



Test Report issued under the responsibility of:



TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number..... : 200907181GZU-001
Date of issue : 17 Dec., 2020
Total number of pages : 213

Name of Testing Laboratory preparing the Report : Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Applicant's name : Dongguan Turnmax Electronic Co., Ltd.
Address : Erxiafang Industrial Zone, Xiansha, Gaobu Town, Dongguan, Guangdong Province 523287, P. R. China

Test specification:

Standard : IEC 62368-1: 2018
Test procedure..... : CB Scheme
Non-standard test method..... : N/A

Test Report Form No...... : IEC62368_1C
Test Report Form(s) Originator.... : UL(US)
Master TRF : Dated 2019-01-17

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General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description	AC ADAPTER
Trade Mark	
Manufacturer	Same as applicant
Model/Type reference	TM-K018VP-XXXXYYYYPG-LL, TM-K024VE3-XXXXYYYYPG-LL, TM-K036VP-XXXXYYYYPG-LL (see general product information for detail)
Ratings	<p>Input: 100-240V~, 50/60Hz, 0.45A, Class II, IP20</p> <p>Output: 5.0-24V$\overline{\text{---}}$ 3A Max., 18.0W Max. for TM-K018VP-XXXXYYYYPG-LL</p> <p>Input: 100-240V~, 50/60Hz, 0.6A, Class II, IP20</p> <p>Output: 5.0-24.0V$\overline{\text{---}}$ 4.8A Max., 24.0W Max. for TM-K024VE-XXXXYYYYPG-LL</p> <p>Input: 100-240V~, 50/60Hz, 0.9A, Class II, IP20</p> <p>Output: 9.0-24.0V$\overline{\text{---}}$ 0.1- 4A Max., 36.0W Max. for TM-K036VP-XXXXYYYYPG-LL</p>

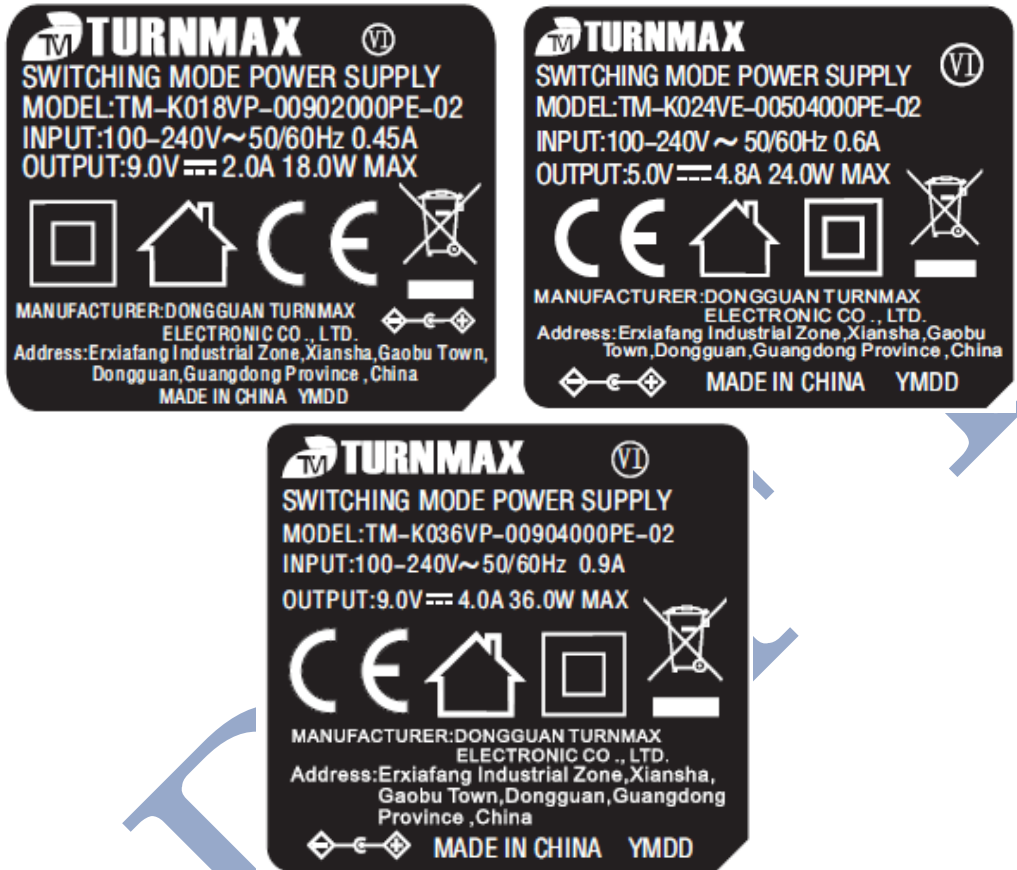
DRAFT

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Testing location/ address		Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China
Tested by (name, function, signature)		Kady Qin Engineer
Approved by (name, function, signature) ..		Spark He Reviewer
<hr/>		
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Approved by (name, function, signature) ..		
<hr/>		
<input type="checkbox"/>	Testing procedure: CTF Stage 2:	N/A
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
<hr/>		
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	N/A
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	N/A
Testing location/ address		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) ..		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment): See the appendix (page 92 to page 213) in this test report for details	
Summary of testing: From the result of our examination and tests in the submitted samples, conclude they comply with the requirements of the standard IEC 62368-1:2018 and EN IEC 62368-1:2020+A11:2020, EN 62479: 2010.	
Tests performed (name of test and test clause): All applicable tests	Testing location: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China
Summary of compliance with National Differences (List of countries addressed): Group and national differences of all CENELEC members have been considered. National differences of United States of America and Canada have been considered. National differences of AUSTRALIA (AU) and NEW ZEALAND (NZ) have been considered	
<input checked="" type="checkbox"/> The product fulfils the requirements of IEC 62368-1:2018 and EN IEC 62368-1:2020+A11:2020, EN 62479: 2010.	

Copy of marking plate:

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



Note:

1. The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
2. The mfr. and importer's name and address should be printed on label, if not possible can be printed on package or a document accompanying the equipment.
3. All the other models will have the same marking plate except the difference of model number and rating.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Test item particulars:			
Product group: <input checked="" type="checkbox"/> end product <input type="checkbox"/> built-in component			
Classification of use by: <input checked="" type="checkbox"/> Ordinary person <input checked="" type="checkbox"/> Children likely present <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person			
Supply connection: <input checked="" type="checkbox"/> AC mains <input type="checkbox"/> DC mains <input type="checkbox"/> not mains connected: <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3			
Supply tolerance: <input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + %/ - % <input type="checkbox"/> None			
Supply connection – type: <input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:			
Considered current rating of protective device: <input checked="" type="checkbox"/> 16 (20 for America and Canada) A; Location: <input checked="" type="checkbox"/> building <input type="checkbox"/> equipment <input type="checkbox"/> N/A			
Equipment mobility: <input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> wall/ceiling-mounted <input type="checkbox"/> SRME/rack-mounted <input type="checkbox"/> other:			
Overvoltage 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:			
Class of equipment: <input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified <input type="checkbox"/>			
Special installation location: <input checked="" type="checkbox"/> N/A <input type="checkbox"/> restricted access area <input type="checkbox"/> outdoor location <input type="checkbox"/>			
Pollution degree (PD): <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3			
Manufacturer’s specified T_{ma}: 40 °C <input type="checkbox"/> Outdoor: minimum °C			
IP protection class: <input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP ____			
Power systems: <input checked="" type="checkbox"/> TN <input checked="" type="checkbox"/> TT <input type="checkbox"/> IT - V _{L-L} <input type="checkbox"/> not AC mains			
Altitude during operation (m): <input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> m			
Altitude of test laboratory (m): <input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> m			

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Mass of equipment (kg) : 0.180 kg

Possible test case verdicts:
 - test case does not apply to the test object....: N/A
 - test object does meet the requirement.....: P (Pass)
 - test object does not meet the requirement....: F (Fail)

Testing:
Date of receipt of test item : 07 Sep., 2020
Date (s) of performance of tests : 07 Sep., 2020 – 13 Dec., 2020

General remarks:

The test results presented in this report relate only to the object tested.
 This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
 "(See Enclosure #)" refers to additional information appended to the report.
 "(See appended table)" refers to a table appended to the report.

Throughout this report a comma / point is used as the decimal separator.
 Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.
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 The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

EMF test according to EN 62479:2010 is considered and passed as the equipment does not contain radio transmitters and inherently compliant with the applicable EMF exposure levels.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 62368-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
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When differences exist; they shall be identified in the General product information section.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Name and address of factory (ies)..... : Same as applicant

General product information and other remarks:

Product Description:

The product covered by this report is switching power supply with integral mains plug. External enclosure is totally enclosed with ultrasonic welding.

Model list:

18W series MODEL	INPUT	OUTPUT			Transformer model
		Vdc	Max. A	Max.W	
TM-K018VP-XXXXYYYYPG-LL	Vac	5-7	3	15	TM-K018VP-T1
	100-240Vac, 50/60Hz; 0.45A	7.5-8.5	2.4	18	TM-K018VP-T2
	100-240Vac, 50/60Hz; 0.45A	9-12	2	18	TM-K018VP-T3
	100-240Vac, 50/60Hz; 0.45A	12.5-18	1	18	TM-K018VP-T4
	100-240Vac, 50/60Hz; 0.45A	18.5-24	0.75	18	TM-K018VP-T5

24W series MODEL	INPUT	OUTPUT			Transformer model
		Vdc	Max. A	Max.W	
TM-K024VE-XXXXYYYYPG-LL	Vac	5.0-7.5	4.8	24	TM-K024VE-T3
	100-240Vac, 50/60Hz, 0.6A	9.0-12	2	24	TM-K024VE-T4
	100-240Vac, 50/60Hz, 0.6A	15.1-24	1	24	TM-K024VE-T5

36W series MODEL	INPUT	OUTPUT			Transformer model
		Vdc	Max. A	Max.W	
TM-K036VP-XXXXYYYYPG-LL	Vac	9.0-12	4	36	TM-K036VP-T1
	100-240Vac, 50/60Hz, 0.9A	12.5-18	2.4	36	TM-K036VP-T2
	100-240Vac, 50/60Hz, 0.9A	18.5-24	1.5	36	TM-K036VP-T3

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Explanation in model TM-K018VP-XXXXYYYYPG-LL:

The "XXXX" represents output voltage from "0050" (5.0V) to "0240" (24.0V), increments in steps of 0.1V;
 The "YYYY" represents output current from "0010" (0.01A) to "3000" (3.0A), increments in steps of 0.01A;
 The "LL" denote type of integral plug, can be:
 "01" represents US plug comply with UL 1310;
 "02" represents European plug comply with EN 50075;
 "03" represents British plug comply with BS 1363;
 "04" represents SAA plug;
 "05" represents China plug;
 "06" represents Japan plug;
 "07" represents Korean plug;
 "08" represents Brazil plug;
 "09" represents Singapore plug;
 "10" represents Taiwan plug;
 "11" represents Mexico plug;
 "12" represents Argentina plug;
 "13" represents France plug;
 "14" represents India plug;
 "Z" represents Detachable plug;
 The "G" represents output type can be: "E" for output wire

Explanation in model TM-K024VE-XXXXYYYYPG-LL:

The "XXXX" represents output voltage from "0050" (5.0V) to "0240" (24.0V), increments in steps of 0.1V;
 The "YYYY" represents output current from "0010" (0.01A) to "4800" (4.8A), increments in steps of 0.01A;
 The "LL" denote type of integral plug, can be:
 "01" represents US plug comply with UL 1310;
 "02" represents European plug comply with EN 50075;
 "03" represents British plug comply with BS 1363;
 "04" represents SAA plug;
 "05" represents China plug;
 "06" represents Japan plug;
 "07" represents Korean plug;
 "08" represents Brazil plug;
 "09" represents Singapore plug;
 "10" represents Taiwan plug;
 "11" represents Mexico plug;
 "12" represents Argentina plug;
 "13" represents France plug;
 "14" represents India plug;
 "Z" represents Detachable plug;
 The "G" represents output type can be: "E" for output wire

Explanation in model TM-K036VP-XXXXYYYYPG-LL:

The "XXXX" represents output voltage from "0090" (9.0V) to "0240" (24.0V), increments in steps of 0.1V;
 The "YYYY" represents output current from "0010" (0.01A) to "4000" (4.0A), increments in steps of 0.01A;
 The "LL" denote type of integral plug, can be:
 "01" represents US plug comply with UL 1310;
 "02" represents European plug comply with EN 50075;

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<p> "03" represents British plug comply with BS 1363; "04" represents SAA plug; "05" represents China plug; "06" represents Japan plug; "07" represents Korean plug; "08" represents Brazil plug; "09" represents Singapore plug; "10" represents Taiwan plug; "11" represents Mexico plug; "12" represents Argentina plug; "13" represents France plug; "14" represents India plug; "Z" represents Detachable plug; The "G" represents output type can be: "E" for output wire, Only European plug, British-plug, Australia plug and UL plug were considered in the report. Max. ambient temperature (Tma) 40°C were considered. The test result in this report considered the worst case if nothing mentioned. Other than special notes, the model TM-K018VP-00503000PE-02, TM-K018VP-00902000PE-02, TM-K018VP-01201500PE-02, TM-K018VP-02400750PE-02, TM-K024VE-00504800PE-02, TM-K024VE-01202000PE-02, TM-K024VE-02401000PE-02, TM-K036VP-00904000PE-02, TM-K036VP-02401500PE-02 were selected as representative samples for all testing. </p>		
	<p>Model Differences:</p> <p>All models in this 18W series are identical to each other except for the output rating, model name, plug type and rating of secondary components.</p> <p>All models in this 24W series are identical to each other except for the output rating, model name, plug type and rating of secondary components.</p> <p>All models in this 36W series are identical to each other except for the output rating, model name, plug type and rating of secondary components.</p>		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

OVERVIEW OF ENERGY SOURCES AND SAFEGUARDS				
Clause	Possible Hazard			
5	Electrically-caused injury			
Class and Energy Source (e.g. ES3: Primary circuit)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
ES3: All primary circuits	Ordinary	N/A	N/A	Equipment enclosure
ES1: Output terminal	Ordinary	N/A	N/A	N/A
6	Electrically-caused fire			
Class and Energy Source (e.g. PS2: 100 Watt circuit)	Material part (e.g. Printed board)	Safeguards		
		B	1 st S	2 nd S
PS3: All primary circuits and secondary circuits inside the equipment enclosure	Printed board	Equipment safeguard (e.g., no ignition occurs)	Equipment safeguard (e.g., control of fire spread)	N/A
PS2: Output terminal (18.0W, 24W, 36W series)	Output cord	N/A	Output cord: VW-1	N/A
7	Injury caused by hazardous substances			
Class and Energy Source (e.g. Ozone)	Body Part (e.g., Skilled)	Safeguards		
		B	S	R
N/A	N/A	N/A	N/A	N/A
8	Mechanically-caused injury			
Class and Energy Source (e.g. MS3: Plastic fan blades)	Body Part (e.g. Ordinary)	Safeguards		
		B	S	R
MS1: Sharp edges and corners	Ordinary	N/A	N/A	N/A
MS1: Equipment mass	Ordinary	N/A	N/A	N/A
9	Thermal burn			
Class and Energy Source (e.g. TS1: Keyboard caps)	Body Part (e.g., Ordinary)	Safeguards		
		B	S	R
TS1: Accessible surfaces	Ordinary	N/A	N/A	N/A
10	Radiation			
Class and Energy Source	Body Part	Safeguards		

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Clause	Requirement + Test	Result - Remark		Verdict
(e.g. RS1: PMP sound output)	(e.g., Ordinary)	B	S	R
N/A	N/A	N/A	N/A	N/A
Supplementary Information:				
"B" – Basic Safeguard; "S" – Supplementary Safeguard; "R" – Reinforced Safeguard				

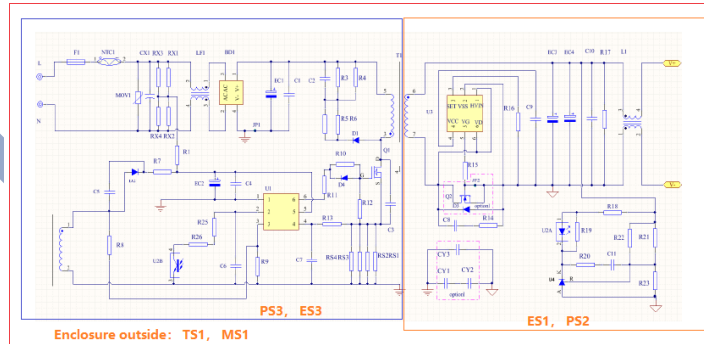
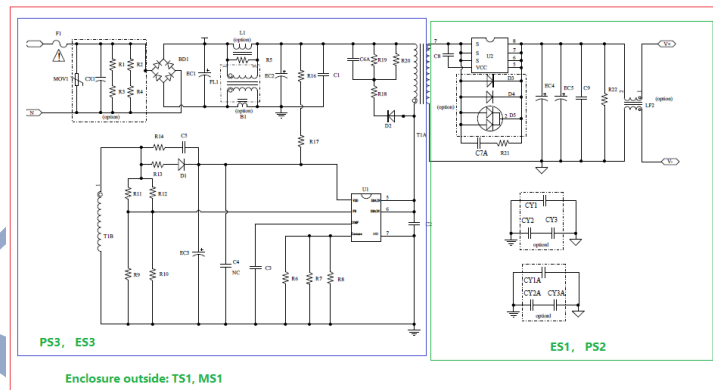
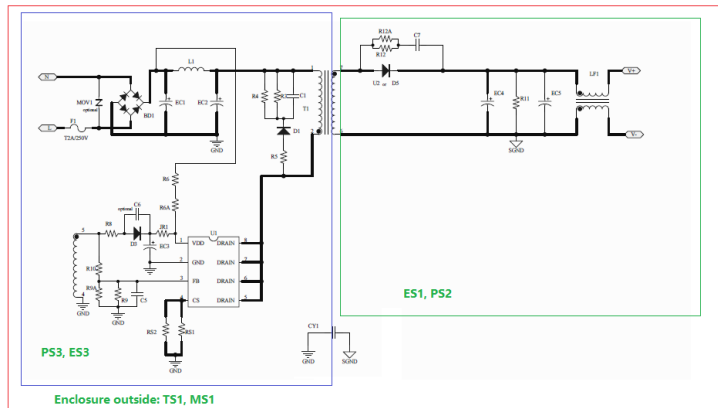
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

ENERGY SOURCE DIAGRAM

Optional. Manufacturers are to provide the energy sources diagram identify declared energy sources and identifying the demarcations are between power sources. Recommend diagram be provided included in power supply and multipart systems.

Insert diagram below. Example diagram designs are; Block diagrams; image(s) with layered data; mechanical drawings



- ES
- PS
- MS
- TS
- RS

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C) :		N/A
4.1.5	Constructions and components not specifically covered		N/A
4.1.8	Liquids and liquid filled components (LFC)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.3, T.4, T.5)	P
4.4.3.3	Drop tests	(See Annex T.7)	P
4.4.3.4	Impact tests	Direct plug-in equipment	N/A
4.4.3.5	Internal accessible safeguard tests	No such enclosure and barrier	N/A
4.4.3.6	Glass impact tests	No glass enclosure	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests	(See Annex T.8)	P
4.4.3.9	Air comprising a safeguard	(See Annex T)	P
4.4.3.10	Accessibility, glass, safeguard effectiveness		P
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	Explosion		N/A
4.5.1	General	(See Annex M for batteries)	N/A
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	N/A
	No harm by explosion during single fault conditions	(See Clause B.4)	N/A
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test..... :	(See Clause T.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.7	Equipment for direct insertion into mains socket-outlets		P
4.7.2	Mains plug part complies with relevant standard .. :	See general product information for details	P
4.7.3	Torque (Nm)	0.068 Nm Max	P
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General	No such batteries	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery compartment door/cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		N/A
4.10	Component requirements		N/A
4.10.1	Disconnect Device	(See Annex L)	N/A
4.10.2	Switches and relays	(See Annex G)	N/A
5	ELECTRICALLY-CAUSED INJURY		P
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current limits	(See appended table 5.2)	P
5.2.2.3	Capacitance limits	(See appended table 5.2)	P
5.2.2.4	Single pulse limits	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses	(See appended table 5.2)	N/A
5.2.2.6	Ringling signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.3.1 a)	Accessible ES1/ES2 derived from ES2/ES3 circuits		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		N/A
	Test with test probe from Annex V		-
5.3.2.2 a)	Air gap – electric strength test potential (V)	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm)		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic		P
5.4.1.4	Maximum operating temperature for insulating materials	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degrees	PD2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8)	P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat test.....	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure test	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	N/A
5.4.2.2	Procedure 1 for determining clearance	(See appended table 5.4.2.2)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Temporary overvoltage		—
5.4.2.3	Procedure 2 for determining clearance	(See appended table 5.4.2.2)	P
5.4.2.3.2.2	a.c. mains transient voltage	2500	—
5.4.2.3.2.3	d.c. mains transient voltage		—
5.4.2.3.2.4	External circuit transient voltage.....		—
5.4.2.3.2.5	Transient voltage determined by measurement		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages		N/A
5.4.2.6	Clearance measurement	(See appended table 5.4.2)	P
5.4.3	Creepage distances	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material group	IIIb	—
5.4.3.4	Creepage distances measurement	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs)		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz, E_P , K_R , d , V_{PW} (V)	(See appended Table 5.4.4.9)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Alternative by electric strength test, tested voltage (V), K_R :	(See appended Tables 5.4.4.9 and 5.4.9)	P
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test		P
5.4.5.3	Insulation resistance (M Ω)..... :	>100	P
	Electric strength test :	(See appended table 5.4.9)	P
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature (°C), duration (h) :	95%, 40°C, 120h	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation..... :	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		P
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test :	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test..... :	(See appended table 5.4.9)	N/A
5.4.10.3	Verification for insulation breakdown for impulse test :		N/A
5.4.11	Separation between external circuits and earth	No such insulation	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	SPDs bridge separation between external circuit and earth		N/A
	Rated operating voltage U_{op} (V)..... :		—
	Nominal voltage U_{peak} (V)..... :		—
	Max increase due to variation ΔU_{sp} :		—
	Max increase due to ageing ΔU_{sa} :		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.3	Test method and compliance	(See appended table 5.4.9)	N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid	(See appended table 5.4.9)	N/A
5.4.12.3	Compatibility of an insulating liquid	(See appended table 5.4.9)	N/A
5.4.12.4	Container for insulating liquid		N/A
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units	CX1, CY1 capacitor complying with IEC/EN 60384-14 is used.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	P
5.5.3	Transformers		P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	P
5.5.5	Relays	(See sub-clause 5.4)	N/A
5.5.6	Resistors	(See Clause G.10)	N/A
5.5.7	SPDs	(See Clause G.8)	N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA)		—
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²). :		—
5.6.4.2	Protective current rating (A)..... :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm)..... :		N/A
	Terminal size for connecting protective bonding conductors (mm)..... :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method..... :	(See appended table 5.6.6)	N/A
5.6.6.3	Resistance (Ω) or voltage drop..... :	(See appended table 5.6.6)	N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²)..... :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm)..... :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current	(See appended table 5.2)	P
5.7.2.2	Measurement of voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		N/A
5.7.4	Unearthed accessible parts :	(See appended table 5.7.4)	P
5.7.5	Earthed accessible conductive parts :	(See appended table 5.7.5)	N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA)..... :		N/A
	Instructional Safeguard..... :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA)		N/A
	b) Equipment connected to unearthed external circuits, current (mA)		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES	(See appended table 5.8)	N/A
	Air gap (mm).....		N/A

6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of PS and PIS		P
6.2.2	Power source circuit classifications	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS	(See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS	(See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials	(See appended table B.1.5 and B.3)	P
	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions	(See appended table B.4)	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties	V-0	P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Fire enclosure is made of V-0 class material and the available power of the equipment does not exceed 4000W	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings	N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	N/A
	Instructional Safeguard..... :		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm)..... :		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c)..... :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating..... :	V-0 enclosure used	P
6.4.9	Flammability of insulating liquid..... :		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements	Output cord rated VW-1	P
6.5.2	Requirements for interconnection to building wiring..... :		N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets..... :		N/A
6.6	Safeguards against fire due to the connection to additional equipment		P

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Clause	Requirement + Test	Result - Remark	Verdict
7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards or personal protective equipment (PPE)		N/A
	Personal safeguards and instructions		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....		—
7.6	Batteries and their protection circuits		N/A

8	MECHANICALLY-CAUSED INJURY		P
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards		N/A
	Instructional Safeguard.....		N/A
8.4.2	Sharp edges or corners		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard.....		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Space between end point and nearest fixed mechanical part (mm)		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N).....		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test		N/A
8.5.5.3	Glass particles dimensions (mm)		N/A
8.6	Stability of equipment		N/A
8.6.1	General		N/A
	Instructional safeguard.....		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm)		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N).....		N/A
	Test 2, number of attachment points and test force (N).....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test 3 Nominal diameter (mm) and applied torque (Nm).....:		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles.....:		—
	Force applied (N)		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions.....:		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N)		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Force applied (N)		—
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard.....:		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied.....:		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm)		—

9	THERMAL BURN INJURY	P
9.2	Thermal energy source classifications	P
9.3	Touch temperature limits	P

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Clause	Requirement + Test	Result - Remark	Verdict
9.3.1	Touch temperatures of accessible parts	(See appended table 5.4.1.4)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		N/A
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard.....		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance	(See appended table 9.6)	N/A




10	RADIATION		N/A
10.2	Radiation energy source classification		N/A
10.2.1	General classification		N/A
	Lasers		—
	Lamps and lamp systems		—
	Image projectors		—
	X-Ray		—
	Personal music player		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure	(See Annex C)	N/A
10.4.3	Instructional safeguard		N/A
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard for skilled persons		—
10.5.3	Maximum radiation (pA/kg).....	(See appended tables B.3 & B.4)	—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A).....		N/A
	Unweighted RMS output voltage (mV).....		N/A
	Digital output signal (dBFS).....		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL \geq 100 dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards		N/A
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A
	Listening device input voltage (mV).....		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A).....		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.2	Normal operating conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Audio Amplifiers and equipment with audio amplifiers	No such components	N/A
B.2.3	Supply voltage and tolerances	100-240VAC, +10%, -10%	P
B.2.5	Input test	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General		P
B.3.2	Covering of ventilation openings	No openings	N/A
	Instructional safeguard		N/A
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector	No such parts	N/A
B.3.5	Maximum load at output terminals	Overload	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended table B.3)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		P
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	No battery	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus..... :		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		P
D.1	Impulse test generators		P
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		P
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)..... :		—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V)..... :		—
	Instructional safeguard	See Clause F.5	—
E.2	Audio amplifier normal operating conditions		N/A
	Audio signal source type		—
	Audio output power (W)		—
	Audio output voltage (V)		—
	Rated load impedance (Ω)		—
	Requirements for temperature measurement	(See Table B.1.5)	N/A
E.3	Audio amplifier abnormal operating conditions	(See Table B.3, B.4)	N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General		P
	Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification		P
F.3.2.2	Model identification	See page 2	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	AC	P
F.3.3.4	Rated voltage.....	100-240AC	P
F.3.3.5	Rated frequency	50/60Hz	P
F.3.3.6	Rated current or rated power.....	See page 2	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings	No such parts	N/A
F.3.5.2	Switch position identification marking	No switches	N/A
F.3.5.3	Replacement fuse identification and rating markings	Fuse is not intended to be replaceable	N/A
	Instructional safeguards for neutral fuse	No battery	N/A
F.3.5.4	Replacement battery identification marking		N/A
F.3.5.5	Neutral conductor terminal		P
F.3.5.6	Terminal marking location	No such parts	N/A
F.3.6	Equipment markings related to equipment classification	No switches	N/A
F.3.6.1	Class I equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Protective bonding conductor terminals		N/A
F.3.6.2	Equipment class marking		P
F.3.6.3	Functional earthing terminal marking		N/A
F.3.7	Equipment IP rating marking	IPX0	—
F.3.8	External power supply output marking		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a).....In formation prior to installation and initial use		P
	b).....E quipment for use in locations where children not likely to be present		N/A
	c)..... Instructions for installation and interconnection		N/A
	d)..... Equipment intended for use only in restricted access area		N/A
	e)..... Equipment intended to be fastened in place		N/A
	f)..... Instructions for audio equipment terminals		N/A
	g)..... Protective earthing used as a safeguard		N/A
	h)..... Protective conductor current exceeding ES2 limits		N/A
	i)..... Graphic symbols used on equipment		P
	j)..... Permanently connected equipment not provided with all-pole mains switch		N/A
	k)..... Replaceable components or modules providing safeguard function		N/A
	l)..... Equipment containing insulating liquid		N/A
	m)..... Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions..... :	(See appended table B.4)	N/A
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration..... :		P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		P
G.5	Wound components		P
G.5.1	Wire insulation in wound components		P
G.5.1.2	Protection against mechanical stress		P
G.5.2	Endurance test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Test time (days per cycle) :		—
	Test temperature (°C)..... :		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method..... :	The isolation transformer meets the requirements given in Annexes G.5.3.2 and G.5.3.3	P
	Position :	Isolation transformer, T1	—
	Method of protection..... :	Triple insulated wire used	—
G.5.3.2	Insulation		P
	Protection from displacement of windings..... :	bobbin and tape	—
G.5.3.3	Transformer overload tests	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding temperatures		P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter :		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation..... :		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.4.2	Locked-rotor overload test		N/A
	Test duration (days) :		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
G.5.4.5.3	Alternative method		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature :		N/A
G.5.4.6.3	Alternative method		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage :		—
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements		N/A
	Type..... :		—
G.7.2	Cross sectional area (mm ² or AWG) :		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)..... :		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) :		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Overall diameter or minor overall dimension, D (mm)		—
	Radius of curvature after test (mm)		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		P
G.8.1	General requirements		P
G.8.2	Safeguards against fire		P
G.8.2.1	General		P
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A).....		—
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		P
G.11.1	General requirements		P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Optocouplers comply with IEC 60747-5-5 with specifics		P
	Type test voltage $V_{ini,a}$:	(See appended table 4.1.2)	—
	Routine test voltage, $V_{ini,b}$:	(See appended table 4.1.2)	—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation..... :		N/A
	Number of insulation layers (pcs)..... :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements..... :	(See Clause G.13)	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.3	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test..... :		—
	Mains voltage that impulses to be superimposed on :		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test :		—
G.16.3	Capacitor discharge test..... :		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) :		—
H.3.1.2	Voltage (V) :		—
H.3.1.3	Cadence; time (s) and voltage (V) :		—
H.3.1.4	Single fault current (mA):..... :		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) :		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
J.1	General		P
	Winding wire insulation..... :		—
	Solid round winding wire, diameter (mm) :	0.15mm	—
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)..... :		N/A
J.2/J.3	Tests and Manufacturing	(See separate test report)	—
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
	Instructional safeguard :		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)		N/A
	Electric strength test before and after the test of K.7.2	(See appended table 5.4.9)	N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		P
L.1	General requirements		P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment		P
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A
	Instructional safeguard		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards		N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance	(See appended table M.3)	N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Compliance..... :	(See appended table M.4.2)	N/A
M.4.3	Fire enclosure..... :		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%): :		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate..... :		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)..... :		N/A
M.7.3	Ventilation tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate..... :		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)..... :		N/A
M.7.4	Marking..... :		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)..... :		—
M.8.2.3	Correction factors..... :		—
M.8.2.4	Calculation of distance d (mm)..... :		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard..... :		N/A
N	ELECTROCHEMICAL POTENTIALS		N/A
	Material(s) used..... :		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Value of X (mm)..... :		—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		P
P.1	General		P
P.2	Safeguards against entry or consequences of entry of a foreign object		P
P.2.1	General		P
P.2.2	Safeguards against entry of a foreign object		P
	Location and Dimensions (mm)..... :		—
P.2.3	Safeguards against the consequences of entry of a foreign object		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3.1	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.3 not applicable to transportable equipment		N/A
	Transportable equipment with metalized plastic parts..... :		N/A
P.2.3.2	Consequence of entry test..... :		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _c (°C) :		—
	Duration (weeks)..... :		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources		P
Q.1.1	Requirements		P
	a) Inherently limited output		N/A
	b) Impedance limited output		P
	c) Regulating network limited output		P
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance :	(See appended table Q.1)	P
	Current rating of overcurrent protective device (A) :		P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) :		N/A
	Current limiting method :		—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General		N/A
R.2	Test setup		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Overcurrent protective device for test..... :		—
R.3	Test method		N/A
	Cord/cable used for test		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm)		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm)		—
	Conditioning (°C)		—
T	MECHANICAL STRENGTH TESTS		P
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
T.3	Steady force test, 30 N	(See appended table T.3)	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	P
T.5	Steady force test, 250 N	(See appended table T.5)	N/A
T.6	Enclosure impact test	(See appended table T.6)	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P
T.8	Stress relief test	(See appended table T.8)	P
T.9	Glass Impact Test	(See appended table T.9)	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted.....		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		P
V.1	Accessible parts of equipment		P
V.1.1	General		P
V.1.2	Surfaces and openings tested with jointed test probes		N/A
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		P
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		P
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		N/A
	Clearance	(See appended table X)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		N/A
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by :		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure :		N/A
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods :		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3 :		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test :	(See Table T.6)	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Classification of electrical energy sources						P
Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters				ES Class
			U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾ Frequency	
264	Output (+) to (-)	Normal	24.10	--	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	0	--	SS	DC	
		Single fault – CE1 SC	0	--	SS	DC	
		Single fault – U1 pin 1-8 SC	0	--	SS	DC	
		Single fault – D3 OC	0	--	SS	DC	
264	Output (+) or (-) to earth	Normal	--	0.248m Apk	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	--	0.056m Apk	SS	DC	
		Single fault – CE1 SC	--	0.047m Apk	SS	DC	
		Single fault – U1 pin 1-8 SC	--	0.049m Apk	SS	DC	
		Single fault – D3 OC	--	0.237m Apk	SS	DC	
264	Enclosure to earth	Normal	--	0.046m Apk	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	--	0.046m Apk	SS	DC	
		Single fault – CE1 SC	--	0.046m Apk	SS	DC	
		Single fault – U1 pin 1-8 SC	--	0.046m Apk	SS	DC	
		Single fault – D3 OC	--	0.046m Apk	SS	DC	

Supplementary information:

1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.

2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.

Test with Model: TM-K018VP-02400750PE-02

5.2	TABLE: Classification of electrical energy sources						P
Supply	Location	Test conditions	Parameters				ES

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Voltage	(e.g. circuit designation)		U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾ Frequency	Class
264	Output (+) to (-)	Normal	24.48	--	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	0	--	SS	DC	
		Single fault –CE1 SC	0	--	SS	DC	
		Single fault – U1 pin 1-7 SC	0	--	SS	DC	
		Single fault – D3 OC	0	--	SS	DC	
264	Output (+) or (-) to earth	Normal	--	0.212m Apk	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	--	0.034m Apk	SS	DC	
		Single fault –CE1 SC	--	0.041m Apk	SS	DC	
		Single fault – U1 pin 1-7 SC	--	0.049m Apk	SS	DC	
		Single fault – D3 OC	--	0.229m Apk	SS	DC	
264	Enclosure to earth	Normal	--	0.056m Apk	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	--	0.056m Apk	SS	DC	
		Single fault –CE1 SC	--	0.056m Apk	SS	DC	
		Single fault – U1 pin 1-7 SC	--	0.056m Apk	SS	DC	
		Single fault – D3 OC	--	0.056m Apk	SS	DC	

Supplementary information:

1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.

2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.

Test with Model: TM-K024VE-02401000PE-02

5.2	TABLE: Classification of electrical energy sources			P
Supply	Location	Test conditions	Parameters	ES

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Voltage	(e.g. circuit designation)		U (V)	I (mA)	Type ¹⁾	Additional Info ²⁾ Frequency	Class
264	Output (+) to (-)	Normal	24.07	--	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	0	--	SS	DC	
		Single fault –CE1 SC	0	--	SS	DC	
		Single fault – U2 pin 1-2 SC	0	--	SS	DC	
		Single fault – U2 pin 3 OC	0	--	SS	DC	
264	Output (+) or (-) to earth	Normal	--	0.251m Apk	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	--	0.057m Apk	SS	DC	
		Single fault –CE1 SC	--	0.043m Apk	SS	DC	
		Single fault – U2 pin 1-2 SC	--	0.050m Apk	SS	DC	
		Single fault – U2 pin 3 OC	--	0.237m Apk	SS	DC	
264	Enclosure to earth	Normal	--	0.066m Apk	SS	DC	ES1
		Single fault – BD1 pin 1-2 SC	--	0.066m Apk	SS	DC	
		Single fault –CE1 SC	--	0.066m Apk	SS	DC	
		Single fault – U2 pin 1-2 SC	--	0.066m Apk	SS	DC	
		Single fault – U2 pin 3 OC	--	0.066m Apk	SS	DC	

Supplementary information:

1) Type: Steady state (SS), Capacitance (CP), Single pulse (SP), Repetitive pulses (RP), etc.

2) Additional Info: Frequency, Pulse duration, Pulse off time, Capacitance value, etc.

