.19	2016.08.18	Zhilitong	
WSCT P-008	Soft cable's flexibility tester	HD-730 2	11012729	2015.08.19	2016.08.18	HongDu	
WSCT P-009	Image measurement instrument	YVM201 0VT	8660	2015.08.19	2016.08.18	DONGGUAN YUANXIN	
WSCT P-010	Cable retention tester	JN-BCL-2099	BCL-2099-11 76	2015.08.19	2016.08.18	JEN	
WSCT P-011	Plug Bending Tester	HD-887 0	11012726	2015.08.19	2016.08.18	HongDu	
WSCT P-012	testing under high temperature & pressure equipment	HD-PHT -1	001	2015.08.19	2016.08.18	HongDu	
WSCT P-013	Heat cable distortion tester	110462	HD-8120	2015.08.19	2016.08.18	HongDu	