Test with Model: TM-K036VP-02401500PE-02

5.4.1.8	TABLE: Working voltage measurement				P
Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

T1 Pin1-Pin 6	204	424	72.7KHz	--
T1 Pin1-Pin 7	198	360	72.7KHz	--
T1 Pin 2-Pin 6	245	528	72.7KHz	--
T1 Pin 2-Pin 7	266	564	72.7KHz	--
T1 Pin 4-Pin 6	212	372	72.7KHz	--
T1 Pin 4-Pin 7	209	352	72.7KHz	--
T1 Pin 5-Pin 6	209	352	72.7KHz	--
T1 Pin 5-Pin 7	212	412	72.7KHz	--
CY1 Primary - Secondary	211	352	72.7KHz	--

Supplementary information: Test with Model: TM-K018VP-02400750PE-02

5.4.1.8	TABLE: Working voltage measurement	P
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Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
T1 Pin1-Pin 7	210	376	88.7KHz	--
T1 Pin1-Pin 8	207	412	88.7KHz	--
T1 Pin 2-Pin 7	211	368	88.7KHz	--
T1 Pin 2-Pin 8	212	356	88.7KHz	--
T1 Pin 3-Pin 7	280	512	88.7KHz	--
T1 Pin 3-Pin 8	290	524	88.7KHz	--
T1 Pin 5-Pin 7	215	384	88.7KHz	--
T1 Pin 5-Pin 8	209	356	88.7KHz	--
CY1 Primary - Secondary	206	356	88.7KHz	--

Supplementary information: Test with Model: TM-K024VE-02401000PE-02

5.4.1.8	TABLE: Working voltage measurement	P
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Location	RMS voltage (V)	Peak voltage (V)	Frequency (Hz)	Comments
T1 Pin1-Pin 6	191	424	73.1KHz	--
T1 Pin1-Pin 7	201	504	73.1KHz	--
T1 Pin 2-Pin 6	188	376	73.1KHz	--
T1 Pin 2-Pin 7	192	444	73.1KHz	--
T1 Pin 3-Pin 6	294	484	73.1KHz	--
T1 Pin 3-Pin 7	302	512	73.1KHz	--

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

T1 Pin 5-Pin 6	226	328	73.1KHz	--
T1 Pin 5-Pin 7	228	352	73.1KHz	--
U2 Pin 1-Pin 3	185	372	73.1KHz	
U2 Pin 1-Pin 4	185	372	73.1KHz	
U2 Pin 2-Pin 3	185	372	73.1KHz	
U2 Pin 2-Pin 4	185	372	73.1KHz	
CY1 Primary - Secondary	170	352	73.1KHz	--
Supplementary information: Test with Model: TM-K036VP-02401500PE-02				

5.4.1.10.2 TABLE: Vicat softening temperature of thermoplastics				N/A
Method.....:			ISO 306 / B50	—
Object/ Part No./Material	Manufacturer/trademark	Thickness (mm)	T softening (°C)	
--	--	--	--	
--	--	--	--	
Supplementary information:				

5.4.1.10.3 TABLE: Ball pressure test of thermoplastics					P
Allowed impression diameter (mm).....:				≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Thickness (mm)	Test temperature (°C)	Impression diameter (mm)	
Plug holder	Sabic Innovative Plastics US L L C / 940(f1), 945 (GG)	2.0	125	1.12	
Supplementary information:					

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
L to N before fuse (F1) (FI)	340	240	60	1.5	4.6	--	2.4	4.6
Between two poles of fuse (F1) (FI)	340	240	60	1.5	3.0	--	2.4	3.0
Live parts to accessible enclosure (RI)	340	240	60	3.0	5.0	--	4.8	5.0

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict

Live parts to accessible enclosure for detachable plug (RI)	340	240	60	3.0	5.0	--	4.8	5.0
Primary trace to secondary trace CY1 (RI)	356	240	72.7K	3.0	7.8	--	4.8	7.8
T1 core to secondary pin (RI)	564	266	72.7K	3.0	> 10	--	5.4	> 10
T1 primary winding to secondary pin (RI)	564	266	72.7K	3.0	> 10	--	5.4	> 10
Primary trace to secondary pin (RI)	564	266	72.7K	3.0	7.0	--	5.4	7.0
Core to secondary parts	564	266	72.7K	3.0	7.0	--	5.4	7.0
Supplementary information: 1) Only for frequency above 30 kHz 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied) 3) All the model for 18W series were consider								

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance								P
Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
L to N before fuse (F1) (FI)	340	240	60	1.5	5.0	--	2.4	5.0
Between two poles of fuse (F1) (FI)	340	240	60	1.5	3.0	--	2.4	3.0
Live parts to accessible enclosure (RI)	340	240	60	3.0	5.0	--	4.8	5.0
Live parts to accessible enclosure for detachable plug (RI)	340	240	60	3.0	5.0	--	4.8	5.0
Primary trace to secondary trace CY1 (RI)	356	240	88.7K	3.0	6.0	--	4.8	6.0
T1 core to secondary pin (RI)	524	290	88.7K	3.0	7.3	--	5.8	7.3
T1 primary winding to secondary pin (RI)	524	290	88.7K	3.0	7.3	--	5.8	7.3

IEC 62368-1								
Clause	Requirement + Test						Result - Remark	Verdict

Primary trace to secondary pin (RI)	524	290	88.7K	3.0	7.3	--	5.8	7.3
Core to secondary parts	524	290	88.7K	3.0	7.3	--	5.8	7.3

Supplementary information:

- 1) Only for frequency above 30 kHz
- 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)
- 3) All the model for 24W series were consider

5.4.2, 5.4.3 TABLE: Minimum Clearances/Creepage distance P

Clearance (cl) and creepage distance (cr) at/of/between:	U _p (V)	U _{rms} (V)	Freq ¹⁾ (Hz)	Required cl (mm)	cl (mm)	E.S. ²⁾ (V)	Required cr (mm)	cr (mm)
L to N before fuse (F1) (FI)	340	240	60	1.5	5.3	--	2.4	5.3
Between two poles of fuse (F1) (FI)	340	240	60	1.5	3.2	--	2.4	3.2
Live parts to accessible enclosure (RI)	340	240	60	3.0	5.0	--	4.8	5.0
Live parts to accessible enclosure for detachable plug (RI)	340	240	60	3.0	5.0	--	4.8	5.0
Primary trace to secondary trace CY1	356	240	73.1K	3.0	6.0	--	4.8	6.0
T1 core to secondary pin (RI)	512	302	73.1K	3.0	> 10	--	6.2	> 10
T1 primary winding to secondary pin (RI)	512	302	73.1K	3.0	> 10	--	6.2	> 10
Primary trace to secondary pin (RI)	512	302	73.1K	3.0	6.5	--	6.2	6.5
Core to secondary parts	512	302	73.1K	3.0	6.5	--	6.2	6.5

Supplementary information:

- 1) Only for frequency above 30 kHz
- 2) Complete Electric Strength voltage (E.S. (V) when 5.4.2.4 applied)
- 3) All the model for 36W series were consider

5.4.4.2 TABLE: Minimum distance through insulation P

Distance through insulation	Peak voltage (V)	Insulation	Required DTI	Measured DTI
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

(DTI) at/of			(mm)	(mm)
Enclosure	564	*	0.4	*
Insulation sheet	564	*	-	*
Supplementary information: *See table 4.1.2 for details				

5.4.4.9	TABLE: Solid insulation at frequencies >30 kHz						P
Insulation material	E_P	Frequency (kHz)	K_R	Thickness d (mm)	Insulation	V_{PW} (Vpk)	
-	-	-	-	-	-	-	
Supplementary information: *See table 4.1.2 and 5.4.9 for details							

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:	Voltage shape (Surge, Impulse, AC, DC, etc.)	Test voltage (V)	Breakdown Yes / No	
Functional:				
L to N with fuse disconnected (F1)	DC	2500 V	No	
Basic/supplementary:				
--	--	--	--	
Reinforced:				
--	--	--	--	
L/N to output terminal	DC	4000 V	No	
Primary circuit to accessible enclosure with metal foil	DC	4000 V	No	
Primary winding to secondary winding of Transformer T1	DC	4000 V	No	
Core to secondary winding of Transformer T1	DC	4000 V	No	
One layer insulation tape of Transformer T1	DC	4000 V	No	
Insulation sheet	DC	4000 V	No	
Routine Tests:				
--	--	--	--	
Functional:				
Supplementary information: All the model for 18W, 24W, 36W series were consider				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.5.2.2	TABLE: Stored discharge on capacitors					P
Location	Supply voltage (V)	Operating and fault condition ¹⁾	Switch position	Measured voltage (Vpk)	ES Class	
Input	264	normal	on	12	ES1	
Input	264	OC RX1	on	20	ES1	
Supplementary information:						
X-capacitors installed for testing: 0.22uF						
<input checked="" type="checkbox"/> bleeding resistor rating: RX1=RX2=RX3=RX4=2.4MΩ						
<input type="checkbox"/> ICX:						
1) Normal operating condition (e.g., normal operation, or open fuse), SC= short circuit, OC= open circuit						

5.6.6	TABLE: Resistance of protective conductors and terminations				N/A
Location	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Supplementary information:					

5.7.4	TABLE: Unearthed accessible parts					P
Location	Operating and fault conditions	Supply Voltage (V)	Parameters			ES class
			Voltage (V _{rms} or V _{pk})	Current (A _{rms} or A _{pk})	Freq. (Hz)	
L, N and output	Operating	264	-	0.248mA _{pk}	-	ES1
L, N and enclosure	Operating	264	-	0.066mA _{pk}	-	ES1
Supplementary information:						
Abbreviation: SC= short circuit; OC= open circuit						

5.7.5	TABLE: Earthed accessible conductive part			N/A
Supply voltage (V)				—
Phase(s)	<input type="checkbox"/> Single Phase; <input type="checkbox"/> Three Phase: <input type="checkbox"/> Delta <input type="checkbox"/> Wye			
Power Distribution System	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT			
Location	Fault Condition No in IEC 60990 clause 6.2.2	Touch current (mA)	Comment	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary Information:

5.8	TABLE: Backfeed safeguard in battery backed up supplies					N/A
Location	Supply voltage (V)	Operating and fault condition	Time (s)	Open-circuit voltage (V)	Touch current (A)	ES Class
Supplementary information: Abbreviation: SC= short circuit, OC= open circuit						

6.2.2	TABLE: Power source circuit classifications					P
Location	Operating and fault condition	Voltage (V)	Current (A)	Max. Power ¹⁾ (W)	Time (S)	PS class
Test with model: TM-K018VP-00503000PE-02						
output	Normal	4.81	3.24	15.59	5 S	PS2
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC	0	0	0	5 S	PS1
Test with model: TM-K018VP-00902000PE-02						
output	Normal	8.99	2.22	19.95	5 S	PS2
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC	0	0	0	5 S	PS1
Test with model: TM-K018VP-01201500PE-02						
output	Normal	12.63	1.87	23.60	5 S	PS2
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC	0	0	0	5 S	PS1
Test with model: TM-K018VP-02400750PE-02						
output	Normal	24.68	1.08	26.60	5 S	PS2
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC	0	0	0	5 S	PS1
Test with model: TM-K024VE-00504800PE-02						
output	Normal	4.79	4.98	23.83	5 S	PS2

IEC 62368-1						
Clause	Requirement + Test	Result - Remark			Verdict	
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC	0	0	0	5 S	PS1
Test with model: TM-K024VE-01202000PE-02						
output	Normal	11.87	2.32	27.53	5 S	PS2
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC				5 S	
Test with model: TM-K024VE-02401000PE-02						
output	Normal	23.97	1.30	31.14	5 S	PS2
output	BD1 pin 1-2 SC	0	0	0	5 S	PS1
output	U2 SC	0	0	0	5 S	PS1
Test with model: TM-K036VP-00904000PE-02						
output	Normal	8.73	5.07	44.28	5S	PS2
output	BD1 pin 1-2 SC	0	0	0	5S	PS1
output	Q2 pin 1-2 SC	0	0	0	5S	PS1
Test with model: TM-K036VP-02401500PE-02						
output	Normal	23.65	2.07	48.93	5S	PS2
output	BD1 pin 1-2 SC	0	0	0	5S	PS1
output	Q2 pin 1-2 SC	0	0	0	5S	PS1
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit 1) Measured after 3 s for PS1 and measured after 5 s for PS2 and PS3.						

6.2.3.1	TABLE: Determination of Arcing PIS				P
Location	Open circuit voltage after 3 s (Vpk)	Measured r.m.s current (A)	Calculated value	Arcing PIS? Yes / No	
L and N	340	0.686	223.24	Yes	
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*	*	
Supplementary information: An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V_p) and normal operating condition rms current (I_{rms}) is greater than 15. * An Arcing PIS is considered to exist in primary circuits and secondary circuits					

6.2.3.2	TABLE: Determination of resistive PIS				P
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Location	Operating and fault condition	Dissipate power (W)	Arcing PIS? Yes / No
Output terminal	Overload	48.93	Yes
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*

Supplementary information:

Abbreviation: SC= short circuit; OC= open circuit

A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.

If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single

fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if

electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured

30 s after introduction of the fault.

* A Resistive PIS is considered to exist in primary circuits and secondary circuits.

8.5.5	TABLE: High pressure lamp				N/A
Lamp manufacturer	Lamp type	Explosion method	Longest axis of glass particle (mm)	Particle found beyond 1 m Yes / No	
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Supplementary information:

9.6	TABLE: Temperature measurements for wireless power transmitters							N/A
Supply voltage (V)..... :								—
Max. transmit power of transmitter (W)..... :								—
Foreign objects	w/o receiver and direct contact		with receiver and direct contact		with receiver and at distance of 2 mm		with receiver and at distance of 5 mm	
	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)	Object (°C)	Ambient (°C)
--	--	--	--	--	--	--	--	--

Supplementary information:

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P	
Supply voltage (V)..... :	90	90	264	264	—		
Ambient temperature during test T_{amb} (°C) :	40	40	40	40	—		
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)		
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--		
Plug holder	51.7	-	53.5	-	Ref		
CE1	81.3	-	71.5	-	105		
L1	87.6	-	80.5	-	130		
T1 winding 1	98.0	-	95.7	-	110		
T1 winding 2	99.6	-	98.4	-	110		
CY1	77.6	-	77.1	-	125		
EC4	95.1	-	94.2	-	105		
PCB near BD1	86.5	-	75.2	-	130		
Output lead wire	68.6	-	68.6	-	80		
PCB near U2	93.3	-	92.5	-	130		
LF1	77.0	-	76.8	-	130		
Support	47.9	-	51.0	-	Ref		
Enclosure inside T1 top	76.1	-	75.4	-	Ref		
Enclosure inside T1 bottom	88.9	-	88.0	-	Ref		
Enclosure outside T1 top	69.6	-	69.0	-	Ref		
Enclosure outside T1 bottom	78.3	-	79.3	-	Ref		
	25	-	25	-	-		
Enclosure outside T1 top	54.6	-	54.0	-	77		
Enclosure outside T1 bottom	63.3	-	64.3	-	77		
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
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Supplementary information:							

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Test with model: TM-K018VP-00503000PE-02

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements					P	
Supply voltage (V)..... :	90	90	264	264	—		
Ambient temperature during test T_{amb} (°C) :	40	40	40	40	—		
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)		
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--		
Plug holder	58.9	-	50	-	Ref		
CE1	88.0	-	70.4	-	105		
L1	97.0	-	83.2	-	130		
T1 winding 1	109.6	-	101.9	-	110		
T1 winding 2	107.5	-	101.3	-	110		
CY1	80.7	-	81.1	-	125		
EC4	82.0	-	86.8	-	105		
PCB near BD1	95.0	-	75.9	-	130		
Output lead wire	68.7	-	67	-	80		
PCB near D3	93.6	-	92.9	-	130		
Support	76.6	-	76.5	-	Ref		
Enclosure inside T1 top	56.9	-	47.8	-	Ref		
Enclosure inside T1 bottom	91.1	-	79.9	-	Ref		
Enclosure outside T1 top	82.7	-	86.2	-	Ref		
Enclosure outside T1 bottom	76.2	-	74.3	-	Ref		
	25	-	25	-	-		
Enclosure outside T1 top	61.2	-	59.3	-	77		
Enclosure outside T1 bottom	64.6	-	64.0	-	77		
Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

Test with model: TM-K018VP-00902000PE-02

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T_{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T_{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
Plug holder	60.9	-	58.9	-	Ref
CE1	84.6	-	69.0	-	105
L1	95.9	-	84.6	-	130
T1 winding 1	101.7	-	101.4	-	110
T1 winding 2	98.7	-	99.4	-	110
CY1	69.7	-	71.4	-	125
EC4	75.3	-	78.2	-	105
PCB near BD1	91.7	-	75.4	-	130
Output lead wire	61.5	-	64.3	-	80
PCB near U2	80.2	-	84.8	-	130
LF1	68.3	-	71.3	-	130
Support	55.9	-	54.2	-	Ref
Enclosure inside T1 top	78.7	-	80.5	-	Ref
Enclosure inside T1 bottom	71.4	-	73.2	-	Ref
Enclosure outside T1 top	69.3	-	72.2	-	Ref
Enclosure outside T1 bottom	65.3	-	66.7	-	Ref
	25	-	25	-	-
Enclosure outside T1 top	54.3	-	57.2	-	77
Enclosure outside T1 bottom	50.3	-	51.7	-	77

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Clause	Requirement + Test	Result - Remark	Verdict

Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information:

Test with model: TM-K018VP-01201500PE-02

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T _{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
Plug holder	52.1	51.5	48.9	47.9	Ref
CE1	82.7	81.4	68.7	67.3	105
L1	95.7	93.5	84.3	83.4	130
T1 winding 1	109.3	107.6	106.6	104.6	110
T1 winding 2	107.5	105.2	106.4	103.9	110
CY1	75.7	73.6	74.2	73.1	125
EC4	85.0	81.5	89.2	87.3	105
PCB near BD1	90.5	87.8	74.0	72.0	130
Output lead wire	64.1	59.7	64.8	62.7	80
PCB near U2	96.7	93.9	107.6	105.1	130
LF1	70.4	67.1	70.9	68.9	130
Support	48.8	47.5	46.4	45.4	Ref
Enclosure inside T1 top	81.6	80.0	80.7	79.3	Ref
Enclosure inside T1 bottom	89.6	87.5	86.7	85.4	Ref
Enclosure outside T1 top	74.4	72.9	74.1	72.5	Ref
Enclosure outside T1 bottom	79.5	79.3	79.7	78.1	Ref
	25	-	25	-	-

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Clause	Requirement + Test	Result - Remark		Verdict

Enclosure outside T1 top		59.4	57.9	59.1	57.5	77	
Enclosure outside T1 bottom		64.5	64.3	64.7	63.1	77	
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information:							
Test with model: TM-K018VP-02400750PE-02							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T _{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
Plug holder	53.7	-	56.6	-	Ref
CE1	97.8	-	85.2	-	105
CX1	94.2	-	76.9	-	105
L1	107.9	-	95.0	-	130
PCB near BD1	90.8	-	91.7	-	130
CY1	112.6	-	101.9	-	125
T1 winding 1	109.6	-	103.9	-	110
T1 winding 2	108.9	-	95.2	-	110
PCB near D3	100.2	-	90.1	-	130
EC5	98.3	-	88.7	-	105
LF2	86.2	-	78.1	-	130
Output lead wire	49.7	-	52.7	-	80
Enclosure inside T1 top	83.4	-	71.0	-	Ref
Enclosure inside T1 bottom	90.6	-	78.1	-	Ref
Enclosure outside T1 top	73.8	-	63.7	-	Ref

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure outside T1 bottom	79.9	-	72.0	-	Ref		
	25	-	25	-	-		
Enclosure outside T1 top	58.8	-	48.7	-	77		
Enclosure outside T1 bottom	64.9	-	57.0	-	77		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information: Test with model: TM-K024VE-00504800PE-02							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T _{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
Plug holder	54.7	51.0	48.8	51.3	Ref
CE1	104.8	102.3	79.9	72.5	105
LF1	96.4	92.4	72.6	67.8	130
PCB near BD1	106.6	111.6	76.5	75.7	130
CY1	88.0	80.6	76.7	69.8	125
T1 winding 1	103.4	101.6	90.7	85.1	110
T1 winding 2	106.3	100.4	92.8	84.3	110
EC5	98.9	85.4	87.9	75.0	105
EC4	91.6	77.1	82.2	68.4	105
Output lead wire	78.9	69.7	72.3	62.4	80
Support	49.2	45.4	46.1	44.7	Ref
Enclosure inside T1 top	76.0	74.6	69.7	65.3	Ref
Enclosure inside T1 bottom	92.7	77.9	79.9	67.1	Ref

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Clause	Requirement + Test	Result - Remark	Verdict

Enclosure outside T1 top	70.3	66.6	65.3	58.7	Ref		
Enclosure outside T1 bottom	76.7	75.8	69.1	64.9	Ref		
	25	25	25	25	-		
Enclosure outside T1 top	55.3	51.6	50.3	43.7	77		
Enclosure outside T1 bottom	61.7	60.8	54.1	49.9	77		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information: Test with model: TM-K024VE-01202000PE-02							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T _{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
Plug holder	64.3	-	56.6	-	Ref
CE1	103.9	-	73.8	-	105
LF1	97.5	-	64.7	-	130
PCB near BD1	108.5	-	71.6	-	130
CY1	86.0	-	76.2	-	125
T1 winding 1	104.1	-	90.9	-	110
T1 winding 2	103.6	-	90.5	-	110
PCB near D3	93.9	-	91.1	-	130
EC5	85.3	-	83	-	105
EC4	96.7	-	67.2	-	130
Output lead wire	70.1	-	68.9	-	80
Support	80.2	-	70.9	-	Ref

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Clause	Requirement + Test				Result - Remark		Verdict
Enclosure inside T1 top	73.7	-	65.4	-	Ref		
Enclosure inside T1 bottom	78.9	-	68.3	-	Ref		
Enclosure outside T1 top	68.9	-	62.2	-	Ref		
Enclosure outside T1 bottom	72.4	-	66.1	-	Ref		
	25	-	25	-	-		
Enclosure outside T1 top	53.9	-	47.2	-	77		
Enclosure outside T1 bottom	57.4	-	51.1	-	77		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information: Test with model: TM-K024VE-02401000PE-02							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T _{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
EC1	104.2	-	89.6	-	105
MOV (near input wire)	79.0	-	76.6	-	85
CX1	91.2	-	74.0	-	105
LF1	119.1	-	84.1	-	130
PCB near BD1	112.6	-	85.4	-	130
CY1	86.2	-	80.1	-	125
U2	91.1	-	84.4	-	110
T1 winding 1	108.2	-	97.9	-	110
T1 winding 2	109.4	-	105.7	-	110
PCB near U3	99.5	-	94.2	-	130

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Clause	Requirement + Test				Result - Remark		Verdict
EC4	95.2	-	90.6	-	105		
L1	89.4	-	86.2	-	130		
Output lead wire	73.9	-	72.1	-	80		
Support	56.2	-	52.1	-	Ref		
Enclosure inside T1 top	77.0	-	74.0	-	Ref		
Enclosure inside T1 bottom	86.0	-	75.5	-	Ref		
Enclosure outside T1 top	70.5	-	68.8	-	Ref		
Enclosure outside T1 bottom	79	-	66.9	-	Ref		
	25	-	25	-	-		
Enclosure outside T1 top	55.5	-	53.8	-	77		
Enclosure outside T1 bottom	64	-	51.9	-	77		
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information: Test with model: TM-K036VP-00904000PE-02							

5.4.1.4, 9.3, B.1.5, B.2.6	TABLE: Temperature measurements				P
Supply voltage (V)..... :	90	90	264	264	—
Ambient temperature during test T _{amb} (°C) :	40	40	40	40	—
Maximum measured temperature T of part/at:	T (°C)				Allowed T _{max} (°C)
LOCTION	HORIZO NTAL	VERTICA L	HORIZO NTAL	VERTICA L	--
EC1	99.7	97.8	83.6	82.6	105
MOV (near input wire)	75.4	70.2	74.1	73	85
CX1	89.1	87.6	70.7	69.6	105
LF1	116.9	112.6	79	78	130
PCB near BD1	113.1	113.5	83.5	82.5	130
CY1	76.6	74.2	74.4	73.4	125

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
U2		81.4	83.8	79.8	78.7		110
T1 winding 1		101.9	95.3	90.3	89.5		110
T1 winding 2		106.0	91.9	99.5	98.7		110
PCB near U3		92.4	99.7	100.7	99.6		130
EC4		80.4	73.8	81.3	80.4		105
L1		71.1	67.5	73.2	72.3		130
Output lead wire		64.1	57.0	67.1	66.2		80
Support		59.6	59.2	55.9	55		Ref
Enclosure inside T1 top		73.4	62.5	71.6	70.8		Ref
Enclosure inside T1 bottom		77.5	75.1	75.4	74.6		Ref
Enclosure outside T1 top		66.1	56.9	65.6	64.7		Ref
Enclosure outside T1 bottom		69.9	69.2	69.9	68.9		Ref
		25	25	25	25		-
Enclosure outside T1 top		51.1	41.9	50.6	49.7		77
Enclosure outside T1 bottom		54.9	54.2	54.9	53.9		77
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
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Supplementary information: Test with model: TM-K036VP-02401500PE-02							

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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5		TABLE: Input test							P
U (V)	Hz	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
90	50	0.353	--	18.26	--	F1	0.353	Test with model: TM-K018VP-00503000PE-02 Load:5Vdc, 3.0A	
90	60	0.358	--	18.23	--	F1	0.358		
100	50	0.329	0.45	18.13	--	F1	0.329		
100	60	0.334	0.45	18.13	--	F1	0.334		
240	50	0.206	0.45	18.08	--	F1	0.206		
240	60	0.205	0.45	18.08	--	F1	0.205		
264	50	0.194	--	18.17	--	F1	0.194		
264	60	0.193	--	18.17	--	F1	0.193		
90	50	0.400	--	21.51	--	F1	0.400	Test with model: TM-K018VP-00902000PE-02 Load:9Vdc, 2.0A	
90	60	0.404	--	21.46	--	F1	0.404		
100	50	0.364	0.45	21.31	--	F1	0.364		
100	60	0.369	0.45	21.30	--	F1	0.369		
240	50	0.204	0.45	21.14	--	F1	0.204		
240	60	0.202	0.45	21.13	--	F1	0.202		
264	50	0.191	--	21.26	--	F1	0.191		
264	60	0.189	--	21.27	--	F1	0.189		
90	50	0.412	--	21.98	--	F1	0.412	Test with model: TM-K018VP-01201500PE-02 Load:12Vdc, 1.5A	
90	60	0.415	--	21.94	--	F1	0.415		
100	50	0.377	0.45	21.85	--	F1	0.377		
100	60	0.383	0.45	21.79	--	F1	0.383		
240	50	0.217	0.45	21.72	--	F1	0.217		
240	60	0.213	0.45	21.74	--	F1	0.213		
264	50	0.201	--	21.87	--	F1	0.201		
264	60	0.199	--	21.84	--	F1	0.199		
90	50	0.401	--	21.32	--	F1	0.401	Test with model: TM-K018VP-02400750PE-02 Load:24Vdc, 0.75A	
90	60	0.405	--	21.28	--	F1	0.405		
100	50	0.366	0.45	21.16	--	F1	0.366		
100	60	0.372	0.45	21.15	--	F1	0.372		
240	50	0.205	0.45	21.23	--	F1	0.205		
240	60	0.203	0.45	21.24	--	F1	0.203		

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Clause	Requirement + Test				Result - Remark			Verdict	
264	50	0.191	--	21.45	--	F1	0.191	Test with model: TM-K024VE-00504800PE-02 Load:5Vdc, 4.8A	
264	60	0.189	--	21.45	--	F1	0.189		
90	50	0.533	--	28.81	--	F1	0.533		
90	60	0.537	--	28.75	--	F1	0.537		
100	50	0.491	0.6	28.57	--	F1	0.491		
100	60	0.498	0.6	28.53	--	F1	0.498		
240	50	0.272	0.6	28.41	--	F1	0.272		
240	60	0.270	0.6	28.39	--	F1	0.270		
264	50	0.257	--	28.50	--	F1	0.257		
264	60	0.255	--	28.51	--	F1	0.255		
90	50	0.527	--	28.01	--	F1	0.527	Test with model: TM-K024VE-01202000PE-02 Load:12Vdc, 2A	
90	60	0.533	--	27.99	--	F1	0.533		
100	50	0.485	0.6	27.78	--	F1	0.485		
100	60	0.494	0.6	27.74	--	F1	0.494		
240	50	0.291	0.6	27.18	--	F1	0.291		
240	60	0.289	0.6	27.19	--	F1	0.289		
264	50	0.276	--	27.31	--	F1	0.276		
264	60	0.274	--	27.29	--	F1	0.274		
90	50	0.542	--	27.89	--	F1	0.542		
90	60	0.547	--	27.84	--	F1	0.547		
100	50	0.500	0.6	27.56	--	F1	0.500	Test with model: TM-K024VE-02401000PE-02 Load:24Vdc, 1A	
100	60	0.505	0.6	27.54	--	F1	0.505		
240	50	0.299	0.6	27.21	--	F1	0.299		
240	60	0.297	0.6	27.22	--	F1	0.297		
264	50	0.270	--	27.59	--	F1	0.270		
264	60	0.268	--	27.50	--	F1	0.268		
90	50	0.735	--	41.14	--	F1	0.735		Test with model: TM-K036VP-00904000PE-02 Load:9Vdc, 4A
90	60	0.733	--	41.20	--	F1	0.733		
100	50	0.682	0.9	40.82	--	F1	0.682		
100	60	0.686	0.9	40.79	--	F1	0.686		
240	50	0.333	0.9	40.07	--	F1	0.333		
240	60	0.333	0.9	40.26	--	F1	0.333		
264	50	0.313	--	40.18	--	F1	0.313		

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Clause	Requirement + Test	Result - Remark	Verdict

264	60	0.310	--	40.12	--	F1	0.310	
90	50		--		--	F1		Test with model: TM-K036VP-02401500PE-02 Load:24Vdc, 1.5A
90	60		--		--	F1		
100	50		0.9		--	F1		
100	60		0.9		--	F1		
240	50		0.9		--	F1		
240	60		0.9		--	F1		
264	50		--		--	F1		
264	60		--		--	F1		

Supplementary information:

Equipment may be have rated current or rated power or both. Both should be measured

B.3, B.4		TABLE: Abnormal operating and fault condition tests							P
Ambient temperature T _{amb} (°C).....		25							—
Power source for EUT: Manufacturer, model/type, output rating ..		--							—
Component No.	Condition	Supply voltage (V)	Test time	Fuse no.	Fuse current (A)	T-couple	Temp. (°C)	Observation	
Test with model TM-K018VP-00503000PE-02									
Output	Short circuit	264	10 min	F1	0.003	-	--	EUT protected immediately	
Output	Overload	264	7h	F1	0.17	T1 winding	115.2	output Load to 5.0Vdc, 3.35A, EUT run to steady condition, then increased the output load, EUT protected immediately, touch current 0.248mA peak, no hazards	
						Enclosure outside	77.3 (shift to 25°C ambient)		
						Ambient	40		
Test with model TM-K018VP-00902000PE-02									
Output	Short circuit	264	10 min	F1	0.004	-	--	EUT protected immediately	
Output	Overload	264	7h	F1	0.047	T1 winding	109.9	output Load to 9.0Vdc, 2.12A, EUT run to	
						Enclosure	69.0(shift		

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Clause	Requirement + Test	Result - Remark					Verdict	
						re outside Ambient	to 25°C ambient) 40	steady condition, then increased the output load, EUT protected immediately, touch current 0.154mApeak, no hazards
Test with model TM-K018VP-01201500PE-02								
Output	Short circuit	264	10 min	F1	0.002	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.206	T1 winding	116.2	output Load to 12.0Vdc,1.85A, EUT run to steady condition, then increased the output load, EUT protected immediately, touch current 0.248mApeak, no hazards
						Enclosure outside	77.5 (shift to 25°C ambient)	
						Ambient	40	
Test with model TM-K018VP-02400750PE-02								
Output	Short circuit	264	10 min	F1	0.005	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.206	T1 winding	134.4	output Load to 24.0Vdc,1.07A, EUT run to steady condition, then increased the output load, EUT protected immediately, touch current 0.248mApeak, no hazards
						Enclosure outside	79.9(shift to 25°C ambient)	
						Ambient	40	
BD1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
EC1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.

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Clause	Requirement + Test					Result - Remark		Verdict
EC2	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
U1 pin 1-4	Short circuit	264	10min	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
U1 pin 1-8	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, R6A, U1 damage, no hazards.
T1 pin 1-2	Short circuit	264	10 mins	F1	0.004	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 4-5	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 6-7	Short circuit	264	10 mins	F1	0.004	Enclosure outside near T1	--	EUT protected, no hazards.
D5	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
CE4	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
Test with model TM-K024VE-00504800PE-02								
Output	Short circuit	264	10 min	F1	0.005	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.27	T1 winding	106.9	output Load to 5.0Vdc, 4.9A, EUT run to steady condition, then increased the output load, EUT protected immediately,
						Enclosure outside	58.6 (shift to 25°C ambient)	
						Ambien	40	

IEC 62368-1								
Clause	Requirement + Test	Result - Remark					Verdict	
						t		touch current 0.212mApeak, no hazards
Test with model TM-K024VE-01202000PE-02								
Output	Short circuit	264	10 min	F1	0.005	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.25	T1 winding	112.8	output Load to 12.0Vdc, 2.28A, EUT run to steady condition, then increased the output load, EUT protected immediately, touch current 0.212mApeak, no hazards
						Enclosure outside	72.0 (shift to 25°C ambient)	
						Ambient	40	
Test with model TM-K024VE-02401000PE-02								
Output	Short circuit	264	10 min	F1	0.003	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.33	T1 winding	112.1	output Load to 24.0Vdc, 1.3A, EUT run to steady condition, then increased the output load, EUT protected immediately, touch current 0.212mApeak, no hazards
						Enclosure outside	69.2 (shift to 25°C ambient)	
						Ambient	40	
BD1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
EC1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
EC1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
U1 pin 1-6	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, R6, R7, R8, U1 damage, no hazards.
U1 pin 1-2	Short circuit	264	10min	F1	0.005	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 1-2	Short circuit	264	10 mins	F1	0.005	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 3-5	Short circuit	264	10 mins	F1	0.005	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 7-8	Short circuit	264	10 mins	F1	0.005	Enclosure outside near T1	--	EUT protected, no hazards.
D3	Short circuit	264	10 mins	F1	0.005	Enclosure outside near T1	--	EUT protected, no hazards.
CE5	Short circuit	264	10 mins	F1	0.005	Enclosure outside near T1	--	EUT protected, no hazards.
Test with model TM-K036VP-00904000PE-02								
Output	Short circuit	264	10 min	F1	0.003	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.375	T1 winding	126.1	output Load to 9.0Vdc, 5.0A, EUT run to steady condition, then increased the output load, EUT protected immediately,
						Enclosure outside	70.2 (shift to 25°C ambient)	
						Ambient	40	

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
								touch current 0.248mApeak, no hazards
Test with model TM-K036VP-02401500PE-02								
Output	Short circuit	264	10 min	F1	0.003	-	--	EUT protected immediately
Output	Overload	264	7h	F1	0.402	T1 winding	107.6	output Load to 24.0Vdc, 2.08A, EUT run to steady condition, then increased the output load, EUT protected immediately, touch current 0.248mApeak, no hazards
						Enclosure outside	54.4 (shift to 25°C ambient)	
						Ambient	40	
BD1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
EC1	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
Q1 pin g-s	Short circuit	264	10min	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
Q1 pin d-s	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
Q1 pin d-g	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
EC2	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, no hazards.
U1 pin 1-4	Short circuit	264	<1 S	F1	>10	Enclosure outside near T1	--	EUT shut down immediately, fuse open, RS1, RS2, RS3, RS4, U1

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict

								damage, no hazards.
U1 pin 1-2	Short circuit	264	10min	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 1-2	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 3-5	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
T1 pin 6-7	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
U2 pin 1-2	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
U2 pin 3-4	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
Q2 pin 1-3	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.
CE4	Short circuit	264	10 mins	F1	0.003	Enclosure outside near T1	--	EUT protected, no hazards.

Supplementary information:

Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.

Limited: T1 winding: 165 C; enclosure: 87 C

Where the Current Fuse F1 opened, testing was repeated 10 times with the same result.

When there are other components damaged, test was repeated 3 times with the same result.

All the Current Fuse have been tested and with the same result.

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

M.3	TABLE: Protection circuits for batteries provided within the equipment						N/A
Is it possible to install the battery in a reverse polarity position?							—
Equipment Specification	Charging						
	Voltage (V)			Current (A)			
Manufacturer/type	Battery specification						
	Non-rechargeable batteries			Rechargeable batteries			
	Discharging current (A)	Unintentional charging current (A)	Charging		Discharging current (A)	Reverse charging current (A)	
			Voltage (V)	Current (A)			
Note: The tests of M.3.2 are applicable only when above appropriate data is not available.							
Specified battery temperature (°C)							
Component No.	Fault condition	Charge/discharge mode	Test time	Temp. (°C)	Current (A)	Voltage (V)	Observation
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit NL= no chemical leakage; NS= no spillage of liquid; NE= no explosion; NF= no emission of flame or expulsion of molten metal.							

M.4.2	TABLE: Charging safeguards for equipment containing a secondary lithium battery					N/A
Maximum specified charging voltage (V)						—
Maximum specified charging current (A)						—
Highest specified charging temperature (°C)						
Lowest specified charging temperature (°C)						
Battery manufacturer/type	Operating and fault condition	Measurement			Observation	
		Charging voltage (V)	Charging current (A)	Temp. (°C)		
Supplementary information: Abbreviation: SC= short circuit; OC= open circuit; MSCV= maximum specified charging voltage; MSCC= maximum specified charging current; HSCT= highest specified charging temperature; LSCT= lowest specified charging temperature						

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)							P
Output Circuit	Condition	U _{oc} (V)	Time (s)	I _{sc} (A)		S (VA)		
				Meas.	Limit	Meas.	Limit	
Test with TM-K018VP-00503000PE-02								
output	Normal	5.08	8S	3.24	8	15.59	100	
Test with TM-K018VP-00902000PE-02								
output	Normal	9.13	8S	2.22	8	19.95	100	
Test with TM-K018VP-01201500PE-02								
output	Normal	12.55	8S	1.89	8	23.60	100	
Test with TM-K018VP-02400750PE-02								
output	Normal	24.10	8S	1.10	8	24.68	100	
Test with TM-K024VE-00504800PE-02								
output	Normal	5.18	8S	4.98	8	23.83	100	
Test with TM-K024VE-01202000PE-02								
USB A	Normal	12.31	8S	2.37	8	27.53	100	
Test with TM-K024VE-02401000PE-02								
output	Normal	24.48	8S	1.32	8	31.15	100	
Test with TM-K036VP-00904000PE-02								
output	Normal	9.21	8S	5.07	8	44.28	100	
Test with TM-K036VP-02401500PE-02								
output	Normal	24.07	8S	2.07	8	48.93	100	
Supplementary Information: SC=Short circuit, OC=Open circuit See clause B.4 for details								

T.2, T.3, T.4, T.5	TABLE: Steady force test						P
Part/Location	Material	Thickness (mm)	Probe	Force (N)	Test Duration (s)	Observation	
All internal components	--	--	Jointed test probe	10	5	Not damaged, all safeguard remain effective.	
Top enclosure	*	2.0		100	5	No damage, no hazard	

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Clause	Requirement + Test	Result - Remark	Verdict

Side enclosure	*	1.5	100	5	No damage, no hazard
Bottom enclosure	*	1.5	100	5	No damage, no hazard

Supplementary information:

* See table 4.1.2 for details

All the model for 18W, 24W, 36W series were consider

T.6, T.9	TABLE: Impact test				N/A
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Supplementary information:					

T.7	TABLE: Drop test				P
Location/part	Material	Thickness (mm)	Height (mm)	Observation	
Top	*	2.0	1000	No damage, no hazard	
Side	*	2.0	1000	No damage, no hazard	
Bottom	*	2.0	1000	No damage, no hazard	
Supplementary information:					
* See table 4.1.2 for details					
All the model for 18W, 24W, 36W series were consider					

T.8	TABLE: Stress relief test				P
Location/Part	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
External enclosure	*	2.0	103	7	No damage, no hazard
Supplementary information:					
* See table 4.1.2 for details					
All the model for 18W, 24W, 36W series were consider					

X	TABLE: Alternative method for determining minimum clearances distances			N/A
Clearance distanced	Peak of working voltage	Required cl	Measured cl	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

between:	(V)	(mm)	(mm)
Supplementary information:			

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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
Enclosure	Sabic Innovative Plastics US L L C	940(f1), 945 (GG)	PC, V-0, 120°C, min. 2.0 mm thickness	Applicable parts of IEC/EN 62368- 1	Tested in appliance and UL E121562	
Plug holder	Sabic Innovative Plastics US L L C	940(f1), 945 (GG)	PC, V-0, 120°C	Applicable parts of IEC/EN 62368- 1	Tested in appliance and UL E121562	
Insulation sheet under PCB for fixed plug model	Sichuan Dongfang Insulating Material Co Ltd	DFPET 6023	PET, V-2, 105°C, Min. 0.2 mm thickness	Applicable parts of IEC/EN 62368- 1	Tested in appliance and UL E199019	
Insulation sheet (Alternative)	Sichuan Longhua Film Co Ltd	PP-(i)(j)	PP, V-0, 100°C, Min. 0.2 mm thickness,	Applicable parts of IEC/EN 62368- 1	Tested in appliance and UL E254551	
Insulation sheet (Alternative)	CHENGDU KANGLONGXIN PLASTICS CO LTD	KLX PP BK-10	PP, V-0, 110°C, Min. 0.2 mm thickness	Applicable parts of IEC/EN 62368- 1	Tested in appliance and UL E315185	
Insulation sheet (Alternative)	Guang Zhou Pink Sun Enterprises Co Ltd	PS-A, PS-BG, PS-CG	PP, V-0, 125°C, Min. 0.2 mm thickness	Applicable parts of IEC/EN 62368- 1	Tested in appliance and UL E229613	
PCB	KINGBOARD LAMINATES HOLDINGS LTD	KB-616(X), KB-5150	Rated V-0, 130°C	UL 94, UL 796	UL E123995	
PCB (Alternative)	SHANDONG JINBAO TECH- INNOV CORPORATION	ZD-16F, ZD- 95(G)F	Rated V-0, 130°C	UL 94, UL 796	UL E141940	
PCB (Alternative)	Interchangeable	Interchangeable	Min. V-0, 130°C	UL 94, UL 796	S, ETL, UL or other EU certification marks	
Fuse (F1) for 18W, 24W, 36W series models	Suzhou Walter Electronic Co. Ltd.	2010	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 40018781 UL E56092	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	CONQUER ELECTRONICS CO LTD	MST	T2A , 250Vac	IEC 60127-1 IEC 60127-3-3:2015	VDE 40017118 UL E82636
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	SHENZHEN LANSON ELECTRONICS CO LTD	SMT	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 40012592 UL E221465
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	2009	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 40028260 UL E318938
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 40033369 UL E300003
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	LITTELFUSE WICKMANN WERKE	392	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 126983 UL E67006
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	XC ELECTRONICS (SHENZHEN) CORP LTD	5TE	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 40029550 UL E249609
Fuse (F1) for 18W, 24W, 36W series models (Alternative)	DONGGUAN CHEVRON ELECTRONIC TECHNOLOGY CO LTD	5TE	T2A , 250Vac	IEC 60127-1 IEC 60127-3	VDE 40038565 UL E358589
Input lead wire	DONGGUAN WINWIN ELECTRONICS CO LTD	1007, 1015	VW-1, 80°C, 300V, Min. 24 AWG	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E332199
Input lead wire (Alternative)	Interchangeable	1007, 1015	VW-1, 80°C, 300V, Min. 24 AWG	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL
Storage capacitor (CE1 CE2)	Interchangeable	Interchangeable	2.2 – 10µF, min. 400V, min. 105°C	Applicable parts of IEC/EN 62368-1	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Rectifier diode (BD1)	Interchangeable	Interchangeable	Min. 0.6A, Min. 600V	Applicable parts of IEC/EN 62368-1	Tested with appliance
Y Capacitor (CY1) for 18W, series models (Optional)	Dongguan Easy-Gather Electronic Co Ltd	DCF	Max. 1000pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40022942
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	DONGGUAN QINHONG (QNR) ELECTRONIC TECHNOLOGY CO LTD	CT7	Max. 1000pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40046285
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	Shaanxi Huaxing Electronic Development Co.Ltd	CT 7	Max. 1000pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40015542
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	Guangdong South Hongming Electronic Science & Technology Co Ltd	F	Max. 1000pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40036393
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD Series	Max. 1000pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40025754
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	GUANGDONG HUIWAN ELECTRONICS TECHNOLOGY CO LTD	AR	Max.1000pF, min.250V AC, Y1 type,125°C	IEC/EN 60348-14	VDE 40043989
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Max.1000pF, min.250V AC, Y1 type,125°C	IEC/EN 60348-14	VDE 40034438
Y Capacitor (CY1) for 18W, series models (Optional) (Alternative)	Interchangeable	Interchangeable	Max.1000pF,min.250V AC,Y1 type,125°C	IEC/EN 60348-14	VDE

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Y Capacitor (CY1, CY1A) for 24W series models (Optional)	Dongguan Easy-Gather Electronic Co Ltd	DCF	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40022942
Y Capacitor (CY1, CY1A) for 24W series models (Optional)	DONGGUAN QINHONG (QNR) ELECTRONIC TECHNOLOGY CO LTD	CT7	Max. 2200pF, min. 250VAC, 125°C, Y1 type	IEC/EN 60384-14	VDE 40046285
Y Capacitor (CY1, CY1A) for 24W series models (Optional)	Shaanxi Huaxing Electronic Development Co.Ltd	CT 7	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40015542
Y Capacitor (CY1, CY1A) for 24W series models (Optional)	Guangdong South Hongming Electronic Science & Technology Co Ltd	F	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40036393
Y Capacitor (CY1, CY1A) for 24W series models (Optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD Series	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40025754
Y Capacitor (CY1,CY1A) for 24W series models (Optional)	GUANGDONG HUIWAN ELECTRONICS TECHNOLOGY CO LTD	AR	Max.2200pF, min.250V AC, Y1 type,125°C	IEC/EN 60348-14	VDE 40043989
Y Capacitor (CY1,CY1A) for 24W series models (Optional)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Max.2200pF, min.250V AC, Y1 type,125°C	IEC/EN 60348-14	VDE 40034438
Y Capacitor (CY1,CY1A) for 24W series models (Optional)	Interchangeable	Interchangeable	Max.2200pF,min.250V AC,Y1 type,125°C	IEC/EN 60348-14	VDE
Y Capacitor (CY3) for 36W, series models (Optional)	Dongguan Easy-Gather Electronic Co Ltd	DCF	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40022942

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	DONGGUAN QINHONG (QNR) ELECTRONIC TECHNOLOGY CO LTD	CT7	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40046285
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	Shaanxi Huaxing Electronic Development Co.Ltd	CT 7	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40015542
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	Guangdong South Hongming Electronic Science & Technology Co Ltd	F	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40036393
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co Ltd	CD Series	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60384-14	VDE 40025754
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	GUANGDONG HUIWAN ELECTRONICS TECHNOLOGY CO LTD	AR	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60348-14	VDE 40043989
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Max. 2200pF, min. 250V AC, Y1 type, 125°C	IEC/EN 60348-14	VDE 40034438
Y Capacitor (CY3) for 36W, series models (Optional) (Alternative)	Interchangeable	Interchangeable	Max.2200pF,min.250V AC,Y1 type,125°C	IEC/EN 60348-14	VDE
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional)	Dongguan Easy-Gather Electronic Co Ltd	DCF	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40015758

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	Guangdong South Hongming Electronic Science & Technology Co Ltd	F	Max. 4700pF, minimum 250Vac, minimum 125°C;Y2 type	IEC/EN 60348-14	VDE 40036246
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CE Series	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40025748
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	GUANGDONG HUIWAN ELECTRONICS TECHNOLOGY CO LTD	AB	Max. 4700pF, minimum 250Vac, minimum 125°C;Y2 type	IEC/EN 60348-14	VDE 40043991
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40034436
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	DONGGUAN QINHONG (QNR) ELECTRONIC TECHNOLOGY CO LTD	CT7	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40046285
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	Shaanxi Huaxing Electronic Development Co.Ltd	CT7	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40032125

IEC 62368-1					
Clause	Requirement + Test		Result - Remark	Verdict	
Y Capacitor (CY2, CY3, CY2A, CY3A) for 24W series models (Optional) (Alternative)	Interchangeable	Interchangeable	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE
Y Capacitor (CY1, CY2) for 36W series models (Optional)	Dongguan Easy-Gather Electronic Co Ltd	DCF	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40015758
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	Guangdong South Hongming Electronic Science & Technology Co Ltd	F	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40036246
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CE Series	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40025748
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	GUANGDONG HUIWAN ELECTRONICS TECHNOLOGY CO LTD	AB	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40043991
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40034436
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	DONGGUAN QINHONG (QNR) ELECTRONIC TECHNOLOGY CO LTD	CT7	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40046285

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Clause	Requirement + Test			Result - Remark	Verdict
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	Shaanxi Huaxing Electronic Development Co.Ltd	CT7	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE 40032125
Y Capacitor (CY1, CY2) for 36W series models (Optional) (Alternative)	Interchangeable	Interchangeable	Max. 4700pF, minimum 250Vac, minimum 125°C; Y2 type	IEC/EN 60348-14	VDE
Optocoupler (U2)	SHARP CORP ELECTRONIC COMPONENTS AND DEVICES COMPANY	PC817	Ext. Cr. >=7.6mm, Dti.>=0.4mm, 110°C	EN 60747-5-5:2011; A1:2015	VDE 40008087 UL E64380
Optocoupler (U2) (Alternative)	EVERLIGHT ELECTRONICS CO LTD	EL817	Ext. Cr. >=7.6mm, Dti.>=0.4mm, 110°C	EN 60747-5-5:2011; A1:2015	VDE 132249 UL E214129
Optocoupler (U2) (Alternative)	CHINA RESOURCES SEMICONDUCTOR(SHENZHEN)LIMITED	PC817x	Ext. Cr. >=7.6mm, Dti.>=0.4mm, 110°C	EN 60747-5-5:2011; A1:2015	VDE 40042139 UL E465130
Optocoupler (U2) (Alternative)	LITE-ON TECHNOLOGY CORP	LTV-817	Ext. Cr. >=7.6mm, Dti.>=0.4mm, 110°C	EN 60747-5-5:2011; A1:2015	VDE 40015248 UL E113898
Optocoupler (U2) (Alternative)	BRIGHT LED ELECTRONICS CORP	BPC-817	Ext. Cr. >=7.6mm, Dti.>=0.4mm, 110°C	EN 60747-5-5:2011; A1:2015	VDE 40007240 UL E236324
Optocoupler (U2) (Alternative)	SHENZHEN ORIENT COMPONENTS CO LTD	ORPC-817	Ext. Cr. >=7.6mm, Dti.>=0.4mm, 110°C	EN 60747-5-5:2011; A1:2015	VDE 40029733 UL E323844
Varistor (MOV1) (Optional)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMENT ZONE SONGTIAN ENTERPRISE CO LTD	10D471K 10D561K	min. 300Vac Min 85°C, min.V-1	UL1449 IEC 61051-1 IEC 61051-2	UL E330837 VDE 40023049
Varistor (MOV1) (Optional) (Alternative)	GUANGDONG HUIWAN ELECTRONICS TECHNOLOGY CO LTD	V-471K-10 V-561K-10	min. 300Vac Min 85°C, min.V-1	VZCA2 UL1449 IEC 61051-1 IEC 61051-2	UL E480104 VDE 40043880

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Clause	Requirement + Test			Result - Remark	Verdict
Varistor (MOV1) (Optional) (Alternative)	SHAANXI HUAXING ELECTRONIC GROUP CO LTD	MYG20G10K4 71 MYG20G10K5 61	min. 300Vac Min 85°C, min.V-1	VZCA2 UL1449 IEC 61051-1 IEC 61051-2	UL329651 VDE712099
Varistor (MOV1) (Optional) (Alternative)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR10471 TVR10561	min. 300Vac Min 85°C, min.V-1	UL1449 IEC 61051-1 IEC 61051-2	UL E314979 VDE 005944
Varistor (MOV1) (Optional) (Alternative)	JOYIN CO LTD	10N471K 10N561K	min. 300Vac Min 85°C, min.V-1	UL1449 IEC 61051-1 IEC 61051-2	UL E325508 VDE 005937
X-Capacitor (CX1)	DONGGUAN EASY-GATHER ELECTRONIC CO LTD	MKP or MKP-X2	0.22uF, minimum 250Vac, 105 degree C. Marked with X2	UL 60384-14 IEC/EN 60384-14	VDE 40022258 UL E252221
X-Capacitor (CX1) (Alternative)	WINDAY ELECTRONIC INDUSTRIAL CO LTD	MPX	0.22uF, minimum 250Vac, 105 degree C. Marked with X2	UL 60384-14 IEC/EN 60384-14	VDE 40030283 UL E302125
X-Capacitor (CX1) (Alternative)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	MPX	0.22uF, minimum 250Vac, 105 degree C. Marked with X2	UL 60384-14 IEC/EN 60384-14	VDE 40034679 UL E208107
X-Capacitor (CX1) (Alternative)	Interchangeable	Interchangeable	0.22uF, minimum 250Vac, 105 degree C. Marked with X2	UL 60384-14 IEC/EN 60384-14	VDE
Bleeder Resistors (RX1 RX2 RX3 RX4)	Interchangeable	Interchangeable	Both in series and parallel, maximum 2.4Mohm, minimum 1/4W.	Applicable parts of IEC/EN 62368-1	Tested in appliance
Line Filters (L1) for 18W series models	Interchangeable	TM-K024VP-LF1	Min. 180uH, min.130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance
Line Filters (LF1) for 24W, 36W series models	Interchangeable	TM-K036VP-LF1	Min. 10mH, 130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance

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Clause	Requirement + Test			Result - Remark	Verdict

Transformer (T1) for 18W series models	Dongguan Hongjun Hardware Co Ltd	TM-K018VP-T1, TM-K018VP-T3	Class B	Applicable parts of IEC/EN 62368-1	Tested in appliance
Transformer (T1) for 24W series models	Dongguan HuiYe Electronics Co.,Ltd	TM-K024VE-T4, TM-K024VE-T5	Class B	Applicable parts of IEC/EN 62368-1	Tested in appliance
Transformer (T1) for 36W series models	Dongguan Hongjun Hardware Co Ltd	TM-K036VP-T1, TM-K036VP-T2, TM-K036VP-T3	Class B	Applicable parts of IEC/EN 62368-1	Tested in appliance
- Bobbin	Sumitomo Bakelite Co Ltd	PM-9630, PM-9820	Phenolic, rated V-0, 150°C, min. thickness 0.5mm	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E41429
- Bobbin (Alternative)	CHANG CHUN PLASTICS CO LTD	T200HF, T200NA	Phenolic, rated V-0, 150°C, min. thickness 0.5mm	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E41429
- Magnet wire	PACIFIC ELECTRIC WIRE & CABLE CO LTD	DD-NYU	130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E84081
- Magnet wire (Alternative)	HUNG CHENG (VIETNAM) INDUSTRY CO LTD	UEW	130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E223922
- Magnet wire (Alternative)	Interchangeable	Interchangeable	Min. 130°C	Applicable parts of IEC/EN 62368-1	S, ETL, UL or other EU certification marks
- Insulation tape	3m Company Electrical Markets Div (Emd)	1350F-1 (b), 1350F-2 (c)	130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E17385
- Insulation tape (Alternative)	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	CT* (b)(g), PZ* (b)	130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E165111
- Triple insulated wire	Furukawa Electric Co Ltd	TEX-E	130°C	IEC/EN 62368-1	VDE 006735

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Clause	Requirement + Test			Result - Remark	Verdict
- Triple insulated wire (Alternative)	Totoku Electric Co Ltd	TIW-2X\$+, TIW-2XY\$+	130°C	IEC/EN 60950-1	VDE 40005152
- Triple insulated wire (Alternative)	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B) Serie(s)	130°C	IEC/EN 60950-1	VDE 136581
- Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFS,TFT	Min. 200°C, 300V, VW-1	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E156256
- Tube (Alternative)	ZEUS INDUSTRIAL PRODUCTS INC	TFE-TW-300	Min. 200°C, 300V, VW-1	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E64007
- Tube (Alternative)	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-T	Min. 200°C, 300V, VW-1	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E180908
- Varnish	John C DOLPH CO	BC-346A, BC-346-A	Min. 130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E317427
- Varnish (Alternative)	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	468-2 (d) 468-2FC (d)	Min. 130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E75225
- Varnish (Alternative)	HITACHI CHEMICAL CO LTD	WP-2952F-2G	Min. 130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E72979
- Varnish (Alternative)	MAOMING YINGDA FINE CHEMICAL CO LTD	MG209, YD309, YD389	Min. 130°C	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL E336675
Output cord	DONGGUAN LICHENG ELECTRONICS CO LTD	1185, 2464, 2468	VW-1, 80°C, 300V, Min. 24 AWG	Applicable parts of IEC/EN 62368-1	Tested in Appliance and UL E205058
Output cord (Alternative)	Interchangeable	1185, 2464, 2468	VW-1, 80°C, 300V, Min. 24 AWG	Applicable parts of IEC/EN 62368-1	Tested in appliance and UL

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

- 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.
- 2) Description line content is optional. Main line description needs to clearly detail the component used for testing
- 3) License available upon request for all the certified components

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Appendix: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS)			
Differences according to : EN IEC 62368-1:2020+A11:2020			
Attachment Form No. : EU_GD_IEC62368_1C			
Attachment Originator : UL(Demko)			
Master Attachment : 2020-03-10			
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	CENELEC COMMON MODIFICATIONS (EN)		--
	Clause numbers in the cells that are shaded light grey are clause references in EN IEC 62368-1:2020+A11:2020. All other clause numbers in that column, except for those in the paragraph below, refers to IEC 62368-1:2018. Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2018 are prefixed "Z".		--
	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations Annex ZD (informative) IEC and CENELEC code designations for flexible cords		P
1	Modification to Clause 3 .		N/A
3.3.19	Sound exposure <i>Replace 3.3.19 of IEC 62368-1 with the following definitions:</i>		
3.3.19.1	momentary exposure level, MEL metric for estimating 1 s sound exposure level from the HD 483-1 S2 test signal applied to both channels, based on EN 50332-1:2013, 4.2. Note 1 to entry: MEL is measured as A-weighted levels in dB. Note 2 to entry: See B.3 of EN 50332-3:2017 for additional information.		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.19.3	<p>sound exposure, E</p> <p>A-weighted sound pressure (p) squared and integrated over a stated period of time, T</p> <p>Note 1 to entry: The SI unit is Pa² s.</p> $E = \int_0^T p(t)^2 dt$		N/A
3.3.19.4	<p>sound exposure level, SEL</p> <p>logarithmic measure of sound exposure relative to a reference value, E_0, typically the 1 kHz threshold of hearing in humans.</p> <p>Note 1 to entry: SEL is measured as A-weighted levels in dB.</p> $SEL = 10 \lg \left(\frac{E}{E_0} \right) \text{ dB}$ <p>Note 2 to entry: See B.4 of EN 50332-3:2017 for additional information.</p>		N/A
3.3.19.5	<p>digital signal level relative to full scale, dBFS</p> <p>levels reported in dBFS are always r.m.s. Full scale level, 0 dBFS, is the level of a dc-free 997-Hz sine wave whose undithered positive peak value is positive digital full scale, leaving the code corresponding to negative digital full scale unused</p> <p>Note 1 to entry: It is invalid to use dBFS for non-r.m.s. levels. Because the definition of full scale is based on a sine wave, the level of signals with a crest factor lower than that of a sine wave may exceed 0 dBFS. In particular, square wave signals may reach +3,01 dBFS.</p>		N/A
2	Modification to Clause 10		N/A
10.6	<p>Safeguards against acoustic energy sources</p> <p>Replace 10.6 of IEC 62368-1 with the following:</p>		N/A
10.6.1.1	<p>Introduction</p> <p>Safeguard requirements for protection against long-term exposure to excessive sound pressure levels from personal music players closely coupled to the ear are specified below.</p> <p>Requirements</p>		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>for earphones and headphones intended for use with personal music players are also covered. A personal music player is a portable equipment intended for use by an ordinary person, that:</p> <ul style="list-style-type: none"> – is designed to allow the user to listen to audio or audiovisual content / material; and – uses a listening device, such as headphones or earphones that can be worn in or on or around the ears; and – has a player that can be body worn (of a size suitable to be carried in a clothing pocket) and is intended for the user to walk around with while in continuous use (for example, on a street, in a subway, at an airport, etc.). <p>EXAMPLES Portable CD players, MP3 audio players, mobile phones with MP3 type features, PDAs or similar equipment.</p> <p>Personal music players shall comply with the requirements of either 10.6.2 or 10.6.3.</p> <p>NOTE 1 Protection against acoustic energy sources from telecom applications is referenced to ITU-T P.360.</p> <p>NOTE 2 It is the intention of the Committee to allow the alternative methods for now, but to only use the dose measurement method as given in 10.6.5 in future. Therefore, manufacturers are encouraged to implement 10.6.5 as soon as possible.</p> <p>Listening devices sold separately shall comply with the requirements of 10.6.6. These requirements are valid for music or video mode only. The requirements do not apply to:</p> <ul style="list-style-type: none"> – professional equipment; <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> <ul style="list-style-type: none"> – hearing aid equipment and other devices for assistive listening; – the following type of analogue personal music players: <ul style="list-style-type: none"> • long distance radio receiver (for example, a multiband radio receiver or world band radio receiver, an AM radio receiver), and • cassette player/recorder; <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 it will no longer exist. This exemption will</p>		

Appendix: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>not be extended to other technologies.</p> <p>– a player while connected to an external amplifier that does not allow the user to walk around while in use.</p> <p>For equipment that is clearly designed or intended primarily for use by children, the limits of the relevant toy standards may apply.</p> <p>The relevant requirements are given in EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>		
10.6.1.2	<p>Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</p> <p>The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body mounted devices, attention is drawn to EN 50360 and EN 50566.</p>		N/A
10.6.2	<p>Classification of devices without the capacity to estimate sound dose</p>		N/A
10.6.2.1	<p>General</p> <p>This standard is transitioning from short-term based (30 s) requirements to long-term based (40 hour) requirements. These clauses remain in effect only for devices that do not comply with sound dose estimation as stipulated in EN 50332-3.</p> <p>For classifying the acoustic output $L_{Aeq,T}$, measurements are based on the A-weighted equivalent sound pressure level over a 30 s period.</p> <p>For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, measurements may be done over the duration of the complete</p>		N/A


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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>song. In this case, T becomes the duration of the song.</p> <p>NOTE Classical music, acoustic music and broadcast typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the content and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song does not exceed the required limit.</p> <p>For example, if the player is set with the programme simulation noise to 85 dB, but the average music level of the song is only 65 dB, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dB.</p>		
10.6.2.2	<p>RS1 limits (to be superseded, see 10.6.3.2)</p> <p>RS1 is a class 1 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 85 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 27 mV (analogue interface) or -25 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1. – The RS1 limits will be updated for all devices as per 10.6.3.2. 		N/A
10.6.2.3	<p>RS2 limits (to be superseded, see 10.6.3.3)</p> <p>RS2 is a class 2 acoustic energy source that does not exceed the following:</p> <ul style="list-style-type: none"> – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or when the combination of player and listening device is known by other means such as setting or automatic 130 detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 100 dB(A) when playing the fixed “programme simulation noise” as described in EN 50332-1. 		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 150 mV (analogue interface) or -10 dBFS (digital interface) when playing the fixed “programme simulation noise” as described in EN 50332-1.		
10.6.2.4	RS3 limits RS3 is a class 3 acoustic energy source that exceeds RS2 limits.		N/A
10.6.3	Classification of devices (new)		N/A
10.6.3.1	General Previous limits (10.6.2) created abundant false negative and false positive PMP sound level warnings. New limits, compliant with The Commission Decision of 23 June 2009, are given below.		N/A
10.6.3.2	RS1 limits (new) RS1 is a class 1 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and listening device is known by other means such as setting or automatic detection, the $L_{Aeq,T}$ acoustic output shall be ≤ 80 dB when playing the fixed “programme simulation noise” described in EN 50332-1. – for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output voltage shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed “programme simulation noise” described in EN 50332-1.		N/A
10.6.3.3	RS2 limits (new) RS2 is a class 2 acoustic energy source that does not exceed the following: – for equipment provided as a package (player with its listening device), and with a proprietary connector between the player and its listening device, or where the combination of player and		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>listening device is known by other means such as setting or automatic detection, the weekly sound exposure level, as described in EN 50332-3, shall be ≤ 80 dB when playing the fixed "programme simulation noise" described in EN 50332-1.</p> <p>– for equipment provided with a standardized connector (for example, a 3,5 phone jack) that allows connection to a listening device for general use, the unweighted r.m.s. output level, integrated over one week, as described in EN50332-3, shall be ≤ 15 mV (analogue interface) or -30 dBFS (digital interface) when playing the fixed "programme simulation noise" described in EN 50332-1.</p>		
10.6.4	Requirements for maximum sound exposure		N/A
10.6.4.1	<p>Measurement methods</p> <p>All volume controls shall be turned to maximum during tests.</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p>		N/A
10.6.4.2	<p>Protection of persons</p> <p>Except as given below, protection requirements for parts accessible to ordinary persons, instructed persons and skilled persons are given in 4.3.</p> <p>NOTE 1 Volume control is not considered a safeguard.</p> <p>Between RS2 and an ordinary person, the basic safeguard may be replaced by an instructional safeguard in accordance with Clause F.5, except that the instructional safeguard shall be placed on the equipment, or on the packaging, or in the instruction manual. Alternatively, the instructional safeguard may be given through the equipment display during use.</p> <p>The elements of the instructional safeguard shall be as follows:</p> <p>– element 1a: the symbol , IEC 60417-6044 (2011-01)</p> <p>– element 2: "High sound pressure" or equivalent wording</p> <p>– element 3: "Hearing damage risk" or equivalent</p>		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>wording – element 4: “Do not listen at high volume levels for long periods.” or equivalent wording</p> <p>An equipment safeguard shall prevent exposure of an ordinary person to an RS2 source without intentional physical action from the ordinary person and shall automatically return to an output level not exceeding what is specified for an RS1 source when the power is switched off.</p> <p>The equipment shall provide a means to actively inform the user of the increased sound level when the equipment is operated with an output exceeding RS1. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an output exceeding RS1. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time.</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always needed.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent of how often and how long the personal music player has been switched off.</p> <p>A skilled person shall not be unintentionally exposed to RS3.</p>		
10.6.5	Requirements for dose-based systems		N/A
10.6.5.1	General requirements		N/A
	<p>Personal music players shall give the warnings as provided below when tested according to EN 50332-3, using the limits from this clause.</p> <p>The manufacturer may offer optional settings to allow the users to modify when and how they wish to receive the notifications and warnings to promote a better user experience without defeating the safeguards. This allows the users to be informed in a method that best meets their physical capabilities and device usage needs. If such optional settings are offered, an administrator (for example, parental restrictions, business/educational administrators, etc.) shall be able to lock any optional settings into a specific configuration.</p>		

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	The personal music player shall be supplied with easy to understand explanation to the user of the dose management system, the risks involved, and how to use the system safely. The user shall be made aware that other sources may significantly contribute to their sound exposure, for example work, transportation, concerts, clubs, cinema, car races, etc.		
10.6.5.2	<p>Dose-based warning and requirements</p> <p>When a dose of 100 % CSD is reached, and at least at every 100 % further increase of CSD, the device shall warn the user and require an acknowledgement. In case the user does not acknowledge, the output level shall automatically decrease to compliance with class RS1.</p> <p>The warning shall at least clearly indicate that listening above 100 % CSD leads to the risk of hearing damage or loss.</p>		N/A
10.6.5.3	<p>Exposure-based requirements</p> <p>With only dose-based requirements, cause and effect could be far separated in time, defying the purpose of educating users about safe listening practice. In addition to dose-based requirements, a PMP shall therefore also put a limit to the short-term sound level a user can listen at.</p> <p>The exposure-based limiter (EL) shall automatically reduce the sound level not to exceed 100 dB(A) or 150 mV integrated over the past 180 s, based on methodology defined in EN 50332-3.</p> <p>The EL settling time (time from starting level reduction to reaching target output) shall be 10 s or faster.</p> <p>Test of EL functionality is conducted according to EN 50332-3, using the limits from this clause. For equipment provided as a package (player with its listening device), the level integrated over 180 s shall be 100 dB or lower. For equipment provided with a standardized connector, the unweighted level integrated over 180 s shall be no more than 150 mV for an analogue interface and no more than -10 dBFS for a digital interface.</p> <p>NOTE In case the source is known not to be music (or test signal), the EL may be disabled.</p>		N/A

Appendix: EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	<p>Corded listening devices with analogue input</p> <p>With 94 dB L_{Aeq} acoustic pressure output of the listening device, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the input voltage of the listening device when playing the fixed “programme simulation noise” as described in EN 50332-1 shall be ≥ 75 mV.</p> <p>NOTE The values of 94 dB and 75 mV correspond with 85 dB and 27 mV or 100 dB and 150 mV.</p>		N/A
10.6.6.2	<p>Corded listening devices with digital input</p> <p>With any playing device playing the fixed “programme simulation noise” described in EN 50332-1, and with the volume and sound settings in the listening device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output, the $L_{Aeq,\tau}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS.</p>		N/A
10.6.6.3	<p>Cordless listening devices</p> <p>In cordless mode,</p> <ul style="list-style-type: none"> – with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and – respecting the cordless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and – with volume and sound settings in the receiving device (for example, built-in volume level control, additional sound features like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the $L_{Aeq,\tau}$ acoustic output of the listening device shall be ≤ 100 dB with an input signal of -10 dBFS. 		N/A
10.6.6.4	<p>Measurement method</p> <p><i>Measurements shall be made in accordance with EN 50332-2 as applicable.</i></p>		N/A
3	Modification to the whole document		P

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IEC62368_1C- ATTACHMENT																																																																		
Clause	Requirement + Test				Result - Remark	Verdict																																																												
	<p>Delete all the “country” notes in the reference document according to the following list:</p> <table border="1"> <tr> <td>0.2.1</td> <td>Note 1 and 2</td> <td>1</td> <td>Note 4 and 5</td> <td>3.3.8.1</td> <td>Note 2</td> </tr> <tr> <td>3.3.8.3</td> <td>Note 1</td> <td>4.1.15</td> <td>Note</td> <td>4.7.3</td> <td>Note 1 and 2</td> </tr> <tr> <td>5.2.2.2</td> <td>Note</td> <td>5.4.2.3.2.2 Table 12</td> <td>Note c</td> <td>5.4.2.3.2.4</td> <td>Note 1 and 3</td> </tr> <tr> <td>5.4.2.3.2.4 Table 13</td> <td>Note 2</td> <td>5.4.2.5</td> <td>Note 2</td> <td>5.4.5.1</td> <td>Note</td> </tr> <tr> <td>5.4.10.2.1</td> <td>Note</td> <td>5.4.10.2.2</td> <td>Note</td> <td>5.4.10.2.3</td> <td>Note</td> </tr> <tr> <td>5.5.2.1</td> <td>Note</td> <td>5.5.6</td> <td>Note</td> <td>5.6.4.2.1</td> <td>Note 2 and 3 and 4</td> </tr> <tr> <td>5.6.8</td> <td>Note 2</td> <td>5.7.6</td> <td>Note</td> <td>5.7.7.1</td> <td>Note 1 and Note 2</td> </tr> <tr> <td>8.5.4.2.3</td> <td>Note</td> <td>10.2.1 Table 39</td> <td>Note 3 and 4 and 5</td> <td>10.5.3</td> <td>Note 2</td> </tr> <tr> <td>10.6.4</td> <td>Note 3</td> <td>F.3.3.6</td> <td>Note 3</td> <td>Y.4.1</td> <td>Note</td> </tr> <tr> <td>Y.4.5</td> <td>Note</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					0.2.1	Note 1 and 2	1	Note 4 and 5	3.3.8.1	Note 2	3.3.8.3	Note 1	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 12	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.3.2.4 Table 13	Note 2	5.4.2.5	Note 2	5.4.5.1	Note	5.4.10.2.1	Note	5.4.10.2.2	Note	5.4.10.2.3	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3 and 4	5.6.8	Note 2	5.7.6	Note	5.7.7.1	Note 1 and Note 2	8.5.4.2.3	Note	10.2.1 Table 39	Note 3 and 4 and 5	10.5.3	Note 2	10.6.4	Note 3	F.3.3.6	Note 3	Y.4.1	Note	Y.4.5	Note					P
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Y.4.5	Note																																																																	
4	Modification to Clause 1					N/A																																																												
1	<p>Add the following note:</p> <p><i>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.</i></p>					N/A																																																												
5	Modification to 4.Z1					N/A																																																												

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p>Add the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. mains, 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):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>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> <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.</p> <p>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.</p>		N/A
6	Modification to 5.4.2.3.2.4		N/A
5.4.2.3.2.4	<p>Add the following to the end of this subclause:</p> <p>The requirement for interconnection with external circuit is in addition given in EN 50491-3:2009.</p>		N/A
7	Modification to 10.2.1		N/A
10.2.1	<p>Add the following to ^{c)} and ^{d)} in table 39:</p> <p>For additional requirements, see 10.5.1.</p>		N/A
8	Modification to 10.5.1		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p>Add the following after the first paragraph:</p> <p>For RS 1 compliance is checked by measurement under the following conditions:</p> <p>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.</p> <p>Moreover, the measurement shall be made under fault conditions causing an increase of the high voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</p> <p>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>		N/A
9	Modification to G.7.1		N/A
G.7.1	<p>Add the following note:</p> <p>NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>		N/A
10	Modification to Bibliography		N/A

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IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>Add the following notes for the standards indicated:</p> <p>IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.</p>		N/A
11	ADDITION OF ANNEXES		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		P
4.1.15	<p>Denmark, Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added: Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Denmark: "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: "Apparatet må tilkoples jordet stikkontakt" In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	See the marking plate	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex</p>		N/A
5.2.2.2	<p>Denmark</p> <p>After the 2nd paragraph add the following:</p> <p>A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>	No high touch current measured.	N/A
5.4.11.1 and Annex G	<p>Finland and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>For separation of the telecommunication network from earth the following is applicable:</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"> • two layers of thin sheet material, each of which shall pass the electric strength test below, or • one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> • passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), <p>and</p> <ul style="list-style-type: none"> • is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5 		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>kV.</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> 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 5.4.11; the additional testing shall be performed on all the test specimens as described in EN 60384-14; <p>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.</p>		
5.5.2.1	<p>Norway</p> <p>After the 3rd paragraph the following is added:</p> <p>Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>		P
5.5.6	<p>Finland, Norway and Sweden</p> <p>To the end of the subclause the following is added:</p> <p>Resistors used as basic safeguard or bridging basic insulation in class I pluggable equipment type A shall comply with G.10.1 and the test of G.10.2.</p>		N/A
5.6.1	<p>Denmark</p> <p>Add to the end of the subclause</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p><i>Justification:</i></p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.4.2.1	<p>Ireland and United Kingdom</p> <p>After the indent for pluggable equipment type A, the following is added: – the protective current rating is taken to be 13 A, this being the largest rating of fuse used in the mains plug.</p>		N/A
5.6.4.2.1	<p>France</p> <p>After the indent for pluggable equipment type A, the following is added: – in certain cases, the protective current rating of the circuit supplied from the mains is taken as 20 A instead of 16 A.</p>		N/A
5.6.5.1	<p>To the second paragraph the following is added:</p> <p>The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm² to 1,5 mm² in cross-sectional area.</p>		N/A
5.6.8	<p>Norway</p> <p>To the end of the subclause the following is added: Equipment connected with an earthed mains plug is classified as class I equipment. See the Norway marking requirement in 4.1.15. The symbol IEC 60417-6092, as specified in F.3.6.2, is accepted.</p>		N/A
5.7.6	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>		N/A
5.7.6.2	<p>Denmark</p> <p>To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>		N/A
5.7.7.1	<p>Norway and Sweden</p> <p>To the end of the subclause the following is added: The screen of the television 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 needs to be isolated from the screen of</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>a cable distribution system.</p> <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 a retailer, for example.</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:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has 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 CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish: ”Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”</p>		

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.4.2.3	<p>United Kingdom</p> <p>Add the following after the 2nd dash bullet in 3rd paragraph:</p> <p>An emergency stop system complying with the requirements of IEC 60204-1 and ISO 13850 is required where there is a risk of personal injury.</p>		N/A
B.3.1 and B.4	<p>Ireland and United Kingdom</p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of direct plug-in equipment, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the direct plug-in equipment, until the requirements of Annexes B.3.1 and B.4 are met</p>		N/A
G.4.2	<p>Denmark</p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>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 polyphase 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>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	<p>compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>		
G.4.2	<p>United Kingdom</p> <p>To the end of the subclause the following is added:</p> <p>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.</p>		N/A
G.7.1	<p>United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc. (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations.</p> <p>NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>		N/A
G.7.1	<p>Ireland</p> <p>To the first paragraph the following is added:</p> <p>Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard</p>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.2	<p>Ireland and United Kingdom</p> <p>To the first paragraph the following is added:</p> <p>A power supply cord with a conductor of 1,25 mm² is allowed for equipment which is rated over 10 A and up to and including 13 A.</p>		N/A
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		
10.5.2	<p>Germany</p> <p>The following requirement applies:</p> <p>For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p>NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de</p>		N/A
ZD	IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS (EN)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H
Cords insulated and sheathed with halogen-free thermoplastic compounds		
Light halogen-free thermoplastic insulated and sheathed flexible cords		H03Z1Z1-F H03Z1Z1H2-F
Ordinary halogen-free thermoplastic insulated and sheathed flexible cords		H05Z1Z1-F H05Z1Z1H2-F

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 3RD ED. U.S.A. AND CANADA NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – PART 1: SAFETY REQUIREMENTS)			
Differences according to : CSA/UL 62368-1:2019			
Attachment Form No. : US_CA_ND_IEC62368_1C			
Attachment Originator : UL(US)			
Master Attachment : Date 2020-02-06			
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IEC 62368-1 - US and Canadian National Differences Special National Conditions based on Regulations and Other National Differences			
1 (1DV.1) (1.3)	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.		P
1 (1DV.2.1)	This standard includes additional requirements for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities. See Annex DVB.		N/A
1 (1DV.2.2)	This standard includes additional requirements for equipment intended for mounting under cabinets. See Annex DVC.		N/A
1 (1DV.2.3)	IEC 62368-3 clause 5 for DC power transfer at ES1 or ES2 voltage levels is considered informative. IEC 62368-3 clause 6 for remote power feeding telecommunication (RFT) circuits is considered normative (see ITU K.50). Alternatively, equipment with RFT circuits are given in either UL 2391 or CSA/UL 60950-21. RFT-C circuits are not permitted unless the RFT-C circuit complies with RFT-V limits (\leq 200V per conductor to earth).		N/A
1 (1DV.3)	For protection against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72 for additional requirements.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1 (DV.5)	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.		P
4.1 (4.1.17)	<i>For lengths exceeding 3.05 m, external interconnecting cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.</i>		N/A
	<i>For lengths 3.05 m or less, external interconnecting cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.</i>		P
4.6 (4.6.2)	Wire-wrap terminals have special construction and performance requirements.		N/A
4.8 (4.8.3, 4.8.4.5, 4.8.5)	Coin / button cell batteries have modified special construction and performance requirements.		N/A
5.4.2.3.2 (5.4.2.3.2.1)	<i>Surge Arrestors and Transient Voltage Surge Suppressors installed external to the equipment are required to comply with the appropriate NEC and CEC requirements.</i>		N/A
5.5.9	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons are required to be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices are required to comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.7, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.8 (5.7.8.1)	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.		N/A
6.5.1	PS3 wiring outside a fire enclosure is required to comply with single fault testing in B.4, or be current limited per one of the permitted methods.		N/A
Annex F (F.3.3.9)	Output terminals provided for supply of other equipment, except mains supply, are required to be marked with a maximum rating or reference to equipment permitted to be connected.	See marking plate	P
Annex F (F.3.7)	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94.1 or 94.2.		N/A
Annex G (G.7)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.		N/A
	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.		N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.		N/A
	Power supply cords for outdoor equipment are required to be suitable outdoor use type as required by Section 400.4 of the NEC and Rule 4-012 of the CEC, i.e., marked "W."		N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V _{peak} or 60 V _{d.c.} , the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex Q (Q.3)	Equipment with paired conductor and/or coax communications cables/wiring connected to building wiring are required to have special voltage, current, power and marking requirements.		N/A
Annex DVA (1)	Equipment that is designed such that it may be powered from a separate electrical service, is required to meet applicable requirements for service equipment for control and protection of services and their installation and complies with Article 230 of the National Electrical Code (NEC), NFPA 70 and Section 6 of the Canadian Electrical Code, Part I, CSA C22.1.		N/A
	Equipment intended for use in spaces used for environmental air (plenums) are subjected to special flammability requirements for heat and visible smoke release.		N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m ³ (27 cu ft) are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.		N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. and Canadian Regulations.		N/A
	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
	Storage batteries and battery management equipment, other than associated with lead-acid batteries, and including battery backup systems that are not an integral part of stationary AV and ICT equipment, such as provided in separate cabinets, are required to be certified (listed) to the appropriate standard(s) for such storage batteries and equipment.		N/A
Annex DVA (5.6)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.		P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m ² (10 sq ft) or a single dimension greater than 1.8 m (6 ft) are required to have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a minimum flammability classification of V-1.		N/A
Annex DVA (10.3)	Equipment with lasers is required to meet the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (10.5)	Equipment that produces ionizing radiation is required to comply with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).		N/A
Annex DVA (F.3.3.4)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or that are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."		N/A
Annex DVA (F.3.3.6)	Equipment identified for ITE (computer) room installation is required to be marked with the rated current.		N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.		N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.		N/A
	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.		N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-400 and 10-612.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
Annex DVA (G.4.3)	Interconnection of units by conductors supplied by a limited power source, or a Class 2 circuit defined in the NEC/CEC may have field wiring connections other than specified in DVH.3, such as wire-wrap and crimp-on types, if the limited power source and Class 2 circuits are separated from all other circuits by barriers, routing or fixing.		N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.		N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
Annex DVA (G.7)	Flexible cords used outdoors are required to have the suffix "W" marked on the flexible cord.		N/A
Annex DVA (M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the ITE room remote power-off circuit.		N/A
Annex DVA (Q)	If applicable per NEC 725.121(C), some limited power sources supplied from AV/ICT equipment are required to have a label indicating the maximum voltage and maximum current, or maximum voltage and nominal current output for each connection point. Where multiple connection points have the same rating, a single label is permitted to be used.		N/A
	Wiring terminals intended to supply Class 2 outputs in accordance with the NEC or CEC Part 1 are required to be marked with the voltage rating and "Class 2" or equivalent. The marking is located adjacent to the terminals and visible during wiring.		N/A
	Applicable parts of Chapter 8 of the NEC, and Rules 54 and 60 of the CEC, may be applicable to ITE installed outdoors with connections to communication systems.		N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.		N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These equipment and components include: appliance couplers, attachment plugs, battery backup systems, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, modular data centers, power supply cords, some power distribution equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.		N/A
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.		N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are required to be in accordance with the NEC/CEC.		N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and be specially marked when specified.		N/A
	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm ²).		N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.		N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, is required to comply with special earthing, wiring, marking and installation instruction requirements.		N/A
Annex DVI (6.7)	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.		N/A

Appendix: U.S.A. AND CANADA NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex DVJ (10.6.1)	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A

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Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT			
IEC 62368-1 (AUSTRALIA / NEW ZEALAND) NATIONAL DIFFERENCES (AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT)			
Differences according to..... AS/NZS 62368.1:2018			
Attachment Form No. AU_NZ_ND_IEC62368_1B			
Attachment Originator JAS-ANZ			
Master Attachment 2018-02			
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	National Differences		
Appendix ZZ	Variations to IEC 62368-1:2014 (ED. 2.0) for Australia and New Zealand		P
ZZ1 Scope	This Appendix lists the normative variations to IEC 62368-1:2014 (ED. 2.0)		P
ZZ2 Variations	The following modifications are required for Australian/New Zealand conditions:		P
2	Add the following to the list of normative references: The following normative documents are referenced in Appendix ZZ: -AS/NZS 3112, <i>Approval and test specification—Plugs and socket-outlets</i> -AS/NZS 3123, <i>Approval and test specification—Plugs, socket-outlets and couplers for general industrial application</i> -AS/NZS 3191, <i>Electric flexible cords</i> -AS/NZS 60065, <i>Audio, video and similar electronic apparatus—Safety requirements (IEC 60065:2015 (ED.8.0) MOD)</i> -AS/NZS 60320.1, <i>Appliance couplers for household and similar general purposes, Part 1: General requirements (IEC 60320-1, Ed.2.1 (2007) MOD)</i> -AS/NZS 60320.2.2, <i>Appliance couplers for household and similar general purposes Part 2.2: Interconnection couplers for household and similar equipment (IEC 60320-2-2, Ed.2.0 (1998) MOD)</i>		P

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>-AS/NZS 60695.2.11, <i>Fire hazard testing, Part 2.11: Glowing/hot wire based test methods—Glow-wire flammability test method for end-products</i></p> <p>-AS/NZS 60695.11.5, <i>Fire hazard testing, Part 11.5: Test flames—Needle-flame test method—Apparatus, confirmatory test arrangement and guidance</i></p> <p>-AS/NZS 60695.11.10, <i>Fire hazard testing, Part 11.10: Test flames—50 W horizontal and vertical flame test methods</i></p> <p>-AS/NZS 60884.1, <i>Plugs and socket-outlets for household and similar purposes, Part 1: General requirements</i></p> <p>-AS/NZS 60950.1:2015, <i>Information technology equipment—Safety, Part 1: General requirements (IEC 60950-1, Ed.2.2 (2013), MOD)</i></p> <p>IEC 61032:1997, <i>Protection of persons and equipment by enclosures—Probes for verification</i></p> <p>-AS/NZS 61558.1:2008 (including Amendment 2:2015), <i>Safety of Power Transformers, Power Supplies, Reactors and Similar Products, Part 1: General requirements and tests (IEC 61558-1 Ed 2.1, MOD)</i></p> <p>-AS/NZS 61558.2.16, <i>Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V, Part 2.16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.</i></p>		
4.1.1	<p>Application of requirements and acceptance of materials, components and subassemblies</p> <p>8 Replace the text 'IEC 60950-1' with 'AS/NZS 60950.1:2015'.</p> <p>2 Replace the text 'IEC 60065' with 'AS/NZS 60065'.</p>		P
4.7	Equipment for direct insertion into mains socket-outlets		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.2	<p>Requirements Delete the text of the second paragraph and <i>replace</i> with the following: Equipment with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112 shall comply with the requirements in AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.</p>	Should be evaluated during national approval	N/A
4.7.3	<p>Compliance Criteria Delete the first paragraph and Note 1 and Note 2 and <i>replace</i> with the following: <i>Compliance is checked by inspection and, if necessary, by the tests in AS/NZS 3112.</i></p>		N/A
4.8	<p>Delete existing clause title and <i>replace</i> with the following: 4.8 Products containing coin/button cell batteries</p>		N/A
4.8.1	<p>General 8 Second dashed point, <i>delete</i> the text and <i>replace</i> with the following: – include coin/button cell batteries with a diameter of 32 mm or less. 2 After the second dashed point, <i>insert</i> the following Note: NOTE 1: Batteries are specified in IEC 60086-2. 3 After the third dashed point, <i>renumber</i> the existing Note as 'NOTE 2'. 4 Fifth dashed point, <i>delete</i> the word 'lithium'.</p>		N/A
4.8.2	<p>Instructional Safeguard First line, <i>delete</i> the word 'lithium'.</p>		N/A
4.8.3	<p>Construction First line, after the word 'Equipment' <i>insert</i> the words 'containing one or more coin/button batteries and'</p>		N/A
4.8.5	<p>Compliance criteria Delete the first paragraph and <i>replace</i> with the following: <i>Compliance is checked by applying a force of 30 N +/- 1 N for 10 s to the battery compartment door/cover by a rigid test finger according to test probe 11 of IEC 61032:1997 at the most unfavourable place and in the most unfavourable direction. The force shall be applied in one direction at a time.</i></p>		N/A
5.4.10.2	<p>Test methods</p>		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT				
Clause	Requirement + Test	Result - Remark		Verdict
5.4.10.2 .1	General <i>Delete</i> the first paragraph and <i>replace</i> with the following: In Australia only, the separation is checked by the test of both Clause 5.4.10.2.2 and Clause 5.4.10.2.3. In New Zealand, the separation is checked by the test of either Clause 5.4.10.2.2 or Clause 5.4.10.2.3.			N/A
Table 29	<i>Replace</i> the table with the following:			N/A
Parts	Impulse test		Steady state test	
	New Zealand	Australia	New Zealand	Australia
Parts indicated in Clause 5.4.10.1 a) ^a	2.5 kV 10/700 μs	7.0 kV for hand-held telephones and headsets, 2.5 kV for other equipment. 10/700 μs	1.5 kV	3 kV
Parts indicated in Clause 5.4.10.1 b) and c) ^b	1.5 kV 10/700 μs ^c		1.0 kV	1.5 kV
^a Surge suppressors shall not be removed. ^b Surge suppressors may be removed, provided that such devices pass the impulse test of Clause 5.4.10.2.2 when tested as components outside the equipment. ^c During this test, it is allowed for a surge suppressor to operate and for a sparkover to occur in a GDT.				
5.4.10.2 .2	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, the 7 kV impulse simulates lightning surges on typical rural and semi-rural network lines. NOTE 202 For Australia, the value of 2.5 kV for Clause 5.4.10.1 a) was chosen to ensure the adequacy of the insulation concerned and does not necessarily simulate likely overvoltages.			N/A
5.4.10.2 .3	After the first paragraph, <i>insert</i> new Notes 201 and 202 as follows: NOTE 201 For Australia, where there are capacitors across the insulation under test, it is recommended that d.c. test voltages are used. NOTE 202 The 3 kV and 1.5 kV values for Australia have been determined considering the low frequency induced voltages from the power supply distribution system.			N/A
6	Electrically-caused fire			N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1	<p>General</p> <p>After the first paragraph, <i>insert</i> the following new paragraph: Alternatively, the requirements of Clauses 6.2 to 6.5.2 are considered to be fulfilled if the equipment complies with the requirements of Clause 6.202</p>		N/A
6.6	<p>After Clause 6.6, <i>add</i> the new Clauses 6.201 and 6.202 as follows:</p> <p>6.201 External power supplies, docking stations and other similar devices and 6.202 Resistance to fire—Alternative tests (see special national conditions)</p>		N/A
8.5.4	<p>Special categories of equipment comprising moving parts</p>		N/A
8.5.4.1	<p>Large data storage equipment</p> <p>In the first dashed row and the second dashed rows <i>replace</i> 'IEC 60950-1:2005' with 'AS/NZS 60950.1:2015'.</p>		N/A
8.6	<p>Stability of equipment</p>		N/A
8.6.1 and Table 36	<p>Requirements</p> <p>8. Table 36, <i>insert</i> Footnote c at the end of the 'Glass slide' heading, and <i>add</i> a new Footnote c after the text of Footnote b in the last row of Table 36 as follows: ^c The glass slide test is not applicable to floor standing equipment, even though the equipment may have controls or a display.</p> <p>2. Table 36, fifth row, <i>insert</i> ²⁰¹ at the end of 'No stability requirements'</p> <p>3. Table 36, ninth row, <i>insert</i> ²⁰¹ at the end of 'No stability requirements'</p> <p>4. Table 36, <i>add</i> the following new footnote: 201 MS2 and MS3 television sets and display devices, designed only for fixing to a wall, ceiling or equipment rack, are not subjected to stability requirements only if the instructional safeguard of Clause 8.6.1.201 is provided. Otherwise, the glass slide requirements of Clause 8.6.4 and horizontal force requirements of Clause 8.6.5 apply.</p> <p>8. Second paragraph beneath Table 36, <i>delete</i> the words 'MS2 and MS3 television sets' and <i>replace</i> with 'MS2 and MS3 television sets and display devices'</p>		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.1	After Clause 8.6.1 <i>add</i> the following new clauses: 8.6.1.201 Instructional safeguard for fixed-mount television sets (see special national conditions)		N/A
Annex F Paragraph F.3.5.1	Mains appliance outlet and socket-outlet markings <i>Replace</i> 'IEC 60320-2-2' with 'AS/NZS 60320.2.2'.		N/A
Annex G Paragraph G.4.2	Mains connectors 8 In the second line <i>insert</i> 'or AS/NZS 3123' after 'IEC 60906-1'. 2 In the second line <i>insert</i> 'or AS/NZS 60320 series' after 'IEC 60320 series' 3 <i>Add</i> the following new paragraph: 10 A or 15 A 250 V flat pin plugs for the connection of equipment to mains-powered socket-outlets for household or similar general use shall comply with AS/NZS 3112 or AS/NZS 60884.1.		N/A
Paragraph G.5.3.1	Transformers, General 8 In the third dashed point <i>replace</i> 'IEC 61558-1 and the relevant parts of IEC 61558-2' with 'AS/NZS 61558-1 and the relevant parts of AS/NZS 61558.2' 2 In the fourth dashed point <i>replace</i> 'IEC 61558-2-16' with 'AS/NZS 61558.2.16'.		N/A
Paragraph G.7.1	Mains supply cords, General In the fourth dashed paragraph, <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Table G.5	<p>Sizes of conductors</p> <p>8 In the second row, first column, <i>delete</i> '6' and <i>replace</i> with '7.5'</p> <p>2 In the second row, second column, <i>delete</i> '0,75' and <i>replace</i> with '0.75^b'</p> <p>3 <i>Delete</i> Note 1.</p> <p>4 <i>Replace</i> 'NOTE 2' with 'NOTE:'.</p> <p>5 <i>Delete</i> the text of 'Footnote b' and <i>replace</i> with the following: ^bThis nominal cross-sectional area is only allowed for Class II appliances if the length of the power supply cord, measured between the point where the cord, or cord guard, enters the appliance, and the entry to the plug does not exceed 2 m (0.5 mm² three-core supply flexible cords are not permitted; see AS/NZS 3191).</p> <p>6 In Footnote <i>c</i> <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'</p> <p>7 In Footnote <i>d</i> <i>replace</i> 'IEC 60320-1' with 'AS/NZS 60320.1'</p>		N/A
Annex M Paragraph M.3.2	<p>Protection circuits for batteries provided within the equipment, Test method</p> <p>After the first dashed point <i>add</i> the following Note: NOTE 201: In cases where the voltage source is provided by power from an unassociated power source, consideration should be given to the effects of possible single fault conditions in the unassociated equipment. If the power source is unknown then it should be assumed that the maximum limit of SELV may be applied to the source input under assumed single fault conditions in the source when assessing the charging circuit in the equipment under test.</p>		N/A
	Special national conditions (if any)		P

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.201	<p>External power supplies, docking stations and other similar devices</p> <p>For external power supplies, docking stations and other similar devices, during and after abnormal operating conditions and during single fault conditions the output voltage—</p> <ul style="list-style-type: none"> – at all ES1 outlets or connectors shall not increase by more than 10% of its rated output voltage under normal operating condition; and – of a USB outlet or connector shall not increase by more than 3 V or 10% of its rated output voltage under normal operating conditions, whichever is higher. <p>For equipment with multiple rated output voltages, the requirements apply with the equipment configured for each rated output voltage in turn.</p> <p>NOTE: This is intended to reduce the possibility of battery fire or explosion in attached equipment or accessories when charging secondary lithium batteries.</p> <p><i>Compliance shall be checked by measurement, taking into account the abnormal operating conditions of Annex B.3 and the simulated single-fault conditions of Annex B.4</i></p>		P
6.202	<p>Resistance to fire—Alternative tests</p>		N/A
6.202.1	<p>General</p> <p>Parts of non-metallic material shall be resistant to ignition and spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames from inside the equipment, or the following:</p> <p>8) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.</p> <p>b) The following parts which would contribute negligible fuel to a fire:</p> <ul style="list-style-type: none"> – small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; – small electrical components, such as capacitors with a volume not exceeding 1 750 mm³, integrated circuits, transistors and 		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>optocoupler packages, if these components are mounted on material of flammability category V-1, or better, according to AS/NZS 60695.11.10.</p> <p>NOTE: In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating the fire from one part to another.</p>		
	<p><i>Compliance shall be checked by the tests of Clauses 6.202.2, 6.202.3 and 6.202.4.</i></p> <p>For the base material of printed boards, compliance shall be checked by the test of Clause 6.202.5.</p> <p>The tests shall be carried out on parts of non-metallic material which have been removed from the equipment. When the glow-wire test is carried out, the parts shall be placed in the same orientation as they would be in normal use.</p> <p>These tests are not carried out on internal wiring.</p>		N/A
6.202.2	<p>Testing of non-metallic materials</p> <p>Parts of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.</p> <p>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall be not carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the relevant part is not thinner than the sample tested.</p>		N/A
6.202.3	<p>Testing of insulating materials</p> <p>Parts of insulating material supporting Potential Ignition Sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</p> <p>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection.</p> <p>NOTE: Contacts in components such as switch contacts are considered to be connections</p>		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	<p>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test.</p> <p>However, parts shielded by a barrier which meets the needle-flame test need not be tested</p>		N/A								
	<p>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:</p> <table border="1"> <tr> <td>Clause of AS/NZS 60695.11.5</td> <td>Change</td> </tr> <tr> <td>9 Test procedure</td> <td></td> </tr> <tr> <td>9.2 Application of needle-flame</td> <td> <p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p> <p>The duration of application of the test flame shall be 30 s.</p> </td> </tr> <tr> <td>9.3 Number of test specimens</td> <td> <p><i>Replace</i> with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</p> </td> </tr> </table>	Clause of AS/NZS 60695.11.5	Change	9 Test procedure		9.2 Application of needle-flame	<p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p> <p>The duration of application of the test flame shall be 30 s.</p>	9.3 Number of test specimens	<p><i>Replace</i> with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</p>		N/A
Clause of AS/NZS 60695.11.5	Change										
9 Test procedure											
9.2 Application of needle-flame	<p><i>Delete</i> the first and second paragraphs and <i>replace</i> with the following: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1. If possible the flame shall be applied at least 10 mm from a corner.</p> <p>The duration of application of the test flame shall be 30 s.</p>										
9.3 Number of test specimens	<p><i>Replace</i> with the following: The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall withstand the test.</p>										

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test		Verdict
	<p>11 Evaluation of test results</p>	<p><i>Replace with the following:</i> The duration of burning (tb) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</p>	
	<p>The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10, provided that the relevant part is not thinner than the sample tested.</p>		
6.202.4	<p>Testing in the event of non-extinguishing material</p> <p>If parts, other than enclosures, do not withstand the glow wire tests of Clause 6.202.3, by failure to extinguish within 30 s after the removal of the glowwire tip, the needle-flame test detailed in Clause 6.202.3 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of Clause 6.202.3. Parts shielded by a separate barrier which meets the needle-flame test need not be tested.</p> <p>NOTE 1: If the enclosure does not withstand the glow-wire test the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 2: If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the equipment, the equipment is considered to have failed to meet the requirements of Clause 6.202 without the need for consequential testing.</p> <p>NOTE 3: Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.</p>		N/A
6.202.5	<p>Testing of printed boards</p> <p>The base material of printed boards shall be</p>		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>subjected to the needle-flame test of Clause 6.202.3. The flame shall be applied to the edge of the board where the heat sink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge, consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source.</p> <p>The test is not carried out if—</p> <ul style="list-style-type: none"> – the printed board does not carry any potential ignition source; – the base material of printed boards, on which the available apparent power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or – the base material of printed boards, on which the available equipment power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. <p><i>Conformance shall be determined using the smallest thickness of the material.</i></p> <p>NOTE: Available apparent power is the maximum apparent power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the apparent power for more than 2 min when the circuit supplied is disconnected.</p>		
6.202.6	<p>For open circuit voltages greater than 4 kV Potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c.</p>		N/A

Appendix: AUSTRALIA (AU) / NEW ZEALAND (NZ) NATIONAL DIFFERENCES

IEC62368_1C- ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	under normal operating conditions shall be contained in a FIRE ENCLOSURE which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		
8.6.1.20 1	<p>8.6.1.201 Instructional safeguard for fixed-mount television sets MS2 and MS3 television sets and display devices designed only for fixed mounting to a wall of ceiling or equipment rack shall, where required in Table 36, footnote 201, have an instructional safeguard in accordance with Clause F.5 which may be on the equipment or included in the installation instructions or equivalent document accompanying the equipment. The elements of the instructional safeguard shall be as follows:</p> <ul style="list-style-type: none"> – element 1a: not available; – element 2: ‘Stability Hazard’ or equivalent wording; – element 3: ‘The television set may fall, causing serious personal injury or death’ or equivalent text; – element 4: the following or equivalent text: To prevent injury, this television set must be securely attached to the floor/wall in accordance with the installation instructions 		N/A
8.6.1.20 2	<p>Restraining device MS2 and MS3 television sets and display devices that are not solely fixed-mounted should be provided with a restraining device such as a fixing point to facilitate restraining the equipment from toppling forward. The restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Where a restraining device is provided, instructions shall be provided in the instructions for installation or instructions for use to ensure correct and safe installation.</p>		N/A

Appendix: Plug portion (UL 1310)

Equipment's combined with two-pole plug (Class II)

Supplementary tests on plug portion are according to ANSI/UL 1310

	Requirement - Test	Result-Remark (Equipment)	Verdit
1	Dimensions		P
1.1	Checked according to NEMA WD 6-2002 figure 1-15		P
1.2	Checked according to figure 7.1, 7.5, sub-clauses 7.11, 7.16 of ANSI/UL 1310		P
2	Direct Plug-In Blade Secureness Test		P
2.1	Each blade subject to pull test (89N / 2 min) and then two blade subject to pull test (89N / 2min) together. The displacement of each blade shall not exceed 2.4 mm measured 2 minute after remove the weight. (clause 43 of ANSI/UL 1310)	Displacement: 0.01 No displacement	P
3	Direct Plug-In Security of Input Contacts Test		P
3.1	Push test of each blade (133N / 1 min); (clause 44.1.2 of ANSI/UL 1310)	Blades are not loosen	P
3.2	Then the same specimen subject to push test of all blades (178N / 1 min); (clause 44.1.3 of ANSI/UL 1310) The blades shall not loosen.	Blades are not loosen	P
3.3	Folding and retracting blades subject to 6000 cycle rotating		P
3.4	After test, it shall a) Be operational b) Not expose live part c) Not influence plug and unplug to receptacle d) Comply with test of clause 43, 44.1.2, 44.1.3		P

Appendix: Plug portion (UL 1310)

	Requirement - Test	Result-Remark (Equipment)	Verdit
	e) Not alter the temperature rise of blade contact under normal operation		
4	Abuse test		P
4.1	<p>Impact on direct plug-in units Three samples are to be subjected to this test. Each unit is to be dropped (free fall) three times in succession from a height of 3 feet (914 mm) onto a hardwood surface as described in 46.2.2. Each of the drops is to result in the impact occurring at a point on the unit different from the impact points on the other drops. The blades shall not be subjected to a direct impact. After this test, each sample is complied with Hi-Pot Test. (clause 46.2 of ANSI/UL 1310)</p>		P
4.2	<p>Rod pressure on direct plug-in units Use a metal test rod has 12.7 mm in diameter in this test. Any point on user accessible part of EUT shall be subjected to a force of 89 N for 1 minute with the test rod. During this test, the shock current shall not exceed 7.07 mA_p when the voltage involved exceeds 42.4 V_p. After this test, each sample is complied with Hi-Pot Test. (clause 46.4 of ANSI/UL 1310)</p>	0.048mA _{peak} between L/N and accessible enclosure	P
4.3	<p>Resistance to crushing on direct plug-in units EUT shall withstand a steady crushing force of 334 N applied at right angles to the mounting surface for 1 minute. The enclosure is tested between two parallel, flat, maple blocks, each not less than 12.7 mm thick. One block is to contain slots into which the blades of the device are to be fully inserted. The crushing force is to be applied gradually in a direction normal to the mounting surface. (clause 46.5 of ANSI/UL 1310)</p>		P
5	Power unit intended for use by travelers requirement: (clause 14.1.4 of ANSI/UL 1310)	For reference only	N/A

Appendix: Plug portion (UL 1310)

	Requirement - Test	Result-Remark (Equipment)	Verdit
	<p>a) The blade assembly shall be a 125 volt, 15 amp configuration;</p> <p>b) The power unit shall employ a user adjustable voltage selector and comply with 39.6.1, or be capable of operating at different voltages without user adjustment;</p> <p>c) The input voltage rating shall include nominal 120 volt;</p> <p>d) The power unit shall be marked with any of the following or equivalent: 1) “See instruction manual for use in countries other than the U.S.A.” or 2) “See instructions for input voltage conversion.” or 3) “See instructions if the input plug does not fit the power outlet.”</p> <p>e) The power unit shall be provided with instructions include (1) – (3) or the equivalent, as appropriate. The items shall be preceded by “IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS” and “DANGER – TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS” in letters of 1/8 inch (3.18 mm) high or in a readily visible contrasting text.</p> <p>1) “Be sure voltage selector is in correct voltage position before plugging in.” The instructions shall also specify the procedures to follow for changing the voltage selector.</p> <p>2) “For use in the U.S.A., the voltage selector switch must be placed in the 120 volt position. For use in countries other than the U.S.A., the voltage selector may need to be placed in other than the 120 volt position. Confirm the voltage available at each country location before using</p>		

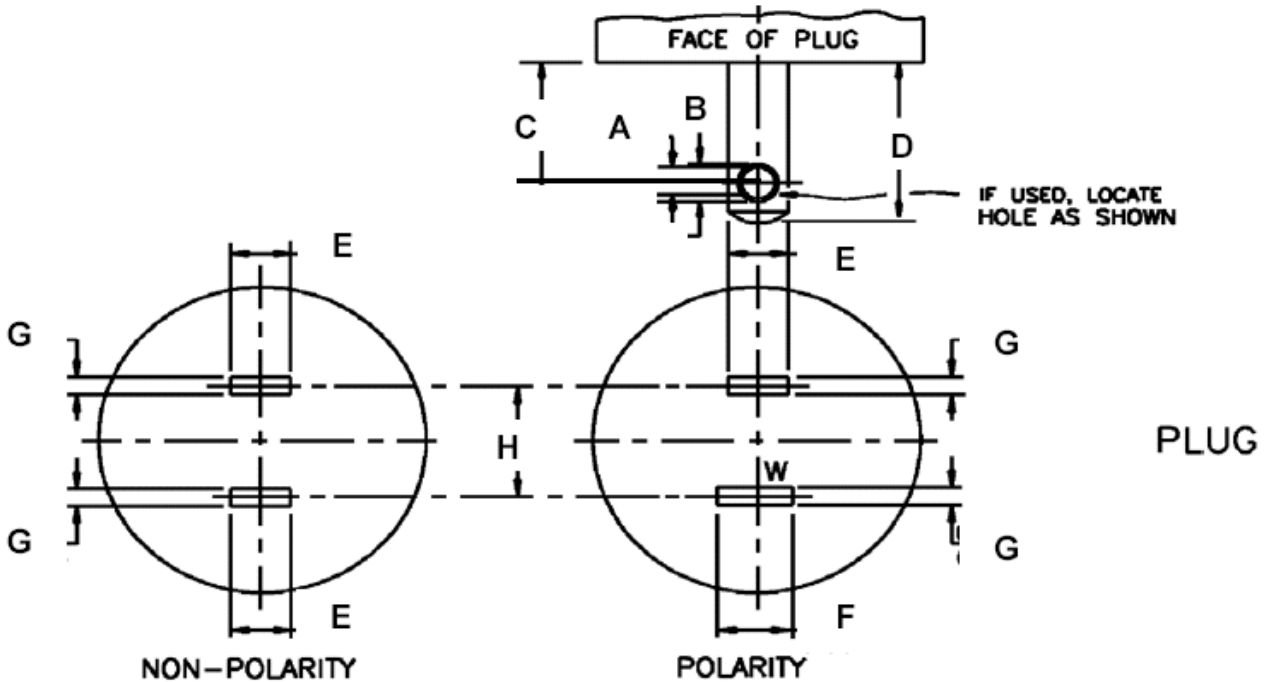
Appendix: Plug portion (UL 1310)

	Requirement - Test	Result-Remark (Equipment)	Verdit
	<p>the product.”</p> <p>3) “For connection to a supply not in the U.S.A., use an attachment plug adapter of the proper configuration for the power outlet, if needed.”</p> <p>Or, “If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet.”</p>		

DRAFT

Dimension Checking for Two-pin plugs of NA (15 A, 125 V)

According to (NEMA WD 6-2002 Figure 1-15)



Fixed plug for 18W series

Symbol	Requirement (inch)	Measured (inch)	Symbol	Requirement (inch)	Measured (inch)
A	0.120 - 0.130	0.125	E	0.240 - 0.260	0.246
B	0.151 - 0.161	0.160	F	0.307 - 0.322	--
C	0.449 - 0.479	0.459	G	0.055 - 0.065	0.057
D	0.625 - 0.718	0.665	H	0.495 - 0.505	0.498
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade					8.56mm

Detachable plug for 18W series

Symbol	Requirement (inch)	Measured (inch)	Symbol	Requirement (inch)	Measured (inch)
A	0.120 - 0.130	0.130	E	0.240 - 0.260	0.246
B	0.151 - 0.161	0.159	F	0.307 - 0.322	--
C	0.449 - 0.479	0.464	G	0.055 - 0.065	0.057
D	0.625 - 0.718	0.678	H	0.495 - 0.505	0.501
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade					8.44mm

Appendix: Plug portion (UL 1310)

Fixed plug for 24W series

Symbol	Requirement (inch)	Measured (inch)	Symbol	Requirement (inch)	Measured (inch)
A	0.120 - 0.130	0.126	E	0.240 - 0.260	0.246
B	0.151- 0.161	0.156	F	0.307 - 0.322	--
C	0.449 - 0.479	0.459	G	0.055 - 0.065	0.057
D	0.625 - 0.718	0.667	H	0.495 - 0.505	0.501
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade					7.91mm

Detachable plug for 24W series

Symbol	Requirement (inch)	Measured (inch)	Symbol	Requirement (inch)	Measured (inch)
A	0.120 - 0.130	0.130	E	0.240 - 0.260	0.246
B	0.151- 0.161	0.159	F	0.307 - 0.322	--
C	0.449 - 0.479	0.464	G	0.055 - 0.065	0.057
D	0.625 - 0.718	0.678	H	0.495 - 0.505	0.501
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade					8.44mm

Fixed plug for 36W series

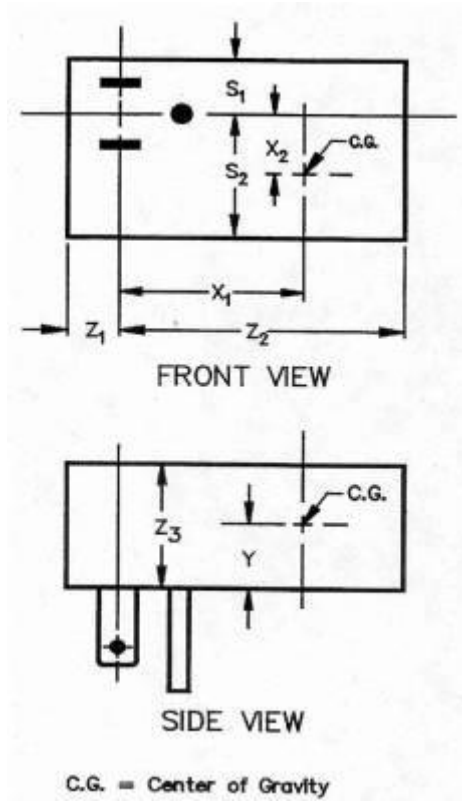
Symbol	Requirement (inch)	Measured (inch)	Symbol	Requirement (inch)	Measured (inch)
A	0.120 - 0.130	0.128	E	0.240 - 0.260	0.246
B	0.151- 0.161	0.158	F	0.307 - 0.322	--
C	0.449 - 0.479	0.462	G	0.055 - 0.065	0.057
D	0.625 - 0.718	0.670	H	0.495 - 0.505	0.501
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade					7.90mm

Detachable plug for 36W series

Symbol	Requirement (inch)	Measured (inch)	Symbol	Requirement (inch)	Measured (inch)
A	0.120 - 0.130	0.130	E	0.240 - 0.260	0.246
B	0.151- 0.161	0.159	F	0.307 - 0.322	--
C	0.449 - 0.479	0.464	G	0.055 - 0.065	0.057
D	0.625 - 0.718	0.678	H	0.495 - 0.505	0.501
Perimeter faces to the plug blades shall not be less than 7.9 mm (intended for use with children's toys) or 5.1 mm from any point of either blade					8.44mm

Appendix: Plug portion (UL 1310)

Dimension Checking for Two-pin plugs of NA (15 A, 125 V)
According to Figure 7.1 of ANSI/UL 1310



Fixed plug for 18W series

Symbol	Requirement	Measured	Symbol	Requirement	Measured
W	< 794 g	77g	X	—	19.26mm
Y	—	13.14mm	WY/Z	1361 g	58.35g
Z	—	17.34mm	WY/S	1361 g	47.50g
S	—	21.30mm	WX	0.56 Nm	0.0148Nm

Note:

- 1) W: the weight of the unit;
- 2) Y: the distance illustrated in the figure above (mm);
- 3) Z: the lesser of the two distances, Z1 or Z2, as illustrated in figure above (mm);
- 4) S: the lesser of the two distances, S1 or S2, as illustrated in figure above (mm);
- 5) X: the greater of the two distances, X1 or X2, as illustrated in figure above (mm).

Detachable plug for 18W serie

Symbol	Requirement	Measured	Symbol	Requirement	Measured
W	< 794 g	101g	X	—	26.34mm
Y	—	21.45mm	WY/Z	1361 g	133.32g

Appendix: Plug portion (UL 1310)

Z	—	16.25mm		WY/S	1361 g	102.19g
S	—	21.20mm		WX	0.56 Nm	0.0266Nm

Note:

- 1) W: the weight of the unit;
- 2) Y: the distance illustrated in the figure above (mm);
- 3) Z: the lesser of the two distances, Z1 or Z2, as illustrated in figure above (mm);
- 4) S: the lesser of the two distances, S1 or S2, as illustrated in figure above (mm);
- 5) X: the greater of the two distances, X1 or X2, as illustrated in figure above (mm).

Fixed plug for 24W series

Symbol	Requirement	Measured		Symbol	Requirement	Measured
W	< 794 g	101g		X	—	21.05mm
Y	—	16.30mm		WY/Z	1361 g	78.6g
Z	—	21.09mm		WY/S	1361 g	72.88g
S	—	22.59mm		WX	0.56 Nm	0.0221Nm

Note:

- 1) W: the weight of the unit;
- 2) Y: the distance illustrated in the figure above (mm);
- 3) Z: the lesser of the two distances, Z1 or Z2, as illustrated in figure above (mm);
- 4) S: the lesser of the two distances, S1 or S2, as illustrated in figure above (mm);
- 5) X: the greater of the two distances, X1 or X2, as illustrated in figure above (mm).

Detachable plug for 24W series

Symbol	Requirement	Measured		Symbol	Requirement	Measured
W	< 794 g	117g		X	—	29.32mm
Y	—	22.08mm		WY/Z	1361 g	144.16g
Z	—	17.92mm		WY/S	1361 g	112.27g
S	—	23.01mm		WX	0.56 Nm	0.0343Nm

Note:

- 1) W: the weight of the unit;
- 2) Y: the distance illustrated in the figure above (mm);
- 3) Z: the lesser of the two distances, Z1 or Z2, as illustrated in figure above (mm);
- 4) S: the lesser of the two distances, S1 or S2, as illustrated in figure above (mm);
- 5) X: the greater of the two distances, X1 or X2, as illustrated in figure above (mm).

Fixed plug for 36W series

Appendix: Plug portion (UL 1310)

Symbol	Requirement	Measured	Symbol	Requirement	Measured
W	< 794 g	160g	X	—	28.83mm
Y	—	18.80mm	WY/Z	1361 g	151.48g
Z	—	19.10mm	WY/S	1361 g	119.84g
S	—	25.10mm	WX	0.56 Nm	0.0461Nm

Note:

- 1) W: the weight of the unit;
- 2) Y: the distance illustrated in the figure above (mm);
- 3) Z: the lesser of the two distances, Z1 or Z2, as illustrated in figure above (mm);
- 4) S: the lesser of the two distances, S1 or S2, as illustrated in figure above (mm);
- 5) X: the greater of the two distances, X1 or X2, as illustrated in figure above (mm).

Detachable plug for 36W series

Symbol	Requirement	Measured	Symbol	Requirement	Measured
W	< 794 g	170g	X	—	31.07mm
Y	—	23.93mm	WY/Z	1361 g	234.60g
Z	—	17.34mm	WY/S	1361 g	161.62g
S	—	25.17mm	WX	0.56 Nm	0.0528Nm

Note:

- 1) W: the weight of the unit;
- 2) Y: the distance illustrated in the figure above (mm);
- 3) Z: the lesser of the two distances, Z1 or Z2, as illustrated in figure above (mm);
- 4) S: the lesser of the two distances, S1 or S2, as illustrated in figure above (mm);
- 5) X: the greater of the two distances, X1 or X2, as illustrated in figure above (mm).

Appendix: Plug portion (EN 50075)

Equipment's combined with two-pole plug (Class II)

Supplementary tests on plug portion according to EN 50075 or IEC 60884-1

	Requirement - Test	References to clause in		Result-Remark	Comply
		IEC 60884-1	EN 50075		
1	Plug portion				P
	CEE 7 Standard Sheet			XVI	P
	EN 50 075				P
2	Dimensions				P
	Checking dimensions by measuring and by gauges according to Standard sheet				P
	The edges of the metal-pins, Chamfered or rounded off			Rounded	P
3	Protection against electric shock				P
a	Test finger (75N, 1 min in 35°C) or Applicable appliance standard	10.1	8.1		P
b	Single pole insertion. Checked with gauge: Fig 4 or C19A or C19B (CEE 7)	10.3	8.2		P
c	Compression test 150 N, 5 min.	10.1	13.1		P
d	External parts made of insulating material	10.4	8.3		P
4	Construction				P
a	Test on pins which are not solid	14.2	9.3		N/A
b	Pins shall be locked against rotation 0.4 Nm 1 min.	24.2	13.2		P

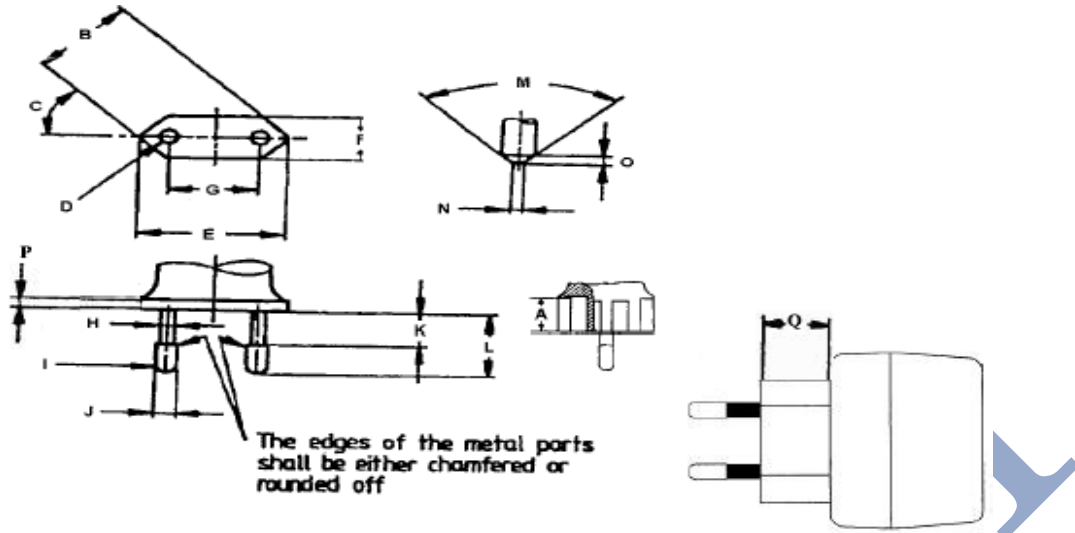
Appendix: Plug portion (EN 50075)

	Requirement - Test	References to clause in		Result-Remark	Comply
		IEC 60884-1	EN 50075		
c	Pins shall be adequately fixed in the body 1 min. Temperature 70°C 40 N for plugs < 2,5 A 50 N for plugs > 2,5 A	24.10	13.4		P
d	Pins of copper or copper alloy min 58% copper or equivalent	26.5-26.6	15.3	> 58%	P
e	Plug shall not impose undue strain on fixed socket-outlets, 0,25 Nm	14.23.2		Normal: 0.068 N.m Max	P
f	Abrasion test on the insulating sleeves 20 000 movements	24.7	13.3		P
5	Resistance of insulating material to abnormal heat, to fire and to tracking				P
a	Compression test 1 h in 80°C	25.4	14.1.2		N/A
b	Glow-wire test 750°C	28.1.1	17		P
c	Resistance to tracking 175V (other than ordinary)	28.2			N/A

Appendix: Plug portion (EN 50075)

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



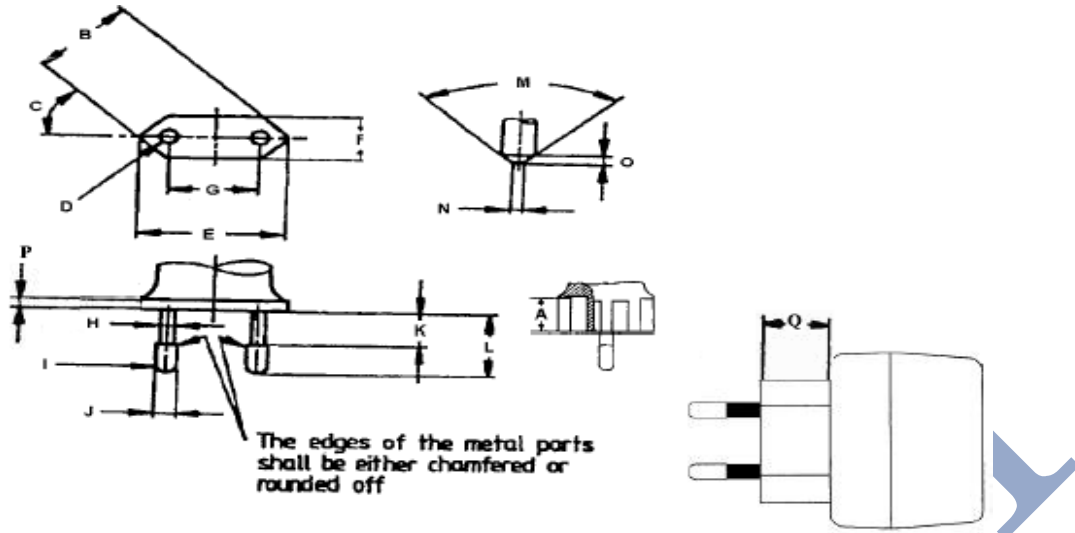
Fixed plug for 18W series

Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	16.5	--	I	--	--
B	25.6 - 26.6	26.20-26.46	J	3.94 - 4.06	3.95
C	45	45°	K	10.0 - 11.0	10.20
D	R 5.0 - 6.0	5.5	L	18.5 - 19.5	18.97
E	34.6 - 36.0	35.48	M	≤ 90 °	--
F	13.0 - 14.4	13.79	N	0.7 - 1.7	--
G	Engagement 18.0 - 19.2	18.74	O	≤ 2,0	--
G	End 17.0 - 18.0	17.69	P	≥ 4,0	--
H	Within 4 mm from engagement face ≤ 4.0mm	3.88	Q	≥ 18,0	18.34
	Above 4 mm from engagement face ≤ 3.8mm	3.61			

Appendix: Plug portion (EN 50075)

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



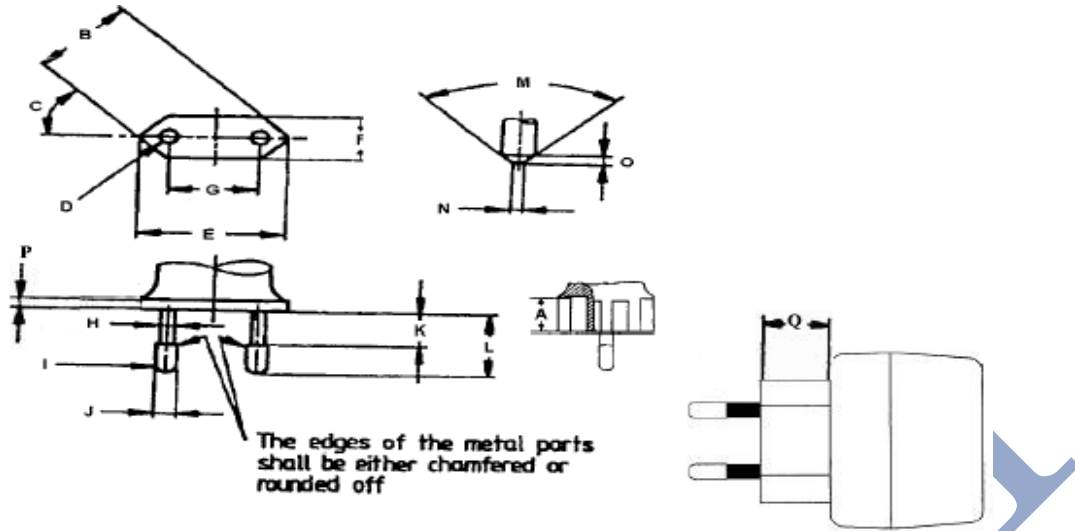
Detachable plug for 18W series

Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	16.5	--	I	--	--
B	25.6 - 26.6	26.10-26.42	J	3.94 - 4.06	3.96
C	45	45°	K	10.0 - 11.0	10.52
D	R 5.0 - 6.0	5.4	L	18.5 - 19.5	19.04
E	34.6 - 36.0	35.55	M	≤ 90 °	--
F	13.0 - 14.4	13.77	N	0.7 - 1.7	--
G	Engagement 18.0 - 19.2	18.42	O	≤ 2,0	--
G	End 17.0 - 18.0	17.62	P	≥ 4,0	--
H	Within 4 mm from engagement face ≤ 4.0mm	3.83	Q	≥ 18,0	18.13
	Above 4 mm from engagement face ≤ 3.8mm	3.43			

Appendix: Plug portion (EN 50075)

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



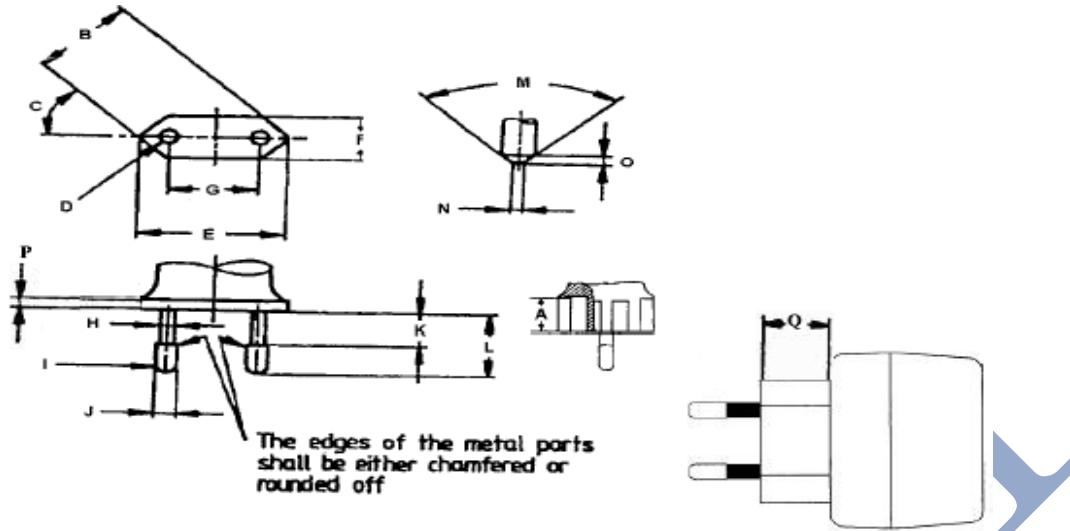
Fixed plug for 24W series

Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	16.5	--	I	--	--
B	25.6 - 26.6	26.12-26.26	J	3.94 - 4.06	3.99
C	45	45°	K	10.0 - 11.0	10.20
D	R 5.0 - 6.0	5.5	L	18.5 - 19.5	18.92
E	34.6 - 36.0	35.41	M	≤ 90 °	--
F	13.0 - 14.4	13.57	N	0.7 - 1.7	--
G	Engagement 18.0 - 19.2	18.72	O	≤ 2,0	--
G	End 17.0 - 18.0	17.67	P	≥ 4,0	--
H	Within 4 mm from engagement face ≤ 4.0mm	3.82	Q	≥ 18,0	18.56
	Above 4 mm from engagement face ≤ 3.8mm	3.43			

Appendix: Plug portion (EN 50075)

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



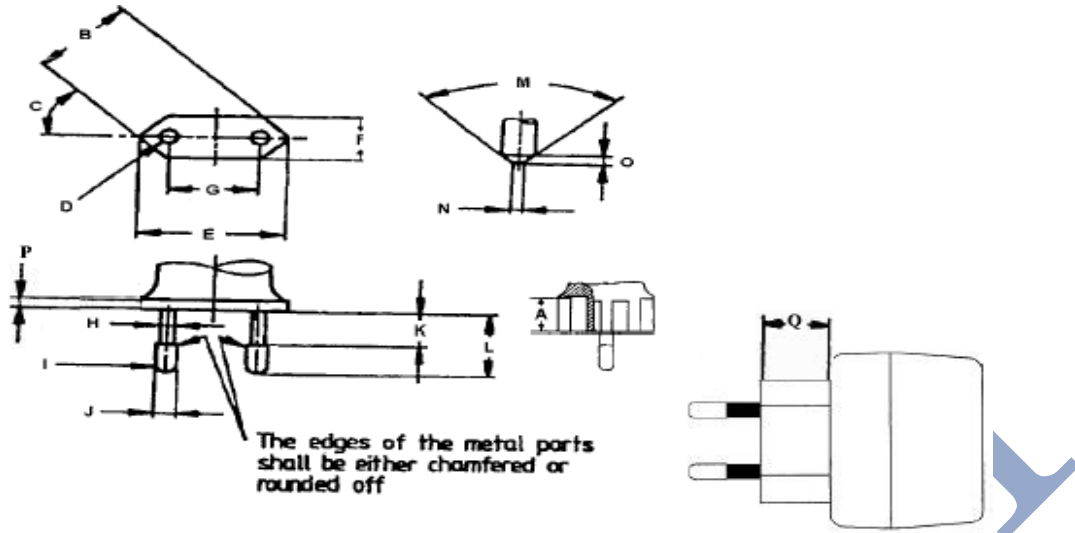
Detachable plug for 24W series

Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	16.5	--	I	--	--
B	25.6 - 26.6	26.10-26.42	J	3.94 - 4.06	3.96
C	45	45°	K	10.0 - 11.0	10.52
D	R 5.0 - 6.0	5.4	L	18.5 - 19.5	19.04
E	34.6 - 36.0	35.55	M	≤ 90 °	--
F	13.0 - 14.4	13.77	N	0.7 - 1.7	--
G	Engagement 18.0 - 19.2	18.42	O	≤ 2,0	--
G	End 17.0 - 18.0	17.62	P	≥ 4,0	--
H	Within 4 mm from engagement face ≤ 4.0mm	3.83	Q	≥ 18,0	18.13
	Above 4 mm from engagement face ≤ 3.8mm	3.43			

Appendix: Plug portion (EN 50075)

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



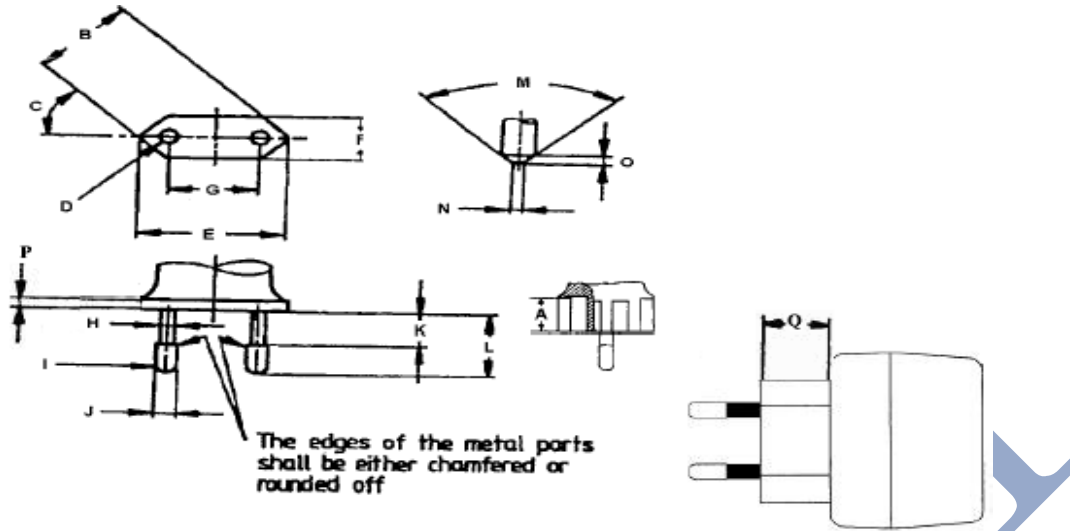
Fixed plug for 36W series

Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	16.5	--	I	--	--
B	25.6 - 26.6	25.76-26.26	J	3.94 - 4.06	3.96
C	45	45°	K	10.0 - 11.0	10.10
D	R 5.0 - 6.0	5.5	L	18.5 - 19.5	19.07
E	34.6 - 36.0	35.41	M	≤ 90 °	--
F	13.0 - 14.4	13.45	N	0.7 - 1.7	--
G	Engagement 18.0 - 19.2	18.70	O	≤ 2,0	--
G	End 17.0 - 18.0	17.62	P	≥ 4,0	--
H	Within 4 mm from engagement face ≤ 4.0mm	3.81	Q	≥ 18,0	18.30
	Above 4 mm from engagement face ≤ 3.8mm	3.54			

Appendix: Plug portion (EN 50075)

Two-pin plugs for class II appliances (Up to 2.5 A rating)

According to EN 50075 - Standard Sheet and IEC 60083 - Standard C5



Detachable plug for 36W series

Symbol	Requirement (mm)	Measured (mm)	Symbol	Requirement (mm)	Measured (mm)
A	16.5	--	I	--	--
B	25.6 - 26.6	26.10-26.42	J	3.94 - 4.06	3.96
C	45	45°	K	10.0 - 11.0	10.52
D	R 5.0 - 6.0	5.4	L	18.5 - 19.5	19.04
E	34.6 - 36.0	35.55	M	≤ 90 °	--
F	13.0 - 14.4	13.77	N	0.7 - 1.7	--
G	Engagement 18.0 - 19.2	18.42	O	≤ 2,0	--
G	End 17.0 - 18.0	17.62	P	≥ 4,0	--
H	Within 4 mm from engagement face ≤ 4.0mm	3.83	Q	≥ 18,0	18.13
	Above 4 mm from engagement face ≤ 3.8mm	3.43			

Appendix: Plug portion (BS 1363)

Equipment combined with BS-plug

Supplementary tests on plug portion according to BS1363-1: 2016 + A1: 2018 & BS1363-3: 2016 + A1: 2018

Clause	Requirement - Test	Result-Remark	Verdict
12.1	Dimensions (Checked according to figure 4a)		P
12.2	Outline of plug shall not exceed the dimension shown in Figure 4a for a distance of not less than 6.35 mm from the engagement surface		P
	Pin disposition, length and body outline shall be checked by use of the gauge shown in Figure 5		P
12.3	L/N pin was more than 9.5 mm from the periphery of the plug measured along the engagement surface		P
12.6 (BS 1363-3, 12.7)	The base and cover of rewireable plugs shall be adaptor plugs having the cover fixed by screws shall be firmly secured to each other, It shall not be possible to remove the cover unless the adaptor is completely withdrawn from the socket-outlet. Fixing screws shall be captive. The test is carried out using apparatus similar to that shown in Figure 6		N/A
12.7 (BS 1363-3, 12.9.1)	After the temperature rise test (clause 16). Use test probe 11 of BS EN 61032: 1998 is applied a force 30 -5/0 N. During and after the test, it was not possible to touch the live parts		P
12.9 (BS 1363-3, 12.11)	Adaptor plug pins shall be constructed of brass, except for sleeves of pins as specified in 12.16		P
	All exposed surfaces of the adaptor plug pins shall be smooth and free from burrs or sharp edges and other irregularities which could cause damage or excessive wear to corresponding socket contacts or shutters		P
	Those surfaces of the non-solid adaptor plug pins which are visible when the adaptor is correctly assembled shall be free of apertures		N/A
	All seams and joints of non-solid adaptor plug pins shall be closed over their entire length		N/A
	For solid pins: Apply a force of 1100N (-10, 0N) at a rate not exceeding 10 mm/min. After this test the plug should fit the gauge to fig. 5		P
	For non-solid pins: Apply a force of 800N (-10, 0N) to the movable anvil 50 times without impact. After this test the plug should fit the gauge to fig. 5		N/A

Appendix: Plug portion (BS 1363)

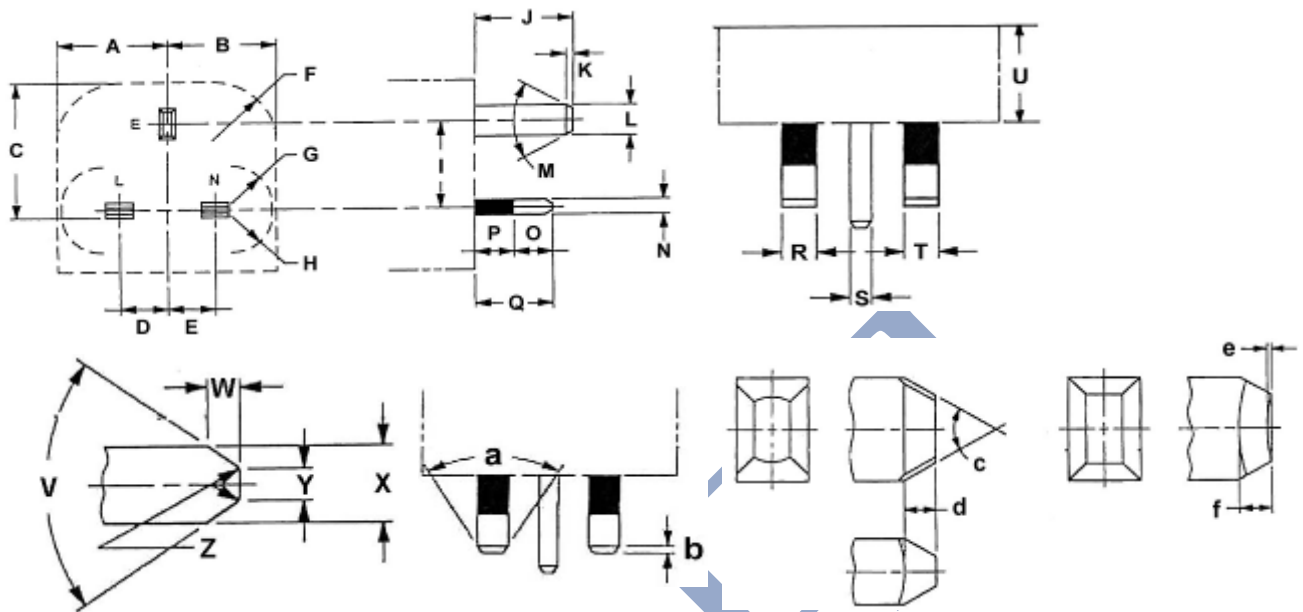
Clause	Requirement - Test	Result-Remark	Verdict
	Adaptors with non-solid pins shall not cause excessive wear to socket contacts or shutters of socket-outlets in accordance with BS 1363-2:2016		P
12.9.6 (BS 1363-3, 12.11.6)	Adaptor plug pins shall have adequate mechanical strength to ensure that they cannot be distorted by twisting. Apply a torque 1N.m ± 10% for 60 +5/0 s. After each pin has been separately twisted, the plug was fit the gauge in fig. 5. Repeated with opposite direction		P
12.11 (BS 1363-3, 12.13)	Adaptors shall be so designed that when fully assembled the pins are adequately retained in position such that there is no likelihood of them becoming detached from the adaptor during normal use		P
	Each pin is subjected for 60 +5/0 s to a pull of 100 - 2/0 N without jerks in the direction of the major axis. The plug is mounted using the steel plate shown in fig.7. The apparatus is placed within an oven and the pull is applied at least 1 h after the plug body has attained the test temperature of 70°C ± 5°C while maintained at this temperature. After the test, the plug pin shall fit into the gauge and comply with 12.2.1		P
12.12 (BS 1363-3, 12.14)	The degree of flexibility of mounting of the plug pins or the angular movement of the pins in the base shall be not greater than 3° 30'. See fig. 8		P
	Test procedure refers to standard. During each test, the declination from the horizontal measured on the scale was not exceed 3° 30' and comply with 12.2.1		P
12.16 (BS 1363-3, 12.18)	Live and neutral adaptor plug pins shall be fitted with insulating sleeves. See fig.4a, sleeves shall not fitted to any earthing adaptor plug pin		P
12.17 (BS 1363-3, 12.19)	Plug pin sleeves shall have adequate electric strength, resistance to abrasion and resistance to deformation due to overheating of pins.		P
12.17.2 (BS 1363-3, 12.19.2)	A 50 Hz voltage of substantially sinusoidal waveform is applied between each L and N pin and a thin metal strip of between 5.5 mm and 6 mm width wrapped around the base of the plug pin sleeve adjacent to the base of the plug. Initially not more than 500 V is applied, the voltage then being raised to 1 250 V ±30 V which is maintained for 60s.		P

Appendix: Plug portion (BS 1363)

Clause	Requirement - Test	Result-Remark	Verdict
12.17.3 (BS 1363-3, 12.19.3)	Abrasion test – 10 000 times in each direction (20 000 movements) at a rate of 25 to 30 movements per minute (fig. 9)		P
	After the test, the sleeve shall show no damage and also shall not have been penetrated or creased, satisfy the tests in 12.19.2		P
12.17.4 (BS 1363-3, 12.19.4)	(192-200) °C, (115-120) mins, figure 10. (For direct plug in unit, 125 °C min.) The thickness of the sleeving shall not have been reduced by more than 50%		P
13.10 (BS 1363-3)	The total mass of the equipment with all specified connectors shall not exceed 800 g. The torque exerted on a socket shall not exceed 0.7 N·m. The test apparatus as Figure 37	0.065 N·m	P
	Additional: Products with torque exceeding 0.25Nm do not comply with the main standard hence full compliance with the main standard cannot be claimed		N/A
Additional test for ISODs according to BS1363-1: 2016 + A1: 2018			
12.9.1	All exposed surfaces of plug pins shall be smooth and free from burrs or sharp edges and other irregularities which could cause damage or excessive wear to corresponding socket contacts or shutters		P
12.9.4.1	For solid pins: Apply a force of 1100N (-10, 0N) at a rate not exceeding 10 mm/min. After this test the plug should fit the gauge to fig. 5		N/A
12.9.4.2	For non-solid pins: Apply a force of 800N (-10, 0N) to the movable anvil 50 times without impact. After this test the plug should fit the gauge to fig. 5		N/A
12.9.4.3	For ISODs: Apply a force of 400N (0, 10N) at a rate 10 ± 2 mm/min. Deflection shall not exceed 1.5 mm. After this test the plug should fit the gauge to fig. 5		P
12.9.6	ISODs shall have adequate mechanical strength to ensure that they cannot be distorted by twisting. Apply a torque $1N.m \pm 10\%$ for 60 +5/0 s. After each pin has been separately twisted, the plug shall fit the gauge in fig. 5. Repeated with opposite direction		P

Appendix: Plug portion (BS 1363)

UK Plug Checking Form according to Figure 4a of BS1363-3



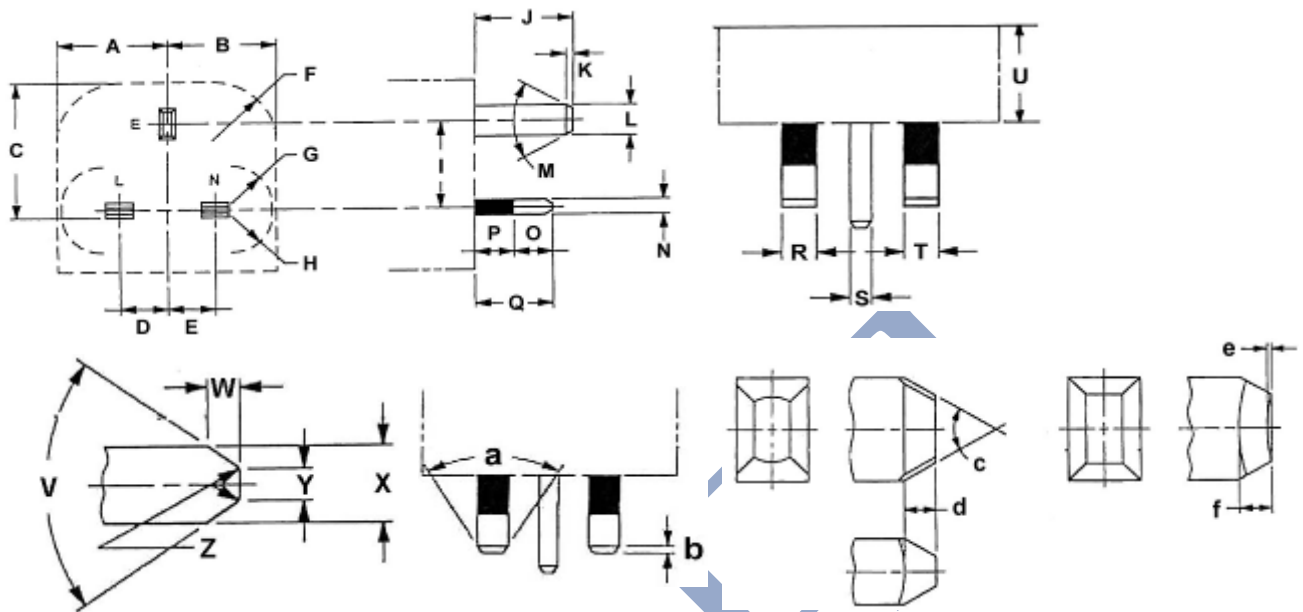
Fixed plug for 18W series

Symbol	Requirement (mm)	Measured (mm)
A	25.37 Max.	24.68
B	25.37 Max.	24.68
C	34.6 Max.	33.58
D	11.05-11.18	11.06
E	11.05-11.18	11.06
F	R 15 Min.	--
G	R 9.5 Min.	10.10
H	R 9.5 Min.	10.10
I	22.10-22.36	22.12
J	22.23-23.23	22.91
K	1.35-1.85	1.81
L	7.80-8.05	8.01
M	58°-62°	--
N	3.90-4.05	4.01
O	9.2 Max.	8.60
P	9.5 Max.	9.40

Symbol	Requirement (mm)	Measured (mm)
Q	17.2-18.2	18.00
R	6.22-6.48	6.26
S	3.90-4.05	3.99
T	6.22-6.48	6.27
U	6.35 Min.	7.31
V	60°-80°	--
W	1.35-1.85	1.42
X	3.90-4.05	3.96
Y	1.2-2.0	1.23
Z	R 0.1-1.0	--
a	58°-62°	--
b	1.35-1.85	1.63
c	58°-62°	--
d	1.35-1.85	1.49
e	0.2 Max.	--
f	1.35-1.85	--

Appendix: Plug portion (BS 1363)

UK Plug Checking Form according to Figure 4a of BS1363-3



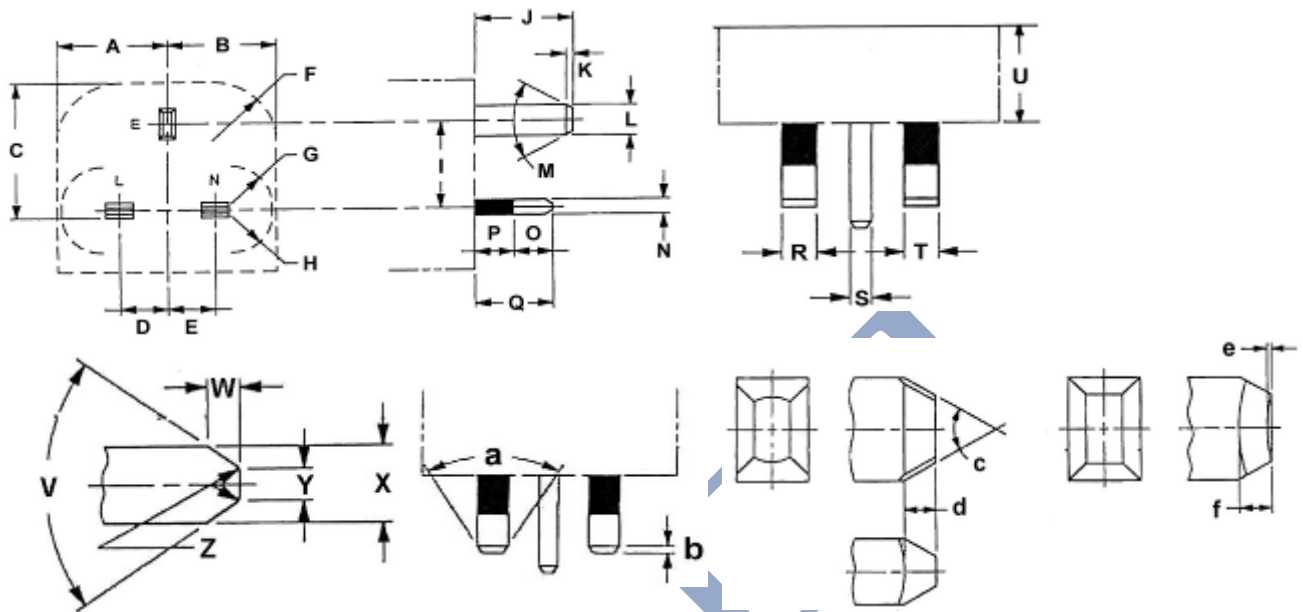
Detachable plug for 18W series

Symbol	Requirement (mm)	Measured (mm)
A	25.37 Max.	24.40
B	25.37 Max.	24.40
C	34.6 Max.	33.66
D	11.05-11.18	11.16
E	11.05-11.18	11.16
F	R 15 Min.	--
G	R 9.5 Min.	9.70
H	R 9.5 Min.	9.70
I	22.10-22.36	22.26
J	22.23-23.23	22.71
K	1.35-1.85	1.75
L	7.80-8.05	8.01
M	58°-62°	--
N	3.90-4.05	3.96
O	9.2 Max.	8.98
P	9.5 Max.	9.13

Symbol	Requirement (mm)	Measured (mm)
Q	17.2-18.2	18.11
R	6.22-6.48	6.26
S	3.90-4.05	4.01
T	6.22-6.48	6.26
U	6.35 Min.	11.64
V	60°-80°	--
W	1.35-1.85	1.70
X	3.90-4.05	4.02
Y	1.2-2.0	1.62
Z	R 0.1-1.0	--
a	58°-62°	--
b	1.35-1.85	1.79
c	58°-62°	--
d	1.35-1.85	1.37
e	0.2 Max.	--
f	1.35-1.85	--

Appendix: Plug portion (BS 1363)

UK Plug Checking Form according to Figure 4a of BS1363-3



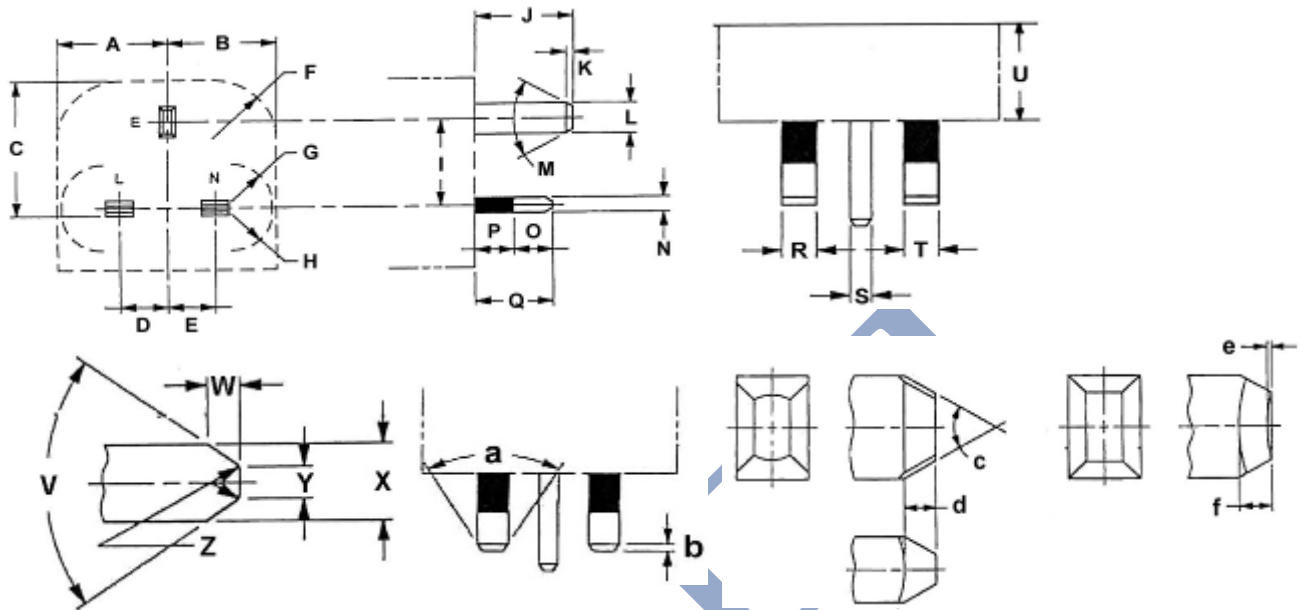
Fixed plug for 24W series

Symbol	Requirement (mm)	Measured (mm)
A	25.37 Max.	24.23
B	25.37 Max.	24.23
C	34.6 Max.	33.42
D	11.05-11.18	11.06
E	11.05-11.18	11.06
F	R 15 Min.	--
G	R 9.5 Min.	9.60
H	R 9.5 Min.	9.60
I	22.10-22.36	22.12
J	22.23-23.23	22.91
K	1.35-1.85	1.81
L	7.80-8.05	8.01
M	58°-62°	--
N	3.90-4.05	4.01
O	9.2 Max.	8.55
P	9.5 Max.	9.15

Symbol	Requirement (mm)	Measured (mm)
Q	17.2-18.2	17.70
R	6.22-6.48	6.26
S	3.90-4.05	3.99
T	6.22-6.48	6.27
U	6.35 Min.	7.22
V	60°-80°	--
W	1.35-1.85	1.42
X	3.90-4.05	3.96
Y	1.2-2.0	1.23
Z	R 0.1-1.0	--
a	58°-62°	--
b	1.35-1.85	1.63
c	58°-62°	--
d	1.35-1.85	1.49
e	0.2 Max.	--
f	1.35-1.85	--

Appendix: Plug portion (BS 1363)

UK Plug Checking Form according to Figure 4a of BS1363-3



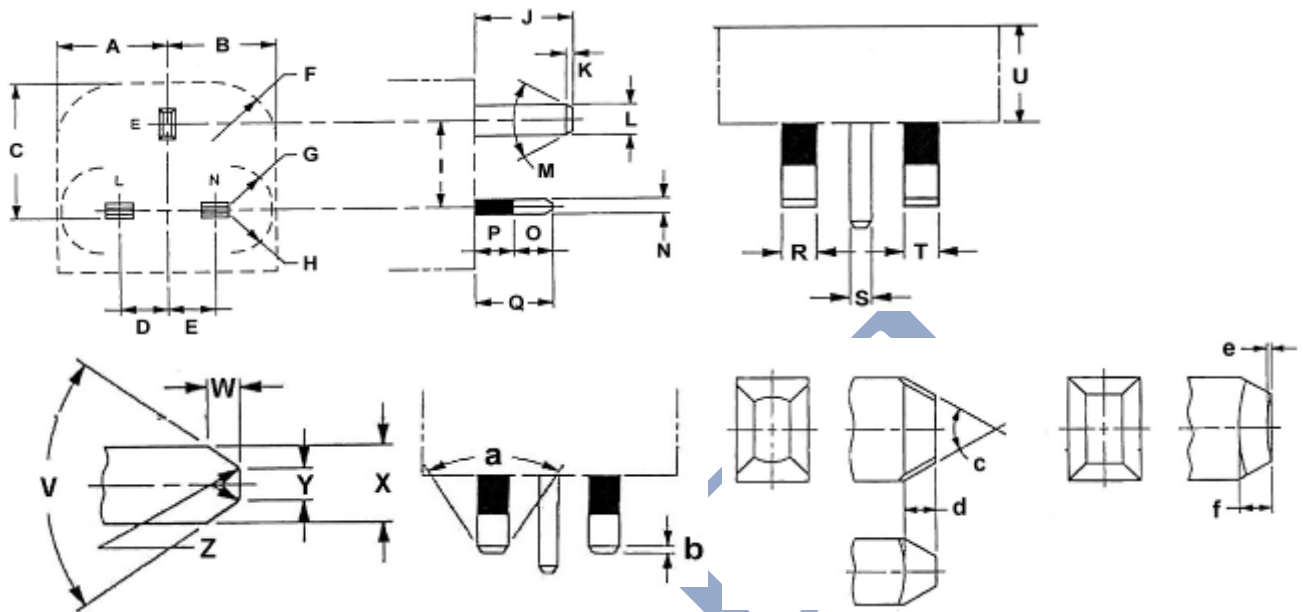
Detachable plug for 24W series

Symbol	Requirement (mm)	Measured (mm)
A	25.37 Max.	24.40
B	25.37 Max.	24.40
C	34.6 Max.	33.66
D	11.05-11.18	11.16
E	11.05-11.18	11.16
F	R 15 Min.	--
G	R 9.5 Min.	9.70
H	R 9.5 Min.	9.70
I	22.10-22.36	22.26
J	22.23-23.23	22.71
K	1.35-1.85	1.75
L	7.80-8.05	8.01
M	58°-62°	--
N	3.90-4.05	3.96
O	9.2 Max.	8.98
P	9.5 Max.	9.13

Symbol	Requirement (mm)	Measured (mm)
Q	17.2-18.2	18.11
R	6.22-6.48	6.26
S	3.90-4.05	4.01
T	6.22-6.48	6.26
U	6.35 Min.	11.83
V	60°-80°	--
W	1.35-1.85	1.70
X	3.90-4.05	4.02
Y	1.2-2.0	1.62
Z	R 0.1-1.0	--
a	58°-62°	--
b	1.35-1.85	1.79
c	58°-62°	--
d	1.35-1.85	1.37
e	0.2 Max.	--
f	1.35-1.85	--

Appendix: Plug portion (BS 1363)

UK Plug Checking Form according to Figure 4a of BS1363-3



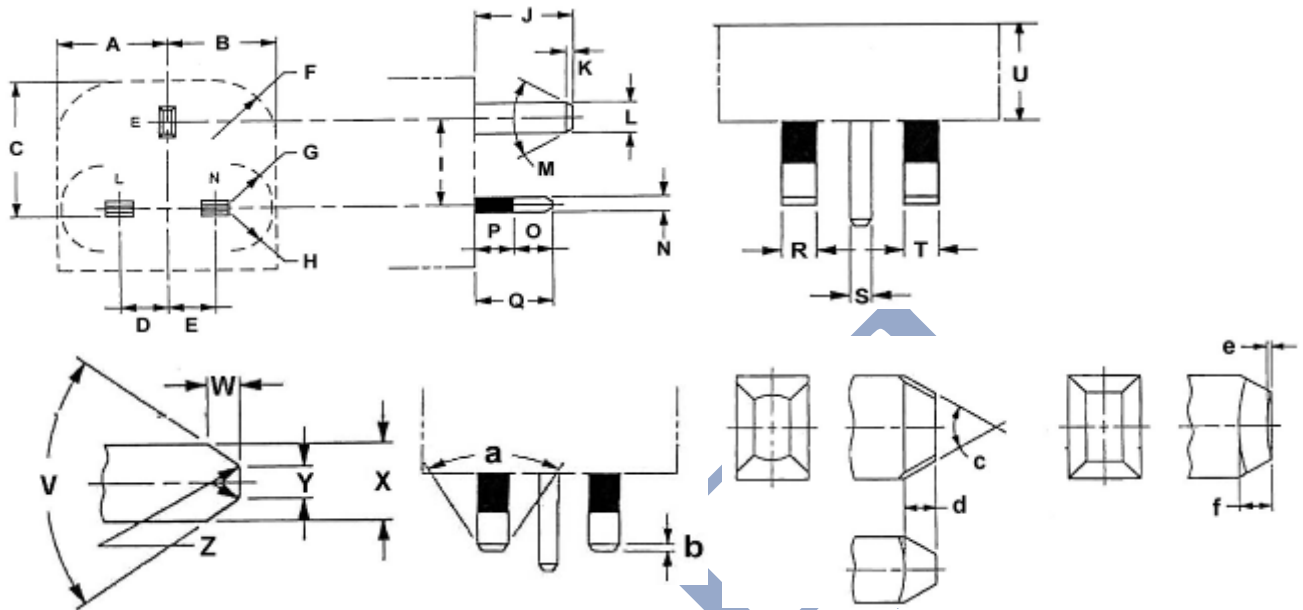
Fixed plug for 36W series

Symbol	Requirement (mm)	Measured (mm)
A	25.37 Max.	24.22
B	25.37 Max.	24.22
C	34.6 Max.	33.68
D	11.05-11.18	11.06
E	11.05-11.18	11.06
F	R 15 Min.	--
G	R 9.5 Min.	9.70
H	R 9.5 Min.	9.70
I	22.10-22.36	22.12
J	22.23-23.23	22.91
K	1.35-1.85	1.81
L	7.80-8.05	8.01
M	58°-62°	--
N	3.90-4.05	4.01
O	9.2 Max.	8.65
P	9.5 Max.	9.45

Symbol	Requirement (mm)	Measured (mm)
Q	17.2-18.2	18.10
R	6.22-6.48	6.26
S	3.90-4.05	3.99
T	6.22-6.48	6.27
U	6.35 Min.	7.83
V	60°-80°	--
W	1.35-1.85	1.42
X	3.90-4.05	3.96
Y	1.2-2.0	1.23
Z	R 0.1-1.0	--
a	58°-62°	--
b	1.35-1.85	1.63
c	58°-62°	--
d	1.35-1.85	1.49
e	0.2 Max.	--
f	1.35-1.85	--

Appendix: Plug portion (BS 1363)

UK Plug Checking Form according to Figure 4a of BS1363-3



Detachable plug for 36W series

Symbol	Requirement (mm)	Measured (mm)
A	25.37 Max.	24.40
B	25.37 Max.	24.40
C	34.6 Max.	33.66
D	11.05-11.18	11.16
E	11.05-11.18	11.16
F	R 15 Min.	--
G	R 9.5 Min.	9.70
H	R 9.5 Min.	9.70
I	22.10-22.36	22.26
J	22.23-23.23	22.71
K	1.35-1.85	1.75
L	7.80-8.05	8.01
M	58°-62°	--
N	3.90-4.05	3.96
O	9.2 Max.	8.98
P	9.5 Max.	9.13

Symbol	Requirement (mm)	Measured (mm)
Q	17.2-18.2	18.11
R	6.22-6.48	6.26
S	3.90-4.05	4.01
T	6.22-6.48	6.26
U	6.35 Min.	12.07
V	60°-80°	--
W	1.35-1.85	1.70
X	3.90-4.05	4.02
Y	1.2-2.0	1.62
Z	R 0.1-1.0	--
a	58°-62°	--
b	1.35-1.85	1.79
c	58°-62°	--
d	1.35-1.85	1.37
e	0.2 Max.	--
f	1.35-1.85	--

Supplementary tests on plug portion according to AS/NZS 3112:2017

Clause	Requirement + Test	Main Clause	Verdict
J1	Scope		P
J2.1	Detachable plug portion		P
	A plug portion that is detachable from the equipment and with connections including following standardized outputs and other concates:		P
	(a) Type A A detachable plug with a connection intended for plugging directly into equipment. The connection being via the equipment group 1 appliance inlet with the scope of AS/NZS 60320-1.		N/A
	(b) Type B A detachable plug portion with a non-standardized connection intended for plugging directly into equipment.		P
	(c) Type C A detachable plug portion with a connection intended for use with an adaptor connected t a flexible cord so as to replicate asuply plug and flexible cord configuration. The connection being via a group 1 appliance outlet within scope of AS/NZS 60320.2.2, which is integral with the plug portion		N/A
J2.2	Integral plug portion		P
	A plug portion that is integral to the equipment enclosure and is not detachable.		P
J2.3	Plug portion		P
J3	Requirements for the plug portion		P
J3.1	General		P
J3.2	Plug pins of plug portion		P
	Material for pins	2.2.1	P
	The material of current carrying parts of plug pins should be copper, or copper alloy containing at least 58% copper for parts made from cold rolled sheet or at least 50% copper for other parts; or stainless steel containing at least 13% chromium and not more than 0.09% carbon.	>58%	P
	Assembly of pins	2.2.2	P
	The exposed ends and the contact portion of plug pins shall be smooth and free from openings or indentations;	2.2.3	P
	Live parts of insulated pin plugs shall not be exposed when the plug is partially or fully engaged with the associated socket.	2.2.4	P
	Plug up to 15A complying with Figure 2.1(a), 2.1(c) or 2.1(f) and of the insulated pin plug type do not need to comply with the R20.0 +/-1 mm of Figure 2.1(e).		P
J3.3	Ratings and dimensions for low voltage plug portions	2.8	P

Appendix: Plug portion (AS 3112)

Clause	Requirement + Test	Main Clause	Verdict
	Low voltage flat-pin plugs shall conform to the appropriate dimensions shown in Figure 2.1.	2.8.1	P
	the distance between a live pin of any plug and the edge of the moulding of the plug, shall be not less than 9 mm.	10.21mm min.	P
	No point on the front face of the plug is more than 0.5 mm.		P
	Compliance with dimensional requirements of Figure 2.1	2.8.4	P
	Low voltage flat-pin or combination of flat and round pin, plugs having ratings up to 15A of Figure 2.1(a1), Figure2.1(c), Figure 2.1(d), Figure 2.1(f) or Figure 2.1(g) type shall comply with the dimensional requirements of Figure 2.1(e).		P
	Plugs with insulated pins, complying with this Standard, need not comply with dimension R20+/-1.0 mm of Figure 2.1(e)		N/A
J3.4	Internal connections for plug portions	2.9	N/A
	A loose terminal screw or conductive material cannot bridge any live parts or earthing parts;		N/A
	The earthing parts are effectively isolated from contact with a live conductor which may become detached		N/A
	The live parts are effectively isolated from contact with any earthing conductor which may become detached		N/A
J3.5	Arrangement of earthing connections for plug portions	2.10	N/A
	The earthing pin of any low voltage, three-pin plug shall be that pin which is radial to the circle embracing the pins.		N/A
J3.6	Configuration of plug portions	2.12.6	P
	Configuration of plugs, viewed as from the pins, shall be earth, neutral and active in a clockwise direction. Where there is no earthing pin, the live pins shall conform to this configuration.		P
J4	Tests	2.13	P
J4.1	General	2.13.1	P
J4.2	High voltage test Clause 2.13.2 items (a) and (c), test voltage see table 2.3; Clause 2.13.2 items (b) and (d), test voltage is 3000 Vac, 1 min.; Clause 2.13.2 item (e), test voltage is 1250 Vac, 1 min.	3500Vac,1min for live poles of plug and any external metal. 1250Vac, 1min for insulated live poles and metal foil applied around the insulation on each live pin.	P

Appendix: Plug portion (AS 3112)

Clause	Requirement + Test	Main Clause	Verdict
J4.3	Mechanical strength of pin tests	2.13.7	P
J4.3.1	Tumbling barrel test	2.13.7.1	P
	a) 500 times if the mass of the specimen does not exceed 250g. The pins being straightened after 100 drops and at the completion of the test to pass through the appropriate gauge of figure A1, B1 or F1;	0.075kg	P
	b) 250 times if the mass of the specimen exceeds 250g. The pins being straightened after 25 drops and at the completion of the test to pass through the appropriate gauge of figure A1, B1 or F1;		N/A
	Following each test the samples shall comply - clause 2.13.7.1-		P
	a) Live parts shall not become exposed to the standard test finger;		P
	b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained;	No earth pin	N/A
	c) Any other function affecting safety shall not be impaired;		P
	d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created;		P
	e) the pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.		P
J4.3.2	Pin bending test	2.13.7.2	P
	All flat pins of plugs rated up to and including 15A shall be tested by clamping the plug in a rigid holding block and applying a bending force, as shown in Figure 2.8, to the pin under test.		P
J4.4	Temperature rise test	2.13.8	P
	Test current is specified in the relevant product standard. The temperature rise of the terminals shall not exceed 45 K.	2K	P
J4.5	Securement of pins of the plug portion	2.13.9	P
	Movement of pins: clamped 5 ± 0.5 mm and applying 18 ± 1 N to the pin at 14 ± 0.5 mm	2.13.9.1	P
	The maximum deflection shall not exceed 2.0 mm.		P
	Fixing of pins: maintained 50 ± 2 oC for 1 h. 60 ± 0.6 N for 10 min.	2.13.9.2	P
	The attachment of pins shall be not more than 2.4 mm or if any pin fails to return to within 0.8 mm of its nominal length specified in Figure 2.1 within 5 min of the removal of the test force.		P
J4.6	Tests on the insulation material of insulated pin plug portions	2.13.13	P
	Pressure test at high temperature	2.13.13.2	P
	maintained at 160 ± 5 oC for 2 h. Force 2,5 N applied through the blade		P
	Thickness within the area of impression ≥ 50 %. no cracks		P
	Static damp heat test	2.13.13.3	P

Appendix: Plug portion (AS 3112)

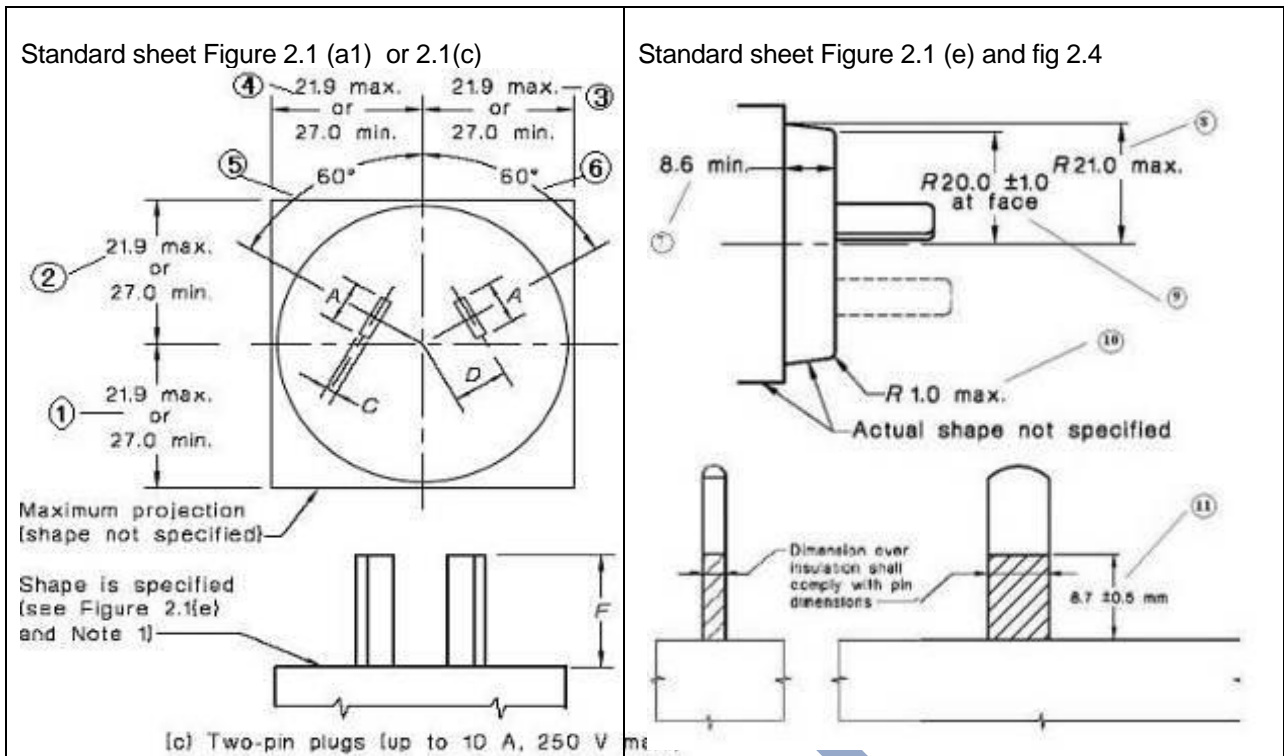
Clause	Requirement + Test	Main Clause	Verdict
	Two damp heat cycles in accordance with AS 60068.2.30. Db (12+12h cycle), 95% relative humidity, low temperature 25±3oC and upper temperature 40oC, after this treatment and recovery to room temperature, the specimen subjected to:		P
	(a) the insulation resistance test in accordance with Clause 2.13.2(e);		P
	(b) high voltage test in accordance with Clause 2.13.3 and;		P
	(c) abrasion test in accordance with Clause 2.13.13.6.		P
	Low temperature test	2.13.13.4	P
	Maintained at -15±2oC for at least 24 h and returned to room temperature, the specimen shall be subjected to:		P
	(a) the insulation resistance test in accordance with Clause 2.13.2(e);		P
	(b) high voltage test in accordance with Clause 2.13.3 and;		P
	(c) abrasion test in accordance with Clause 2.13.13.6.		P
	Impact test at low temperature	2.13.13.5	P
	maintained at -15±2oC for at least 24 h. subjected to an impact test by means of the apparatus shown in Figure 2.6, the mass of falling weight be 100±1g , fall from a height of 100 mm. Four impacts. Return to room temperature. No cracks of the insulating material be visible with normal, or corrected to normal, vision without additional magnification..		P
	Abrasion test	2.13.13.6	P
	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in Figure 2.7 No damage, the insulating sleeve shall not have punctured or rucked up.		P
J4.7	Equipment with integral pins intended to be supported by the contacts of socket-outlets shall not impose undue strain on those socket-outlets.		P
	The additional torque, which has to be applied to the socket-outlet to maintain the engagement face in the vertical plane, shall not exceed 0.25 N.m.	0.067 N.m max.	P
J4.8	Additional requirements for detachable plug portions.		P
J4.8.1	Access to live parts		P
	The design and construction of the detachable plug portion shall be such that it is not possible to contact live parts with the small test finger of Figure 13 of IEC 61032. Conformance is checked by inspection and applying small test finger of Figure 13 of IEC 61032:1997 to the plug portion. If an opening does not allow entry of the test finger, a force on the test finger in the straight position is increased to 20N.		P
J4.8.2	Construction of detachable contacts where the input current of the equipment exceeds 0.2A.		P
J4.8.3	Plug portion detachment requirements		P

Appendix: Plug portion (AS 3112)

Clause	Requirement + Test	Main Clause	Verdict
	Disengagement of the detachable plug portion from the equipment shall require at least two simultaneous independent actions or the use of a tool.		P
J4.8.4	Resistance of insulating material to heat and fire		P
J4.8.4.1	Resistance to heat		P
	<p>For Type B detachable plug portions parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary insulation of reinforced insulation, shall be sufficiently resistant to heat if their deterioration could cause the appliance to fail to comply with this standard.</p> <p>Conformance is checked by subjecting the relevant part to the ball pressure test of IEC 60695-10-2.</p> <p>The test is carried out at a temperature of $40\pm 2^{\circ}\text{C}$ plus the maximum temperature rise determined during the temperature test of paragraph J.4, but it shall be at least –</p> <p>(a) $75\pm 2^{\circ}\text{C}$, for external parts;</p> <p>(b) $125\pm 2^{\circ}\text{C}$, for parts supporting live parts.</p>		N/A
J4.8.4.2	Resistance to fire		P
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100. The glow-wire test temperature "T" shall be 750°C		P

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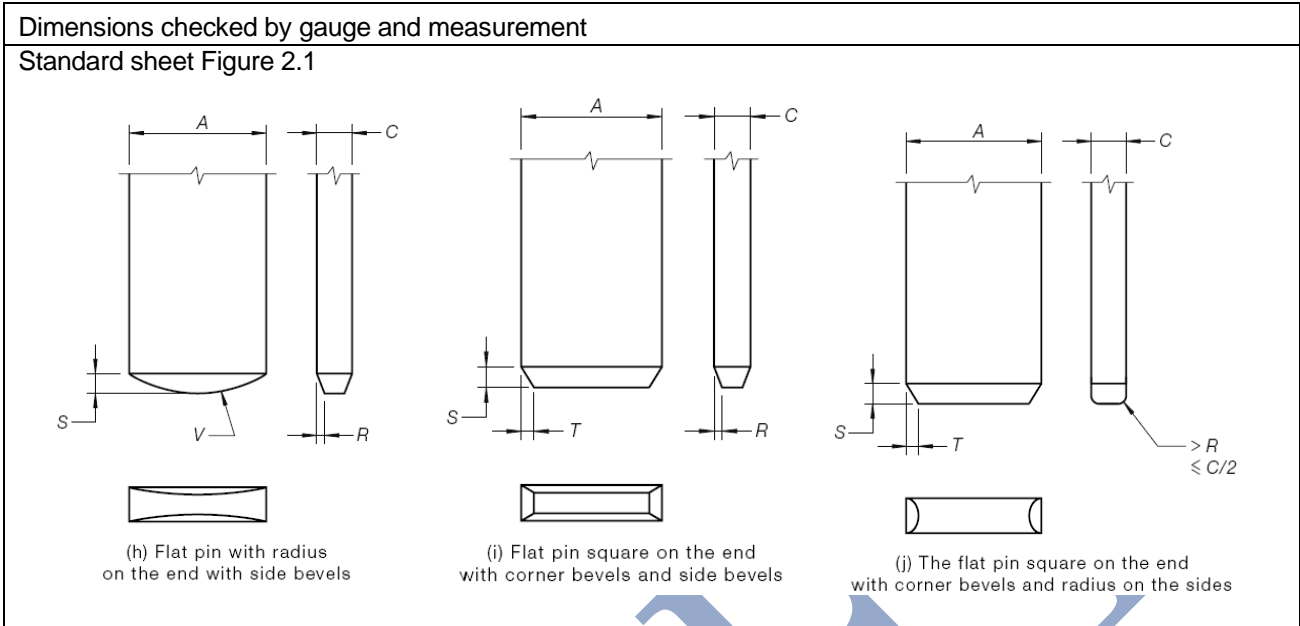
Appendix: Plug portion (AS 3112)



Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
A	6.35±0.15	6.38	-
B	6.35±0.15	--	-
C	1.63 ^{+0.15} _{-0.05}	1.65	-
D	7.92	--	P
E	10.31	--	-
F	17.06±0.4	17.16	-
G	19.94±0.8	--	-
1	21.9 max. or 27.0 min.	48.55	-
2	21.9 max. or 27.0 min.	19.94	-
3	21.9 max. or 27.0 min.	19.94	-
4	21.9 max. or 27.0 min.	19.94	-
5	60°	--	P
6	60°	--	P
7	8.6 min.	15.01	-
8	21.0 max.	20.13	-
9	20.0±1.0	20.01	-
10	1.0 max	--	-
11	8.7±0.5	8.55	-

Detachable plug for 18W series

Appendix: Plug portion (AS 3112)

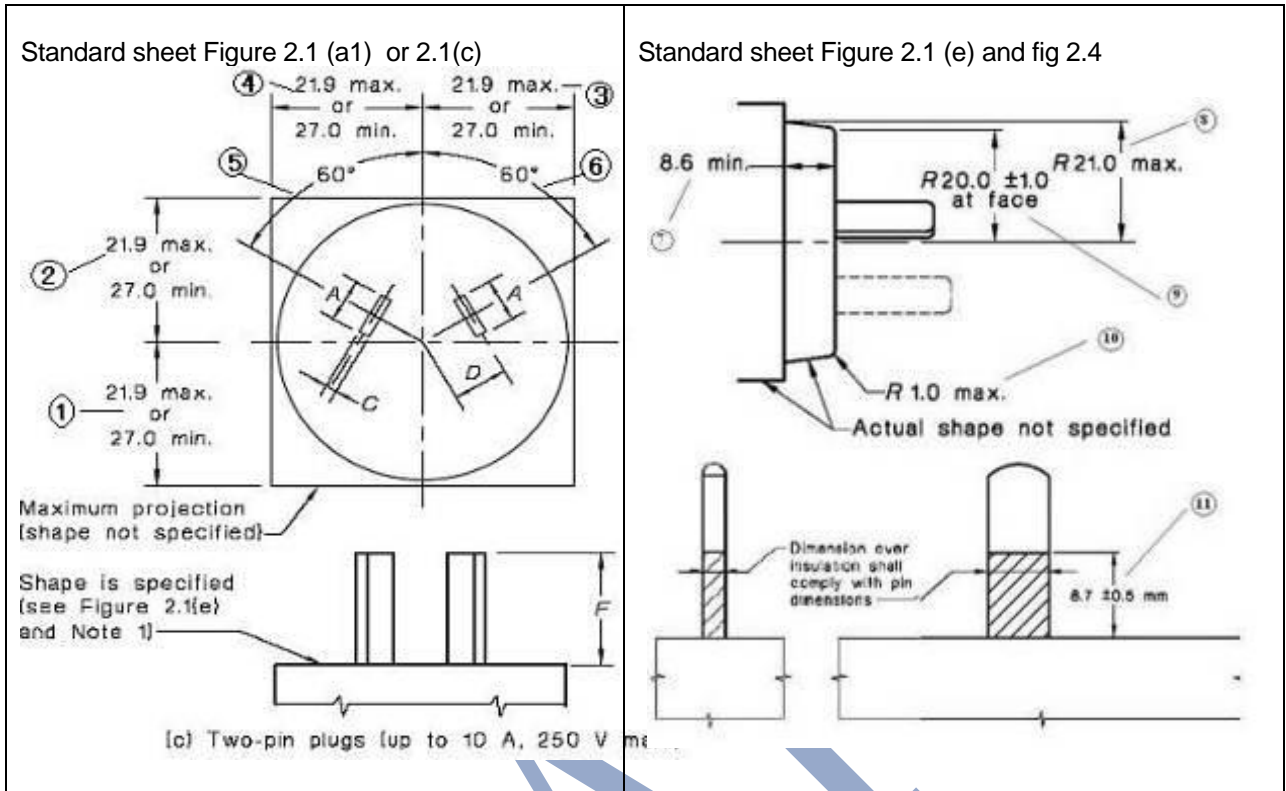


Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
Plug type (h)			
R	0.35±0.05	0.38	-
S	0.9±0.1	0.89	-
T	≥0.60	--	-
V	6	--	P

Detachable plug for 18W series

DRAFT

Appendix: Plug portion (AS 3112)



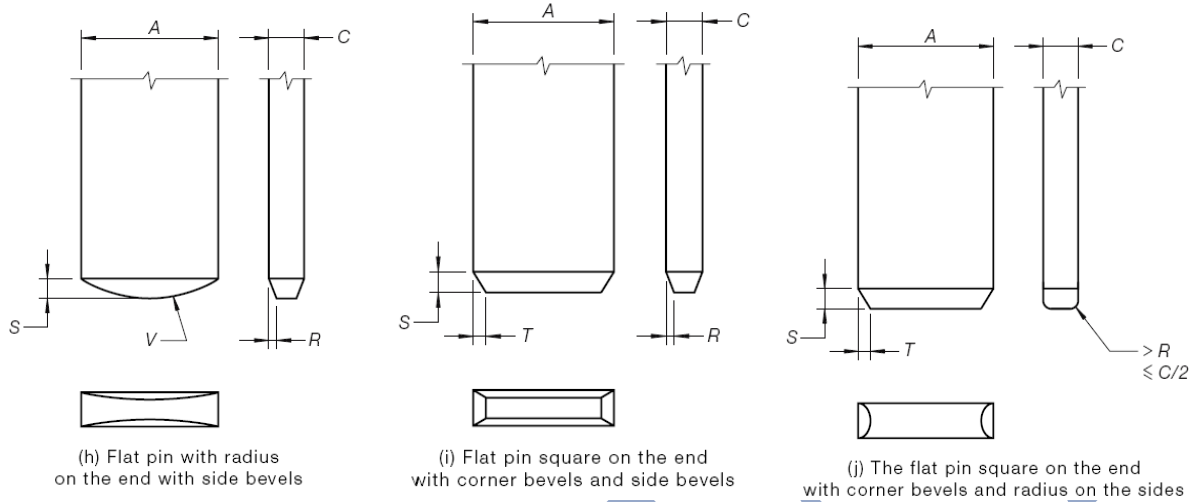
Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
A	6.35±0.15	6.32	-
B	6.35±0.15	--	-
C	1.63 ^{+0.15} _{-0.05}	1.68	-
D	7.92	--	P
E	10.31	--	-
F	17.06±0.4	17.32	-
G	19.94±0.8	--	-
1	21.9 max. or 27.0 min.	73.41	-
2	21.9 max. or 27.0 min.	19.65	-
3	21.9 max. or 27.0 min.	21.98	-
4	21.9 max. or 27.0 min.	21.98	-
5	60°	--	P
6	60°	--	P
7	8.6 min.	9.30	-
8	21.0 max.	18.86	-
9	20.0±1.0	19.36	-
10	1.0 max	--	-
11	8.7±0.5	8.97	-

Fixed plug for 24W series

Appendix: Plug portion (AS 3112)

Dimensions checked by gauge and measurement

Standard sheet Figure 2.1

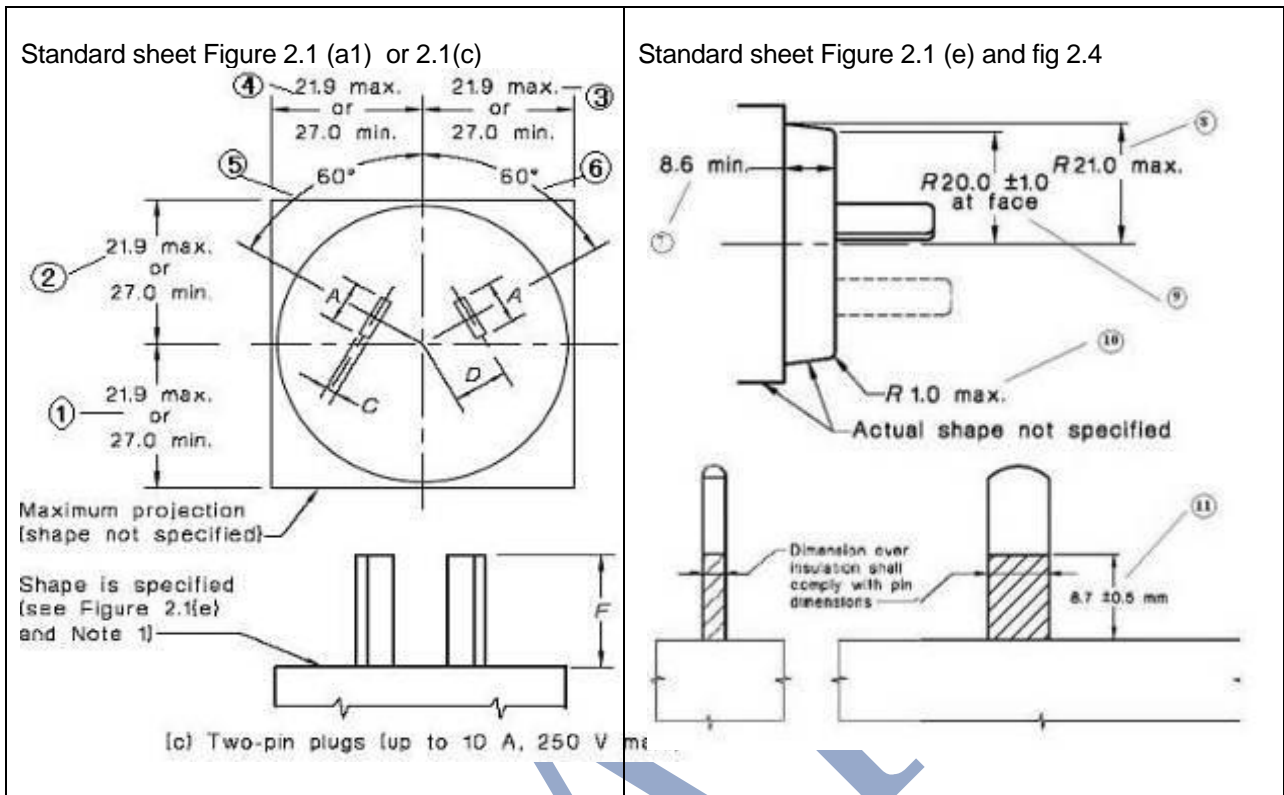


Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
Plug type (h)			
R	0.35±0.05	0.32	-
S	0.9±0.1	0.85	-
T	≥0.60	--	-
V	6	--	P

Fixed plug for 24W series

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Appendix: Plug portion (AS 3112)



Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
A	6.35±0.15	6.38	-
B	6.35±0.15	--	-
C	1.63 ^{+0.15} _{-0.05}	1.60	-
D	7.92	--	P
E	10.31	--	-
F	17.06±0.4	17.08	-
G	19.94±0.8	--	-
1	21.9 max. or 27.0 min.	59.11	-
2	21.9 max. or 27.0 min.	19.92	-
3	21.9 max. or 27.0 min.	27.49	-
4	21.9 max. or 27.0 min.	27.49	-
5	60°	--	P
6	60°	--	P
7	8.6 min.	11.72	-
8	21.0 max.	19.23	-
9	20.0±1.0	19.23	-
10	1.0 max	--	-
11	8.7±0.5	8.53	-

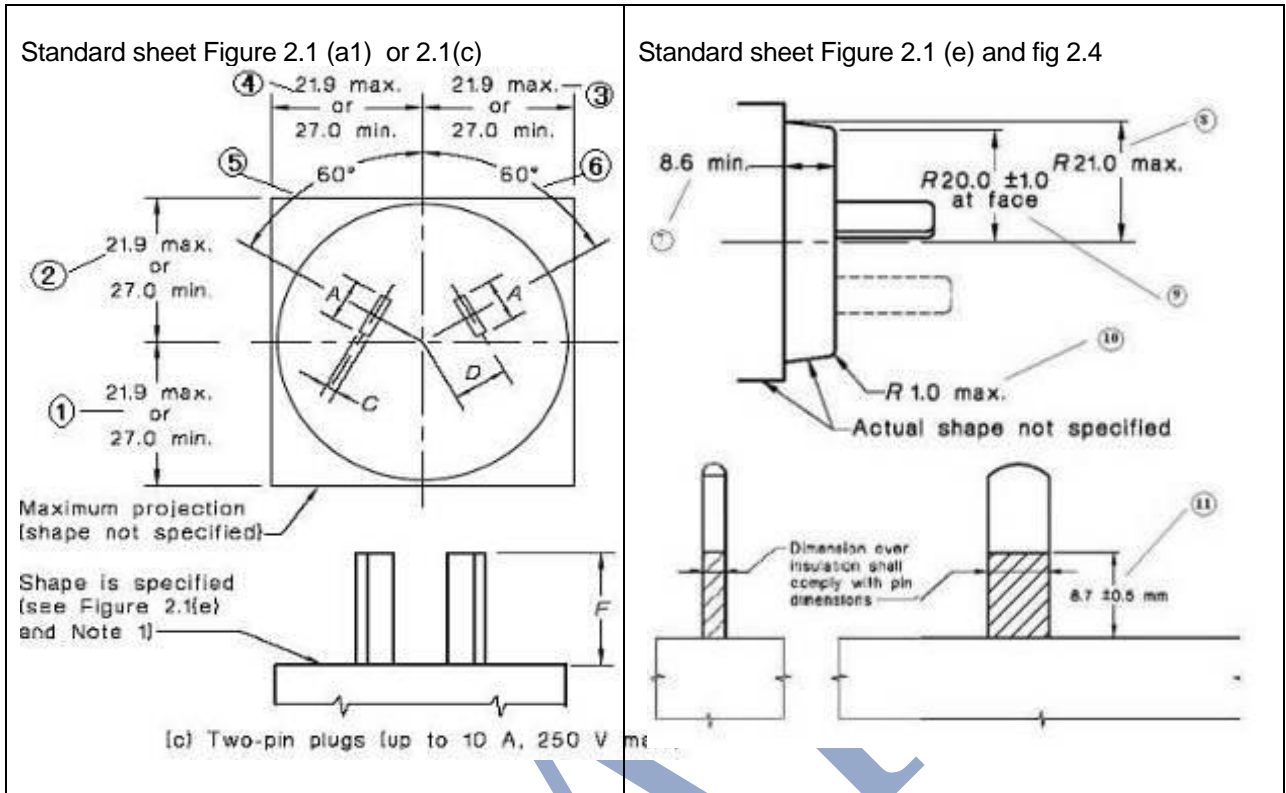
Detachable plug for 24W series

Appendix: Plug portion (AS 3112)

Dimensions checked by gauge and measurement			
Standard sheet Figure 2.1			
<p>(h) Flat pin with radius on the end with side bevels</p> <p>(i) Flat pin square on the end with corner bevels and side bevels</p> <p>(j) The flat pin square on the end with corner bevels and radius on the sides</p>			
Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
Plug type (h)			
R	0.35±0.05	0.38	-
S	0.9±0.1	0.89	-
T	≥0.60	--	-
V	6	--	P

Detachable plug for 24W series

Appendix: Plug portion (AS 3112)



Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
A	6.35±0.15	6.38	-
B	6.35±0.15	--	-
C	1.63 ^{+0.15} _{-0.05}	1.60	-
D	7.92	--	P
E	10.31	--	-
F	17.06±0.4	17.08	-
G	19.94±0.8	--	-
1	21.9 max. or 27.0 min.	80.54	-
2	21.9 max. or 27.0 min.	19.90	-
3	21.9 max. or 27.0 min.	27.90	-
4	21.9 max. or 27.0 min.	27.90	-
5	60°	--	P
6	60°	--	P
7	8.6 min.	11.72	-
8	21.0 max.	19.23	-
9	20.0±1.0	19.23	-
10	1.0 max	--	-
11	8.7±0.5	8.53	-

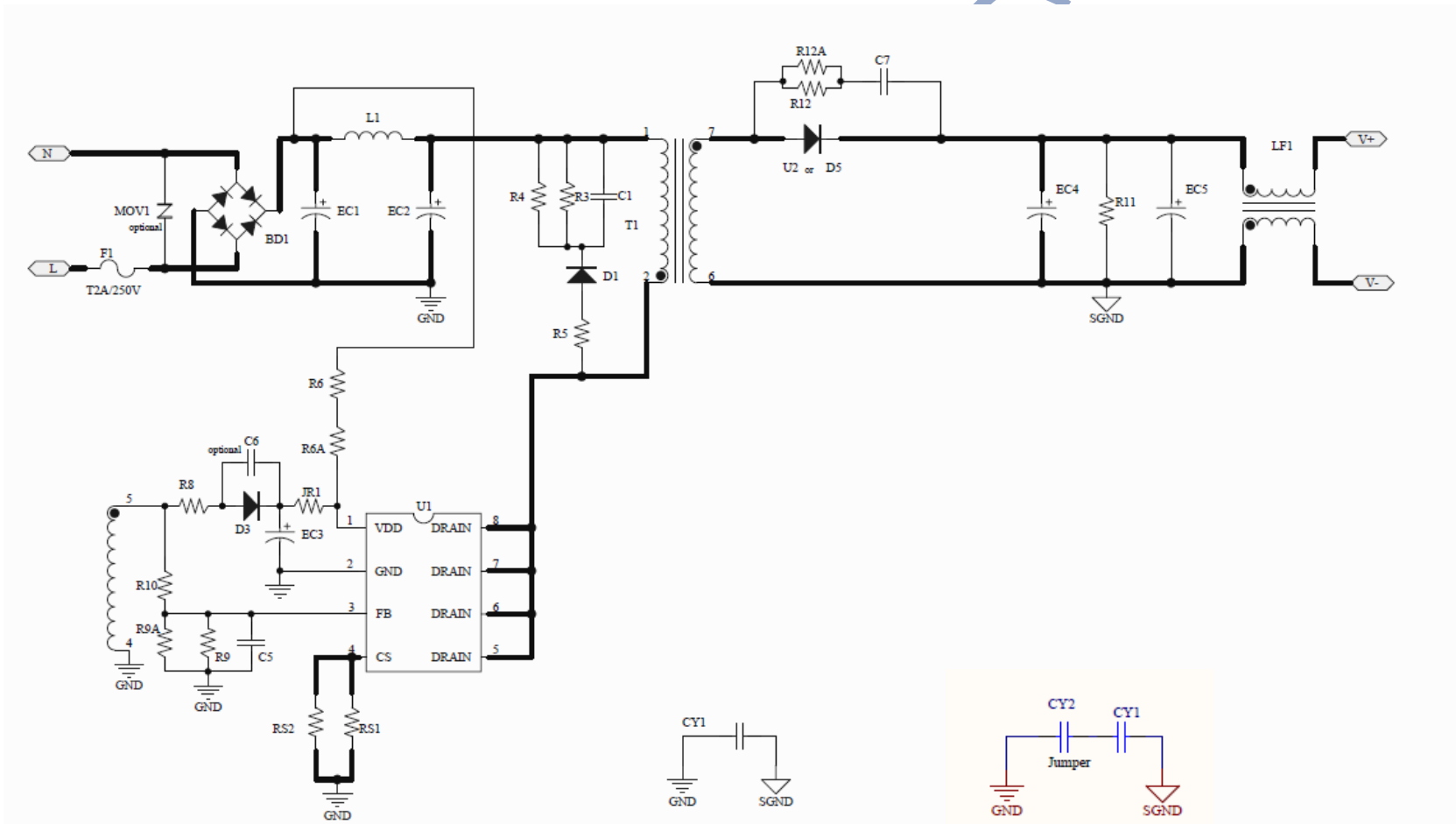
Detachable plug for 36W series

Appendix: Plug portion (AS 3112)

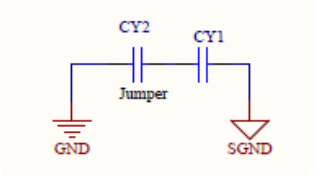
Dimensions checked by gauge and measurement			
Standard sheet Figure 2.1			
<p>(h) Flat pin with radius on the end with side bevels</p> <p>(i) Flat pin square on the end with corner bevels and side bevels</p> <p>(j) The flat pin square on the end with corner bevels and radius on the sides</p>			
Position	Required (mm)	By Measurement (mm)	By the gauges in Figure A1
Plug type (h)			
R	0.35±0.05	0.38	-
S	0.9±0.1	0.89	-
T	≥0.60	--	-
V	6	--	P

Detachable plug for 36W series

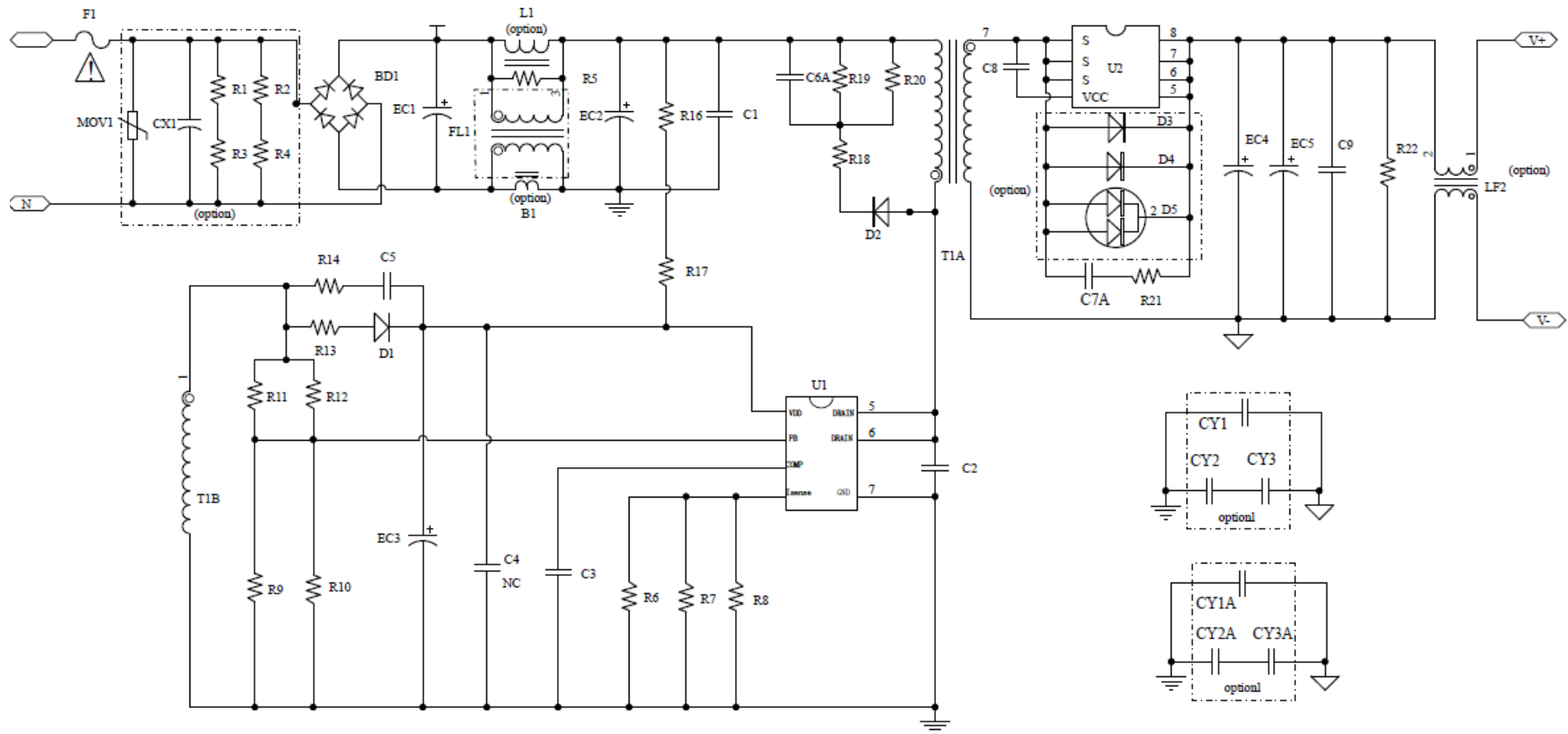
Appendix: Circuit diagram



For models 18W series

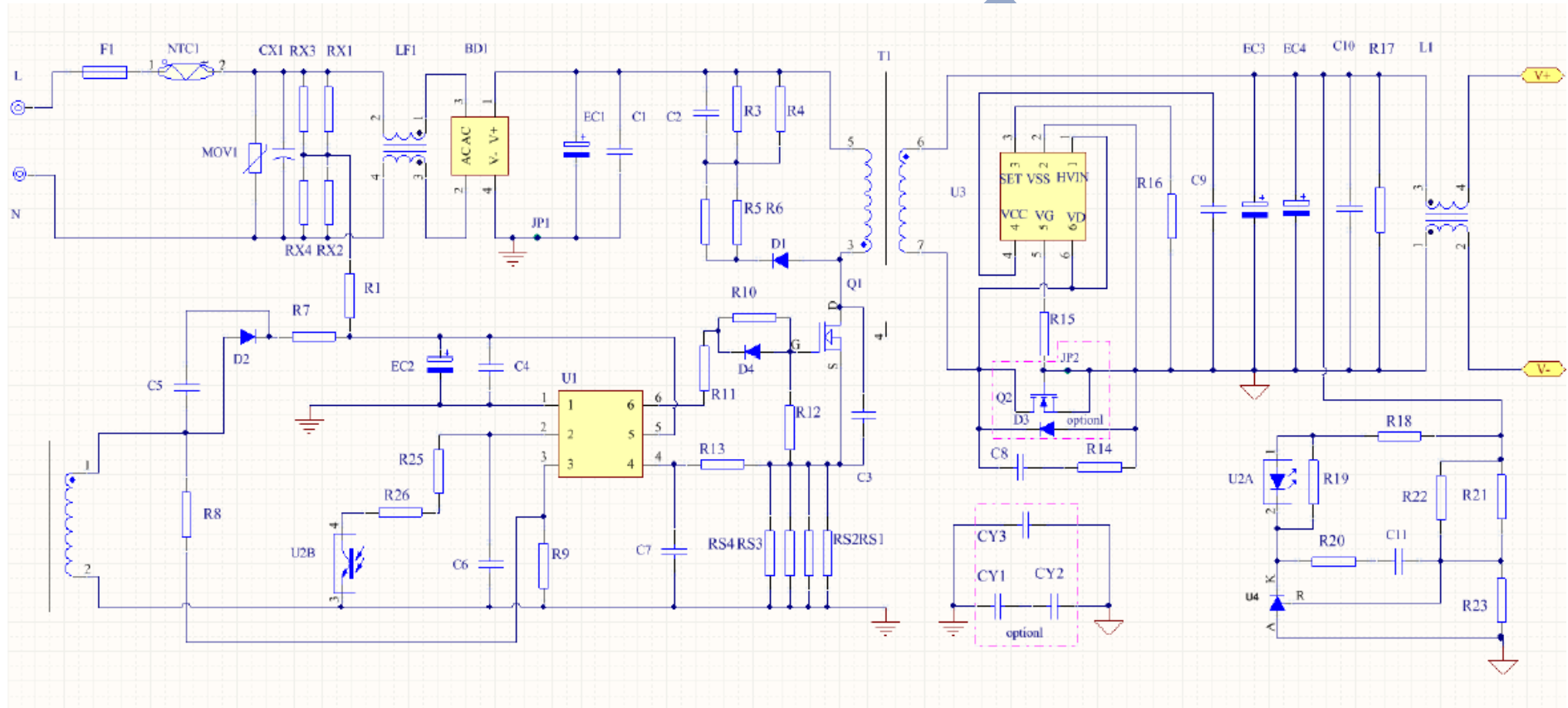


Appendix: Circuit diagram



For models 24W series

Appendix: Circuit diagram

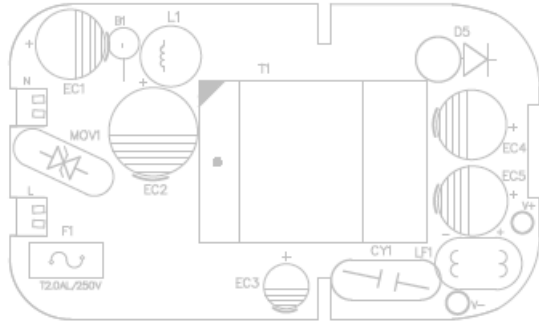


For models 36W series

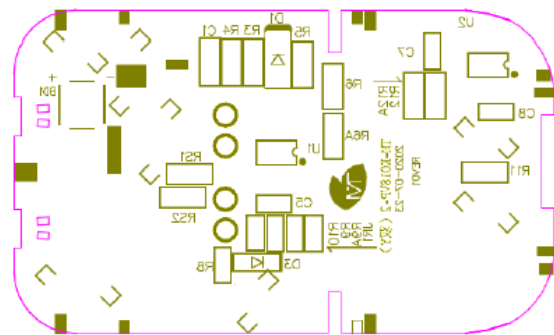
Appendix: PCB layout

For models 18W series

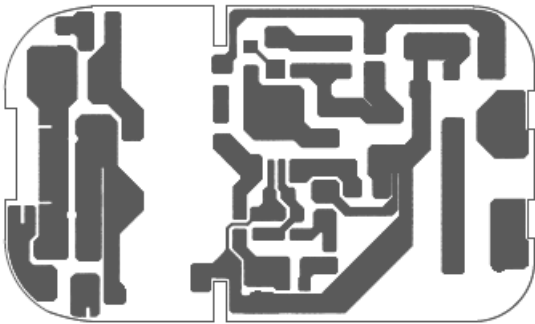
Top Overlay



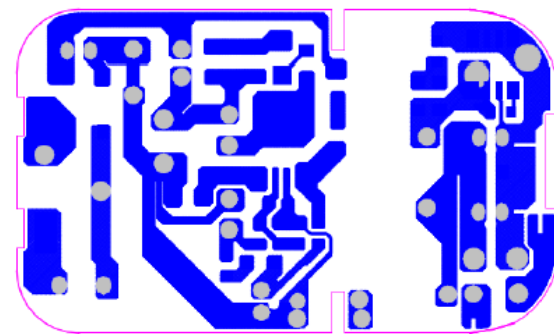
Bottom Overlay



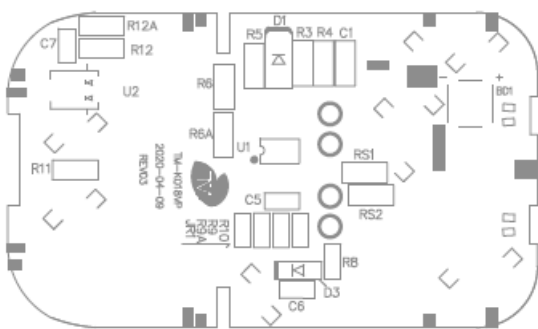
Bottom Layer



Bottom Layer

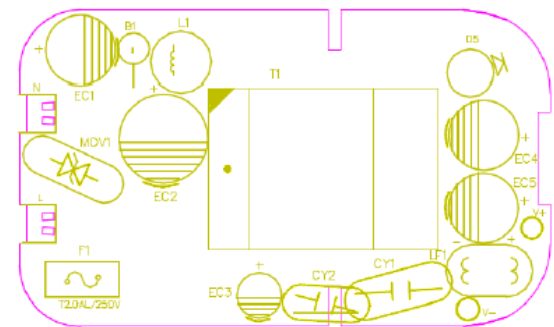


Bottom Overlay



CY1

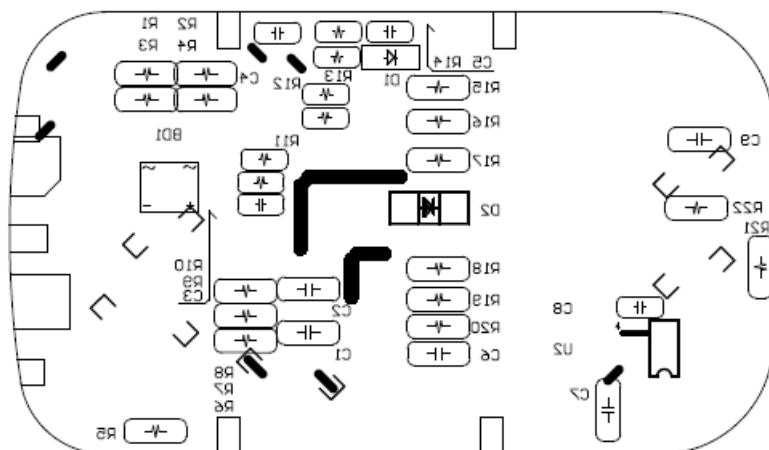
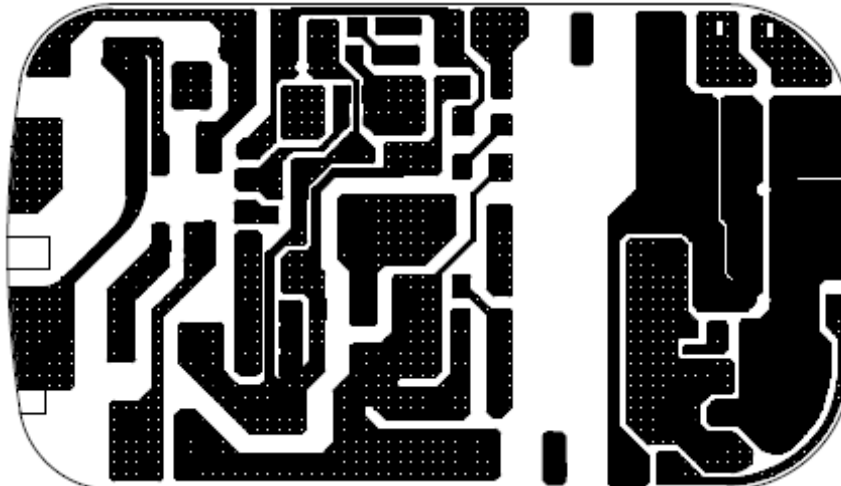
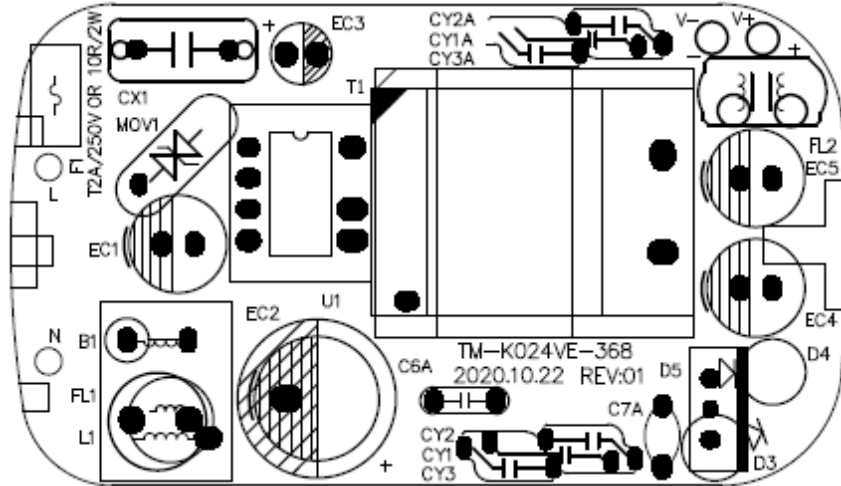
Top Overlay



CY1+CY2

Appendix: PCB layout

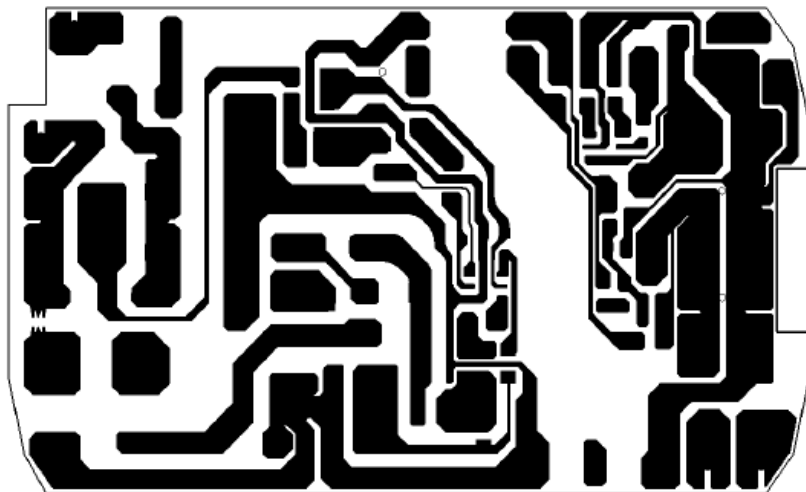
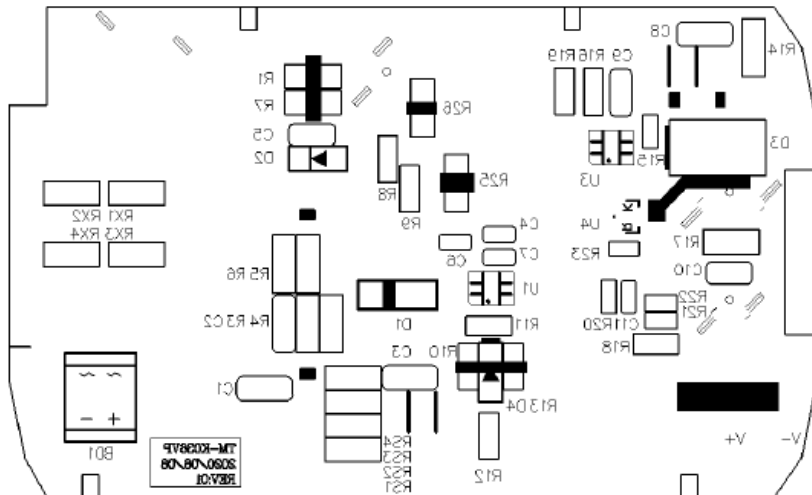
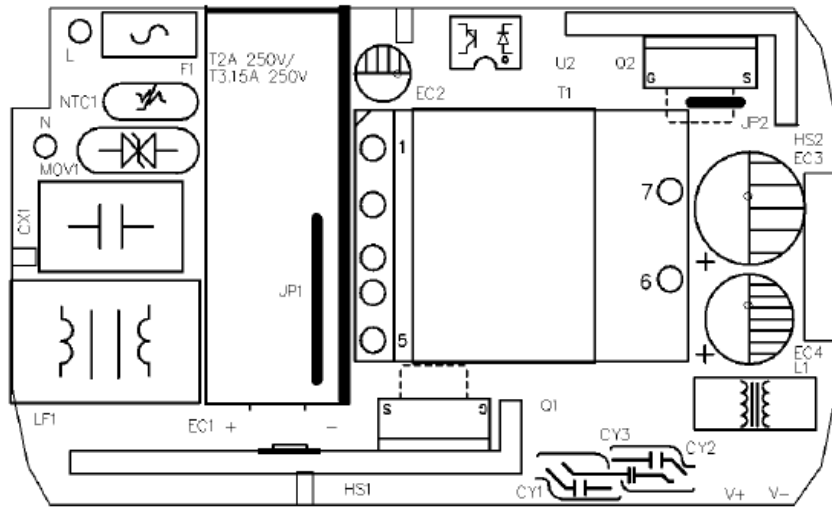
For models 24W series



For models 36W series

TRF No. IEC62368_1C

Appendix: PCB layout



INSTRUCTION MANUAL

Please keep observed safety notes before use

Technical date

Model No. TM-K036VP-00904000PE-02


Rated input voltage: 100-240V~, 50/60Hz, 0.9A

Rated output: 9.0Vdc, 4.0A, 36.0W

General

To comply with the published safety standards, the following must be observed when using this Travel charger.

1. The appliance is used for audio, video and similar electronic apparatus. It is certified according to the relevant safety standards IEC 62638-1 and EN 62368-1.
2. The output power taken from the supply must not exceed the rating given on the switching power supply.
3. The appliance is not intended to be repaired by service personnel in case of failure or component defect (unit can be thrown away).
4. Mains plug is used as the disconnect device, which shall remain readily operable.
5. The appliance shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the appliance.
6. DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

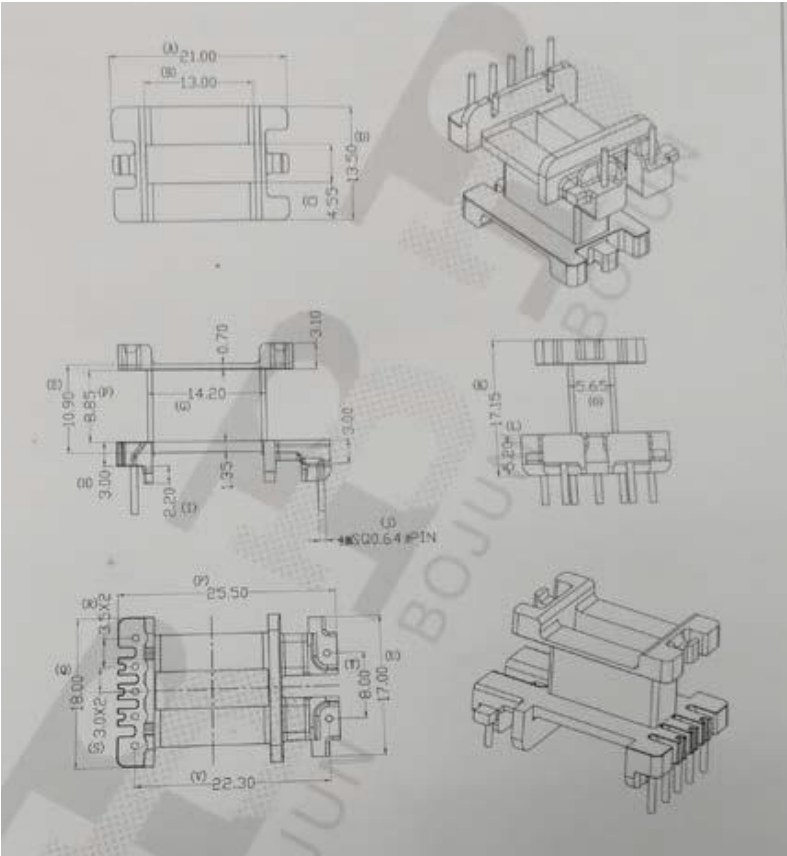
Correct Disposal of this product	
	This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

Manufacturer name: Dongguan Turnmax Electronic Co., Ltd.

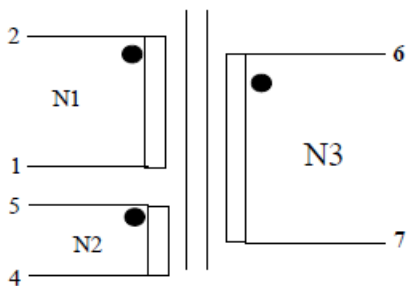
Manufacturer address: Erxiafang Industrial Zone, Xiansha, Gaobu Town, Dongguan, Guangdong Province
523287, P. R. China

Appendix: Transformer specification (T1)

For 18W series transformer model:



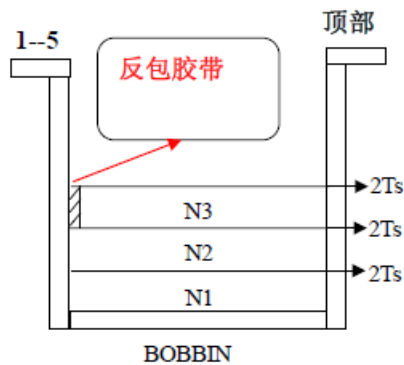
2、SEHEMATIC:



NOTE: ● START

□ TEFLO N TUBE

3、WINDING SEQUENCE:



Appendix: Transformer specification (T1)

Model: TM-K018VP-T1

4、WINDING:

WINDING G	MATERIAL	START-FINIS H	TURNS	胶纸	绕线方向
N1	2UEW0.31*1P	2—1 (密绕)	70Ts	2Ts	PIN 脚朝机 台, 顺时针绕 制
N2	2UEW0.15*1P	5-4 (均匀疏 绕)	12Ts	2Ts	
N3	TEX-E 0.6*2P	6—7 (密绕)	4T□	2Ts	PIN 脚朝外, 顺时针绕制

Model: TM-K018VP-T2

4、WINDING:

WINDING G	MATERIAL	START-FINIS H	TURNS	胶纸	绕线方向
N1	2UEW0.31*1P	2—1 (密绕)	70Ts	2Ts	PIN 脚朝机 台, 顺时针绕 制
N2	2UEW0.15*1P	5-4 (均匀疏 绕)	12Ts	2Ts	
N3	TEX-E 0.5*2P	6—7 (密绕)	5T□	2Ts	PIN 脚朝外, 顺时针绕制

Model: TM-K018VP-T3

4、WINDING:

WINDING G	MATERIAL	START-FINIS H	TURNS	胶纸	绕线方向
N1	2UEW0.31*1P	2—1 (密绕)	70Ts	2Ts	PIN 脚朝机 台, 顺时针绕 制
N2	2UEW0.15*1P	5-4 (均匀疏 绕)	12Ts	2Ts	
N3	TEX-E 0.7*1P	6—7 (密绕)	8T□	2Ts	PIN 脚朝外, 顺时针绕制

Model: TM-K018VP-T4

4、WINDING:

WINDING G	MATERIAL	START-FINIS H	TURNS	胶纸	绕线方向
N1	2UEW0.31*1P	2—1 (密绕)	70Ts	2Ts	PIN 脚朝机 台, 顺时针绕 制
N2	2UEW0.15*1P	5-4 (均匀疏 绕)	12Ts	2Ts	
N3	TEX-E 0.4*1P	6—7 (密绕)	12T□	2Ts	PIN 脚外, 顺 时针绕制

Model: TM-K018VP-T5

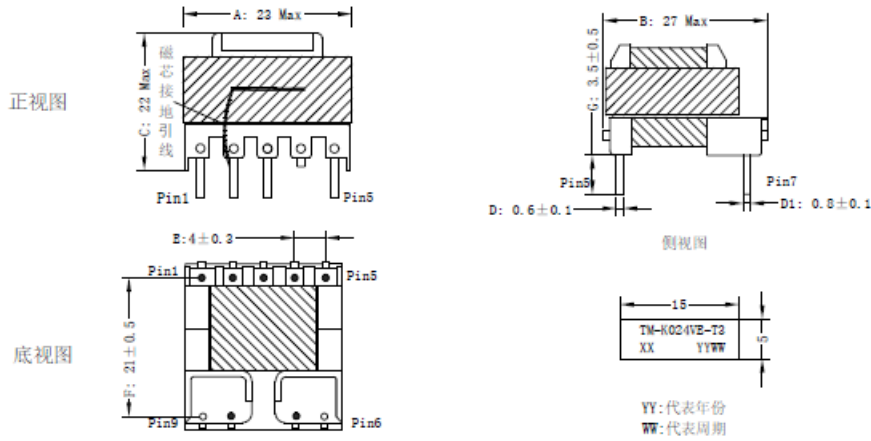
4、WINDING:

WINDING G	MATERIAL	START-FINIS H	TURNS	胶纸	绕线方向
N1	2UEW0.31*1P	2—1 (密绕)	70Ts	2Ts	PIN 脚朝机 台, 顺时针绕 制
N2	2UEW0.15*1P	5-4 (均匀疏 绕)	12Ts	2Ts	
N3	TEX-E 0.35*1P	6—7 (密绕)	14T□	2Ts	PIN 脚外, 顺 时针绕制

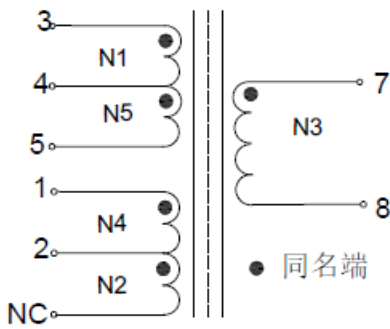
Appendix: Transformer specification (T1)

For 24W series transformer model: TM-K024VE-T3

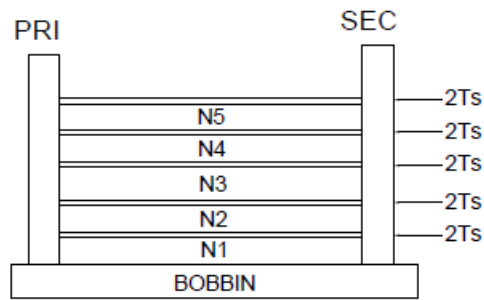
I. Outline Dimension: (Unit: mm)



II、Schematic Diagram:



III、Winding Sequence:



- N5 (4-5) 2UEW ϕ 0.33*1P*29TS 密绕
- N4 (1-2) 2UEW ϕ 0.15*2P*12TS 密绕
- N3 (7-8) TEX-E ϕ 0.55*3P*4TS 密绕
- N2 (2-NC) 2UEW ϕ 0.15*2P*13TS 疏绕一层
- N1 (3-4) 2UEW ϕ 0.33*1P*31TS 密绕

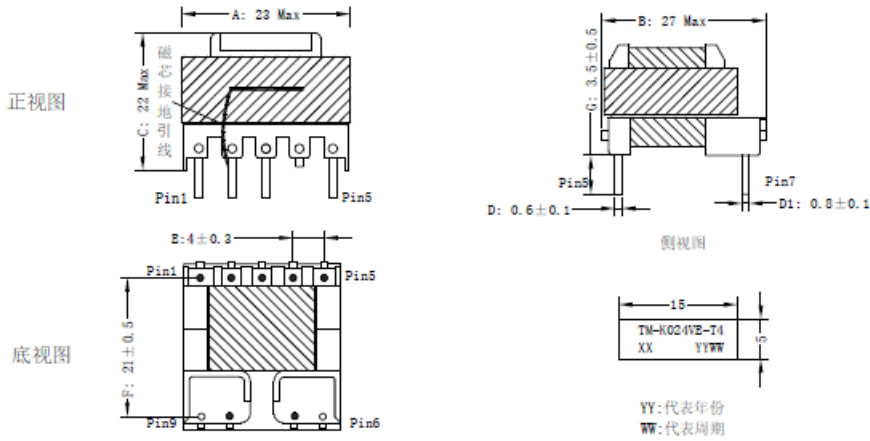
注1: 绕制时Pin1-5脚朝外, 顺时针绕制;

注2: N3绕线前在初级贴一块反折胶带, 待绕完线后反折回线包, 形成反包。

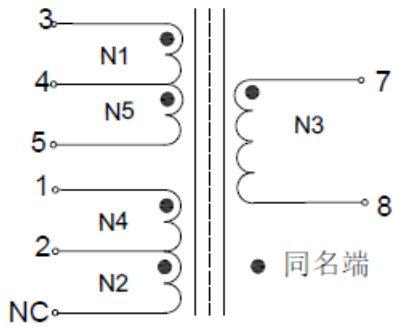
Appendix: Transformer specification (T1)

For 24W series transformer model: TM-K024VE-T4

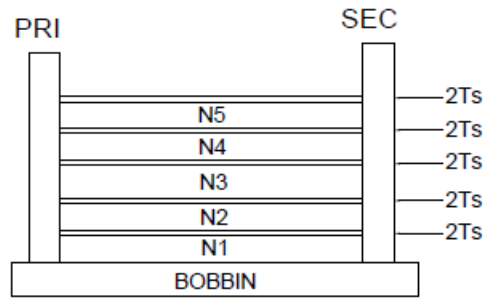
I. Outline Dimension: (Unit: mm)



II、Schematic Diagram:



III、Winding Sequence:



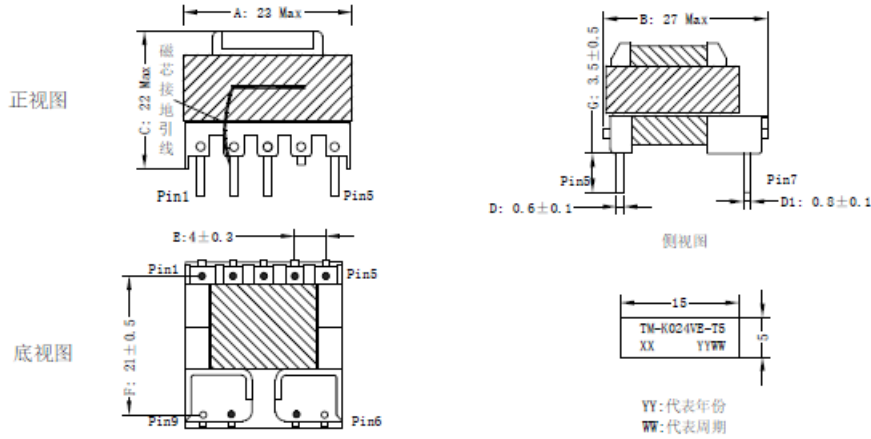
- N5 (4-5) 2UEW ϕ 0.33*1P*29TS 密绕
- N4 (1-2) 2UEW ϕ 0.15*2P*10TS 密绕
- N3 (7-8) TEX-B ϕ 0.6*2P*6TS 密绕
- N2 (2-NC) 2UEW ϕ 0.15*2P*13TS 疏绕一层
- N1 (3-4) 2UEW ϕ 0.33*1P*31TS 密绕

注1: 绕制时Pin1-5脚朝外, 顺时针绕制;
注2: N3绕线前在初级贴一块反折胶带, 待绕完线后反折回线包, 形成反包.

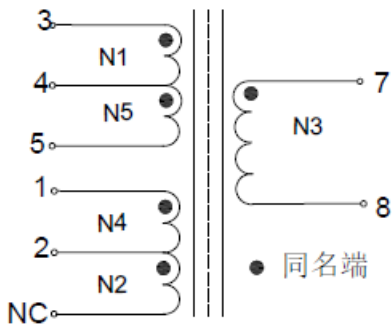
Appendix: Transformer specification (T1)

For 24W series transformer model: TM-K024VE-T5

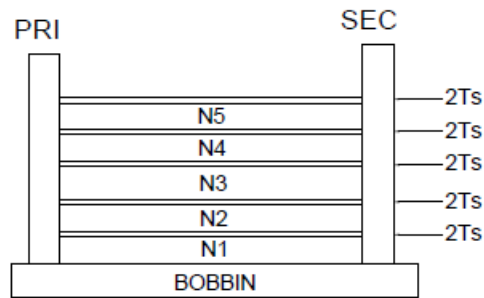
I. Outline Dimension: (Unit: mm)



II. Schematic Diagram:



III. Winding Sequence:



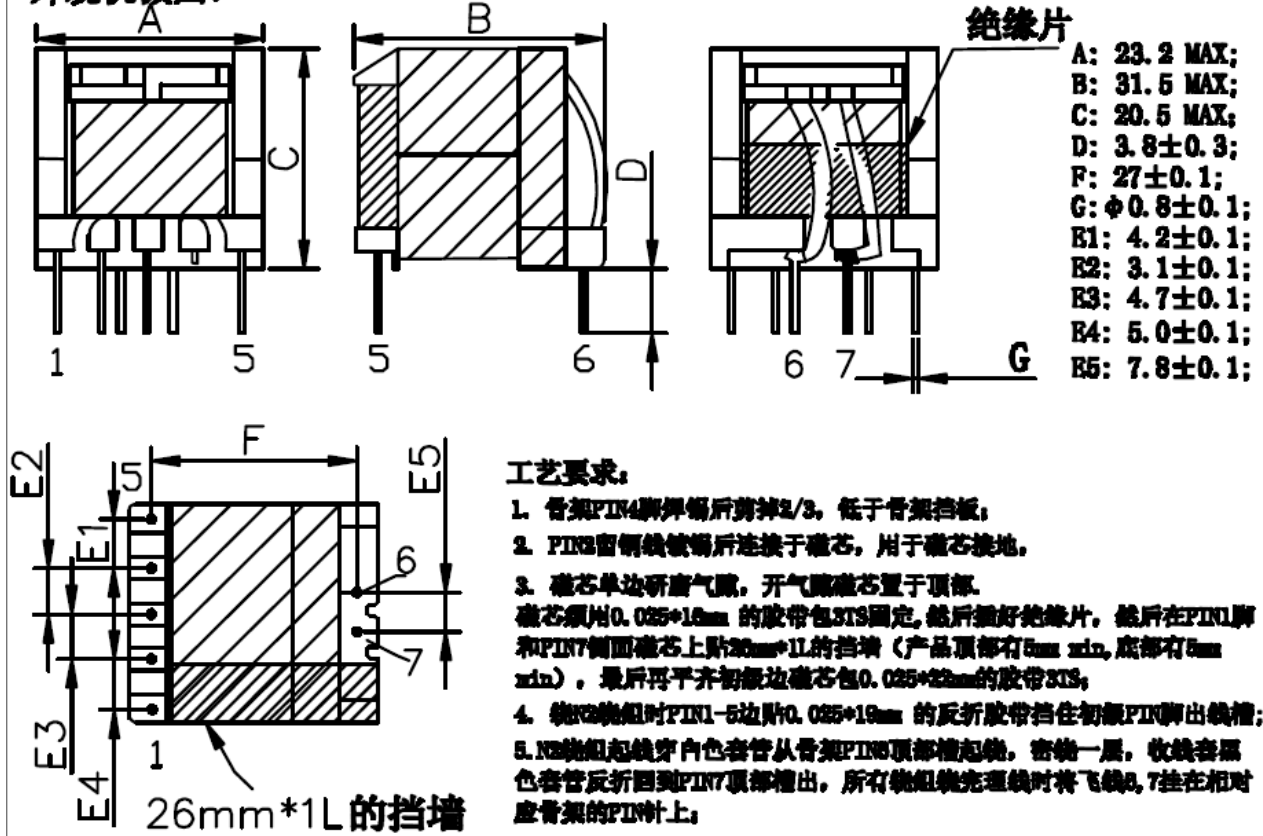
- N5 (4-5) 2UEW $\phi 0.33*1P*29TS$ 密绕
- N4 (1-2) 2UEW $\phi 0.15*2P*10TS$ 密绕
- N3 (7-8) TEX-E $\phi 0.5*1P*14TS$ 密绕
- N2 (2-NC) 2UEW $\phi 0.15*2P*13TS$ 密绕
- N1 (3-4) 2UEW $\phi 0.33*1P*31TS$ 密绕

注1: 绕制时Pin1-5脚朝外, 顺时针绕制;
 注2: N3绕线前在初级贴一块反折散带, 待绕完线后反折回线包, 形成反包.

Appendix: Transformer specification (T1)

For 36W series transformer

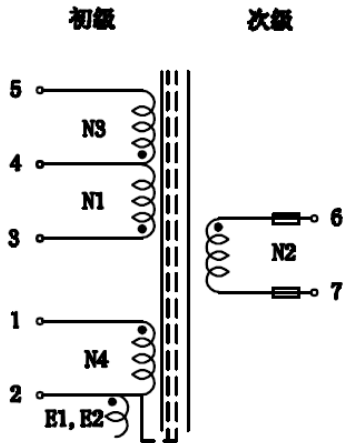
外观机械图:



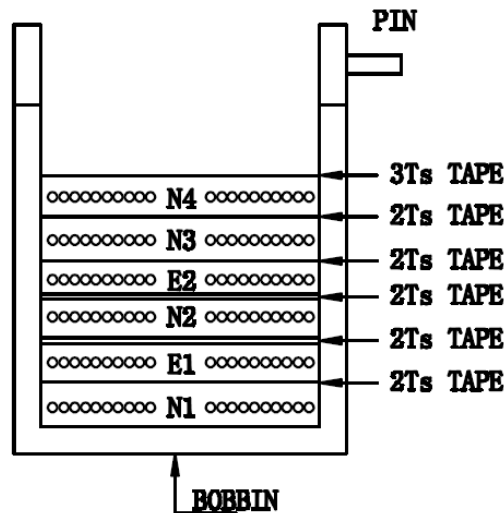
绕制结构图:



电气原理图:



• 表示起线 □ 表示套管



Appendix: Transformer specification (T1)

For 36W series transformer

Model: TM-K036VP-T1

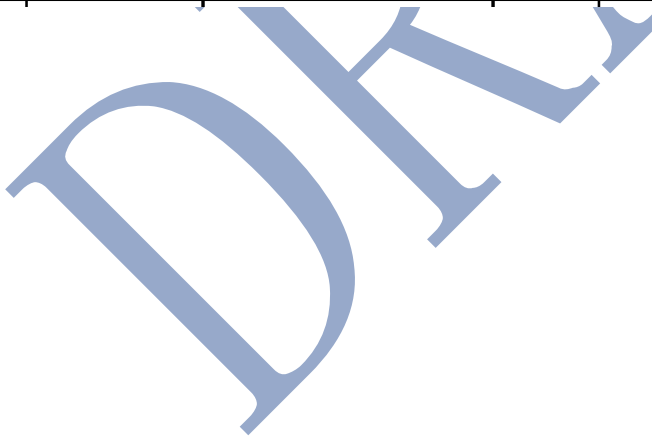
绕线顺序表:							
绕组	起线(S)/收线(F)	线 规	匝数	胶带	层数疏密	套管	备 注
N1	3—4	2UEW-B 0.45mm*1P	34 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
E1	2—NC	2UEW-B 0.15mm*2P	10 Ts	2Ts	均匀疏绕	/	FIN朝右侧顺时针绕; 起收线不交叉
N2	6—7	TEX-E 0.60mm*2P	5 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
E2	2—NC	2UEW-B 0.15mm*2P	10 Ts	2Ts	均匀疏绕	15L REF	FIN朝右侧顺时针绕; 起收线不交叉
N3	4—5	2UEW-B 0.45mm*1P	12 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
N4	1—2	2UEW-B 0.15mm*2P	8 Ts	3Ts	居中密绕	/	FIN朝右侧顺时针绕; 起收线不交叉

Model: TM-K036VP-T2

绕组	起线(S)/收线(F)	线 规	匝数	胶带	层数疏密	套管	备 注
N1	3—4	2UEW-B 0.45mm*1P	34 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
E1	2—NC	2UEW-B 0.15mm*2P	10 Ts	2Ts	均匀疏绕	/	FIN朝右侧顺时针绕; 起收线不交叉
N2	6—7	TEX-E 0.80mm*1P	8 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
E2	2—NC	2UEW-B 0.15mm*2P	10 Ts	2Ts	均匀疏绕	15L REF	FIN朝右侧顺时针绕; 起收线不交叉
N3	4—5	2UEW-B 0.45mm*1P	12 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
N4	1—2	2UEW-B 0.15mm*2P	8 Ts	3Ts	居中密绕	/	FIN朝右侧顺时针绕; 起收线不交叉

Model: TM-K036VP-T3

绕线顺序表:							
绕组	起线(S)/收线(F)	线 规	匝数	胶带	层数疏密	套管	备 注
N1	3—4	2UEW-B 0.45mm*1P	34 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
E1	2—NC	2UEW-B 0.15mm*2P	10 Ts	2Ts	均匀疏绕	/	FIN朝右侧顺时针绕; 起收线不交叉
N2	6—7	TEX-E 0.60mm*1P	10 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
E2	2—NC	2UEW-B 0.15mm*2P	10 Ts	2Ts	均匀疏绕	15L REF	FIN朝右侧顺时针绕; 起收线不交叉
N3	4—5	2UEW-B 0.45mm*1P	12 Ts	2Ts	密绕	/	FIN朝右侧顺时针绕; 起收线不交叉
N4	1—2	2UEW-B 0.15mm*2P	8 Ts	3Ts	居中密绕	/	FIN朝右侧顺时针绕; 起收线不交叉



Appendix: Photos



External view of the appliance for models 18W series with fixed plug and output cord output



External view of the appliance for models 18W series with fixed plug and output cord output

Appendix: Photos



External view of the appliance for models 18W series with Detachable plug



External view of the appliance for models 18W series with Detachable plug

Appendix: Photos



External view of the appliance for models 18W series with SAA plug and output cord output



External view of the appliance for models 18W series with fixed plug and output cord output

Appendix: Photos



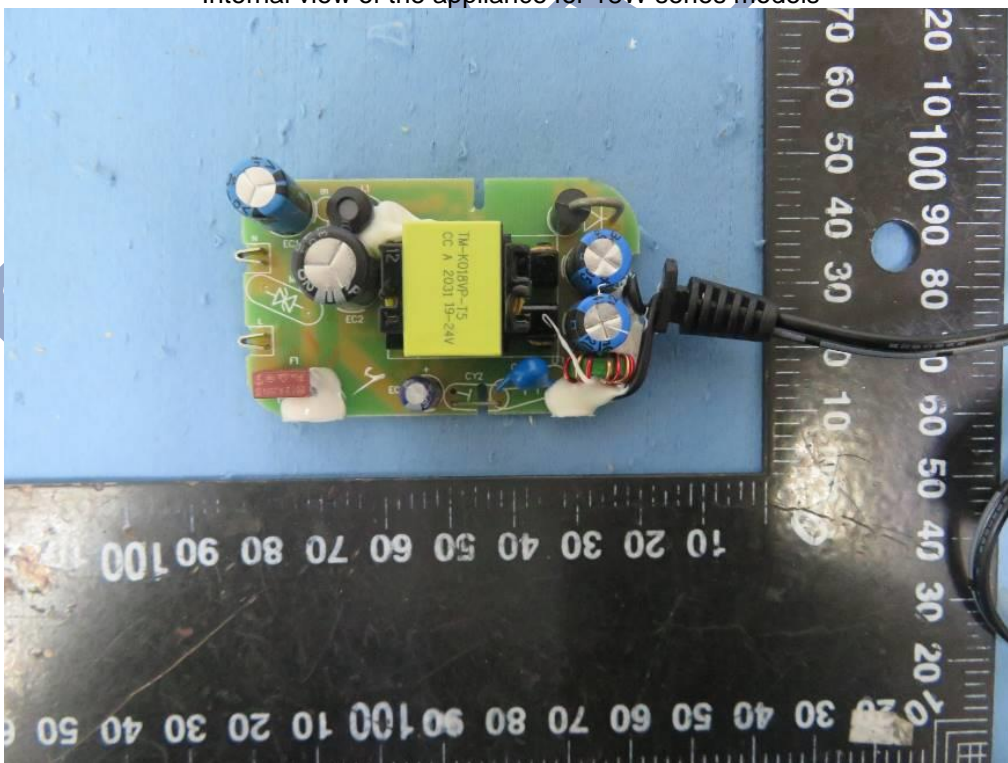
External view of the appliance for models 18W series with fixed plug and output cord output



Internal view of the appliance for 18W series models

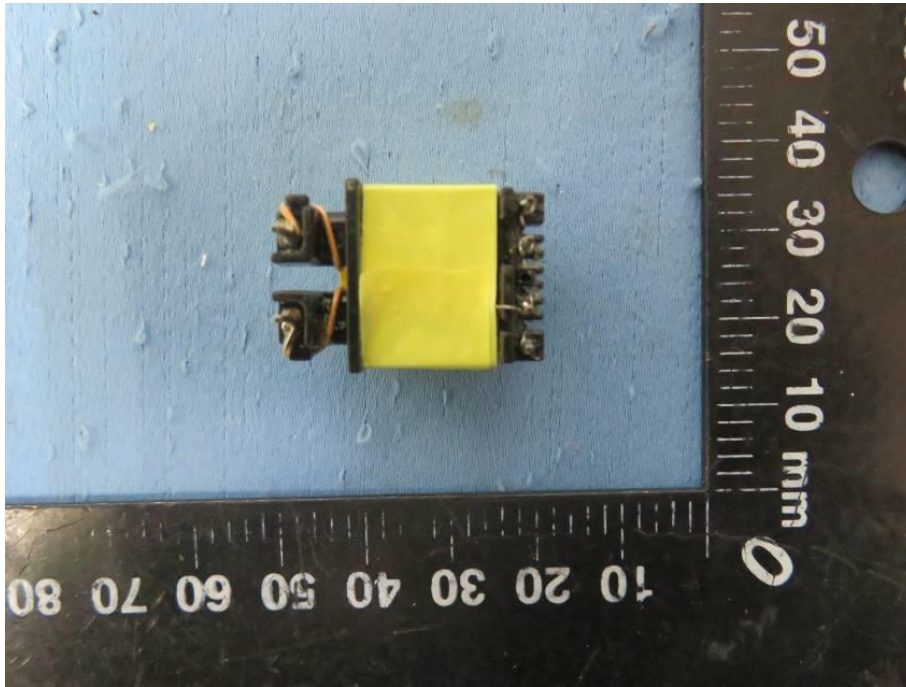


Internal view of the appliance for 18W series models



PCB view of the appliance for 18W series models

Appendix: Photos

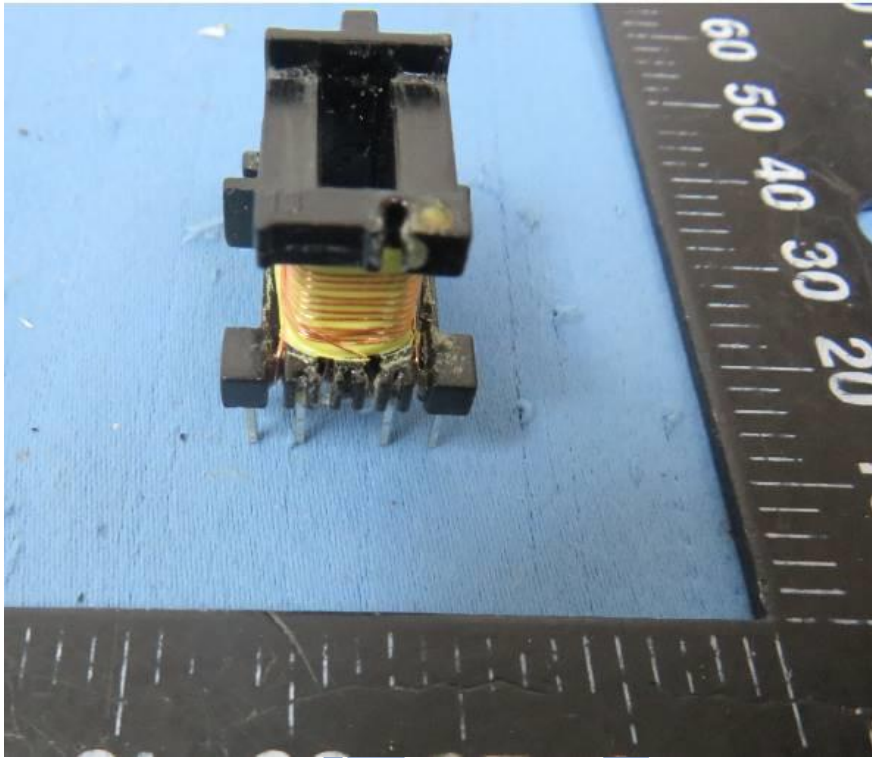


Transformer for 18W series models

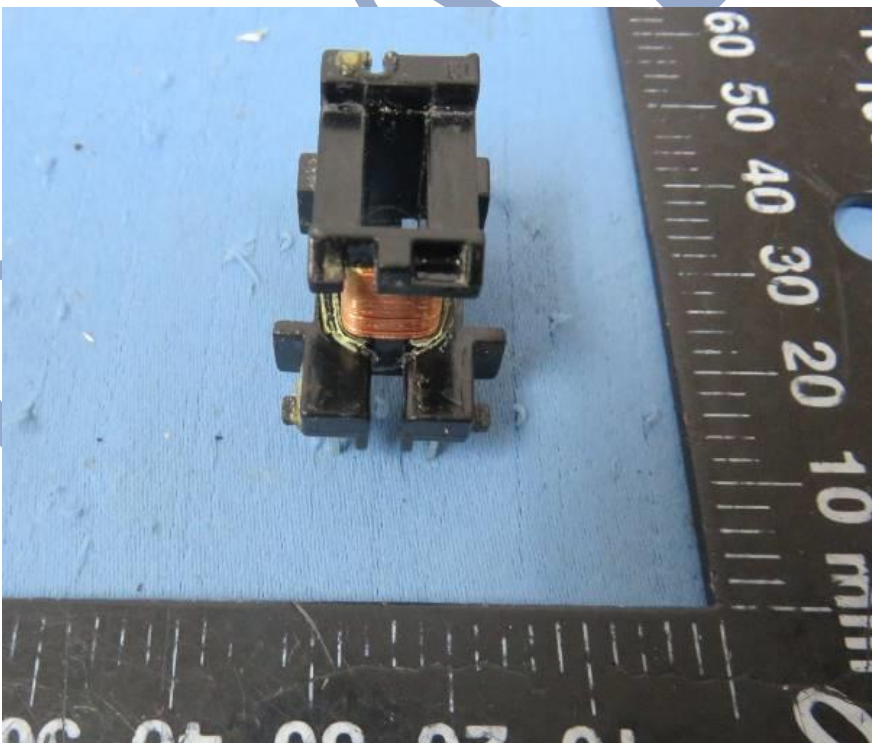


Transformer for 18W series models

Appendix: Photos



Transformer for 18W series models



Transformer for 18W series models

Appendix: Photos



PCB view of the appliance for 24W series models with output cord



External view of the appliance for 24W series models with output cord

Appendix: Photos



External view of the appliance for models 24W series with Detachable plug



External view of the appliance for models 24W series with Detachable plug

Appendix: Photos



External view of the appliance for 24W series models with output cord



External view of the appliance for 24W series models with output cord

Appendix: Photos

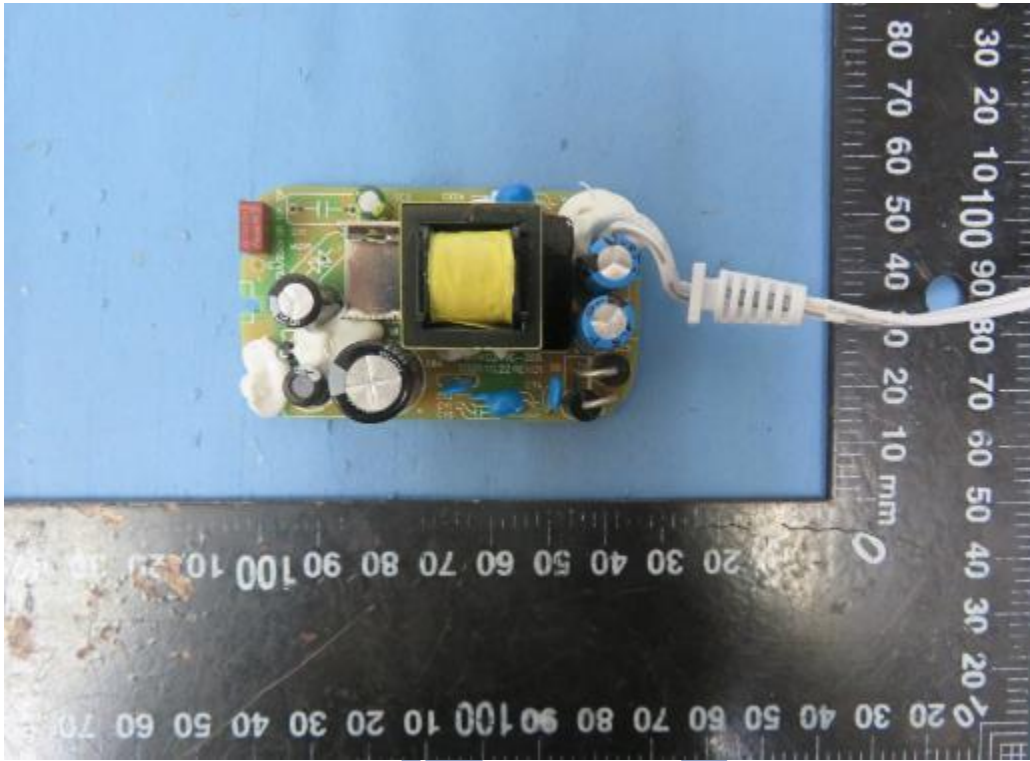


Internal view of the appliance for models 24W series



Internal view of the appliance for models 24W series

Appendix: Photos

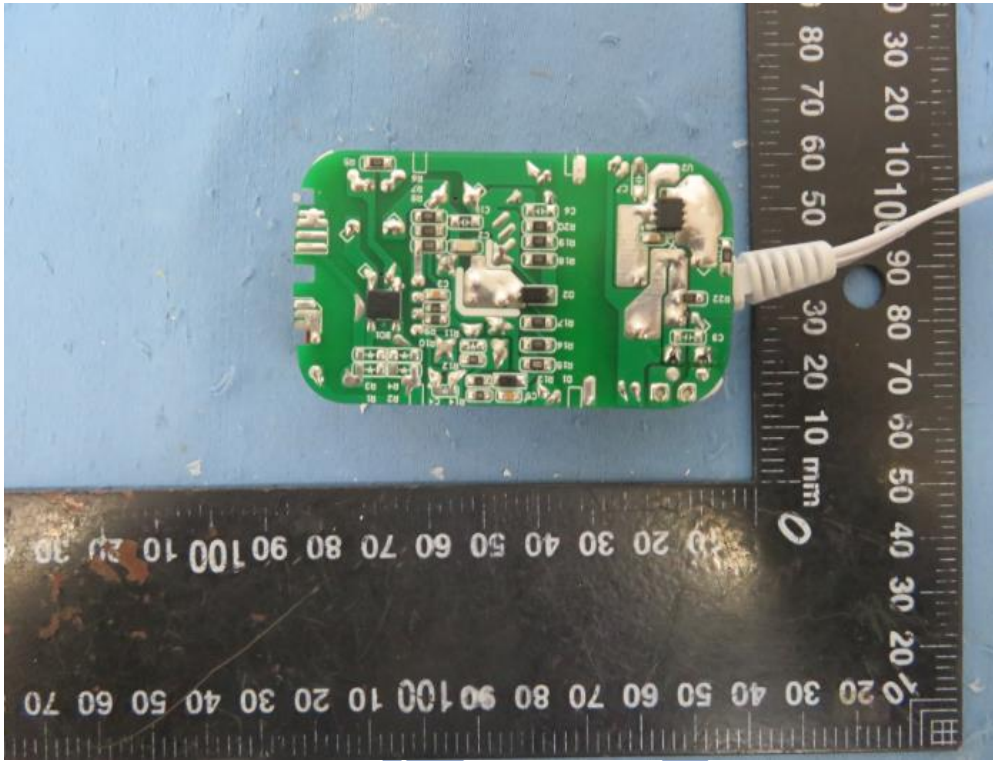


PCB view of the appliance for 24W series models

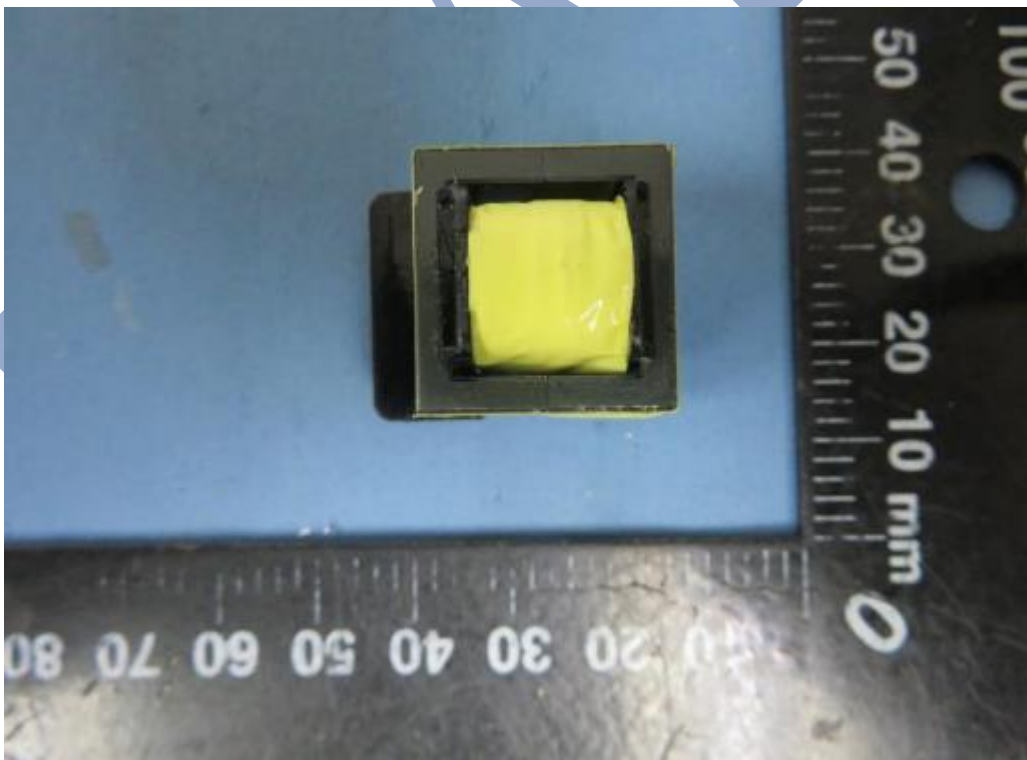


PCB view of the appliance for 24W series models

Appendix: Photos

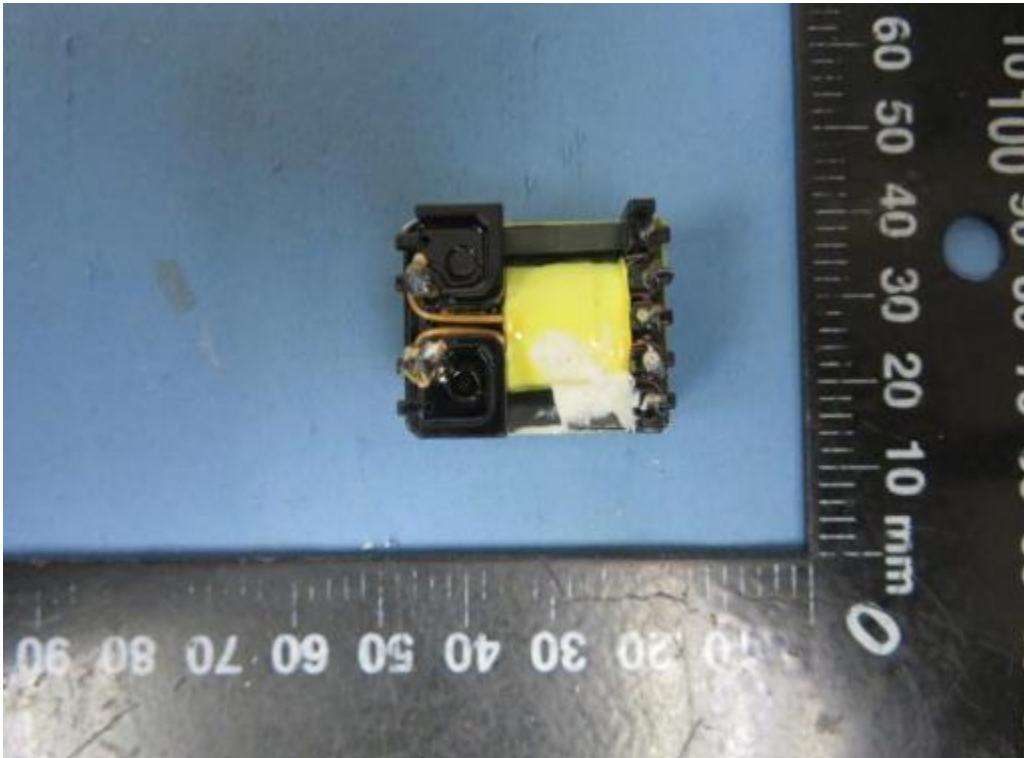


PCB view of the appliance for 24W series models

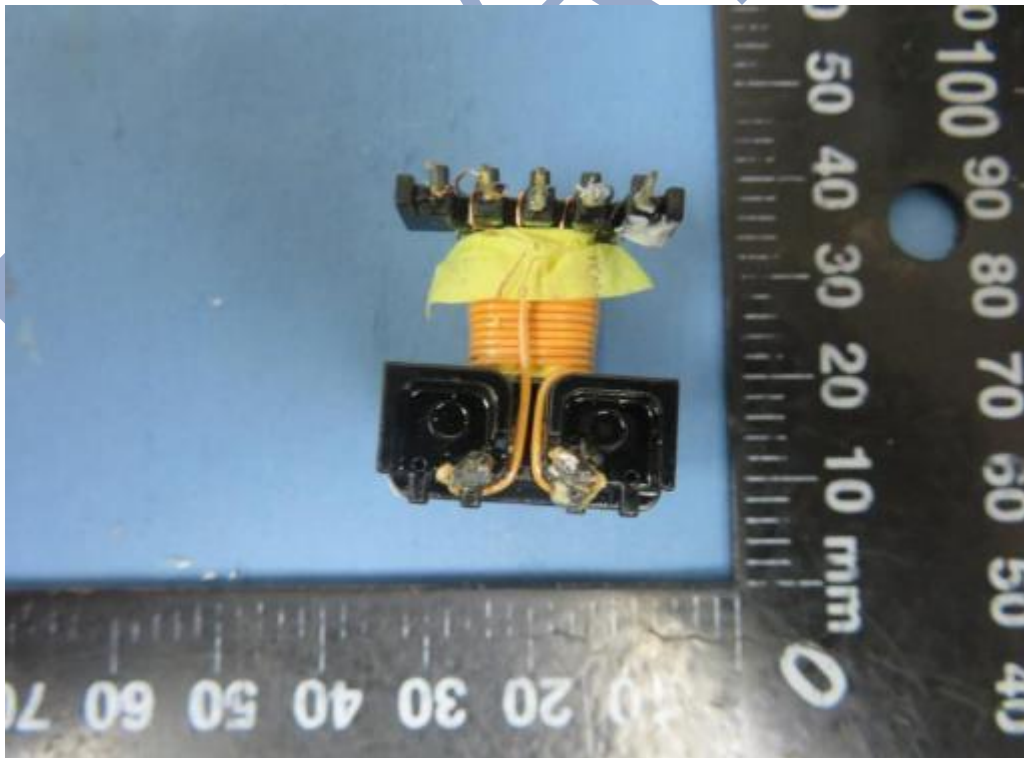


Transformer for 24W series models

Appendix: Photos



Transformer for 24W series models



Transformer for 24W series models



PCB view of the appliance for 36W series models with output cord



External view of the appliance for 36W series models with output cord

Appendix: Photos



External view of the appliance for models 36W series with Detachable plug



External view of the appliance for models 36W series with Detachable plug

Appendix: Photos



External view of the appliance for 36W series models with output cord



External view of the appliance for 36W series models with output cord

Appendix: Photos



External view of the appliance for 36W series models with output cord

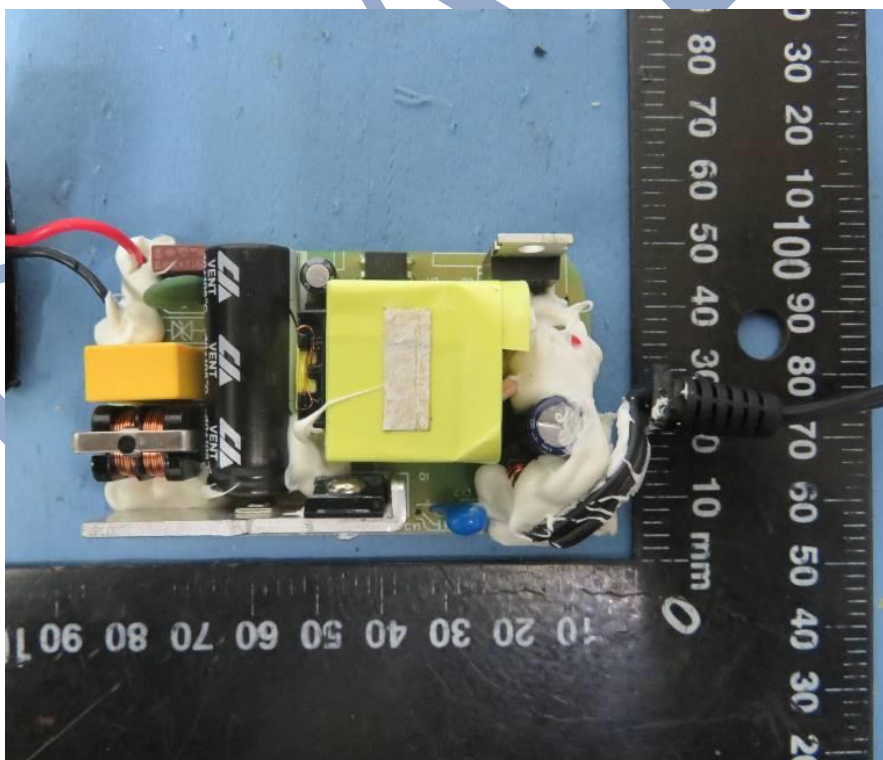


PCB view of the appliance for 36W series models

Appendix: Photos

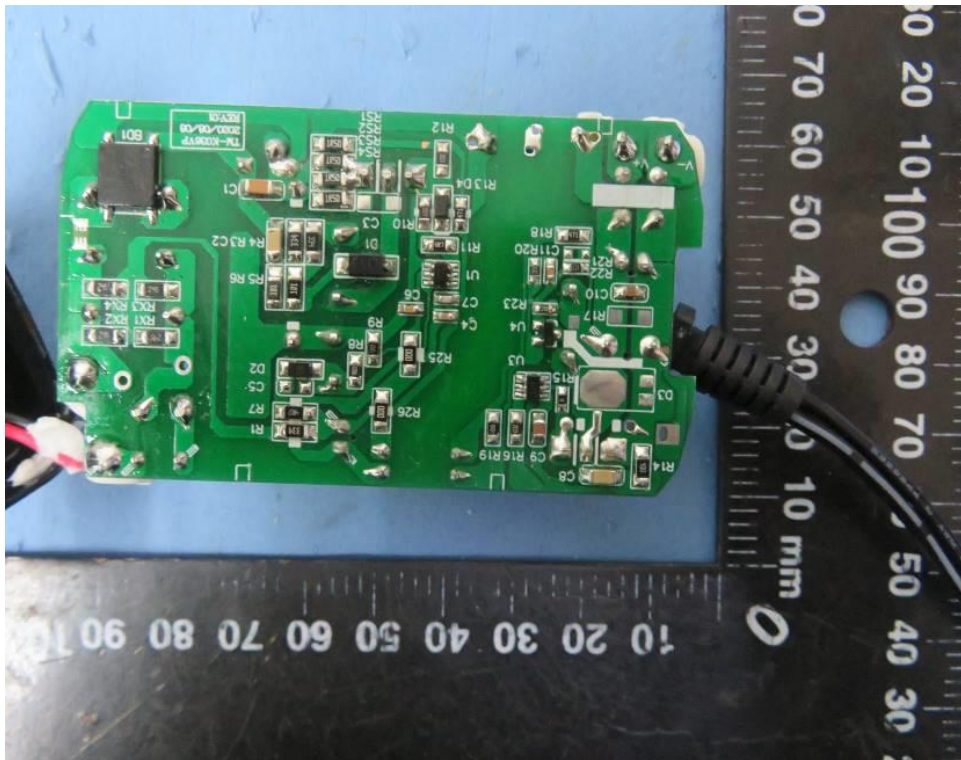


PCB view of the appliance for 36W series models

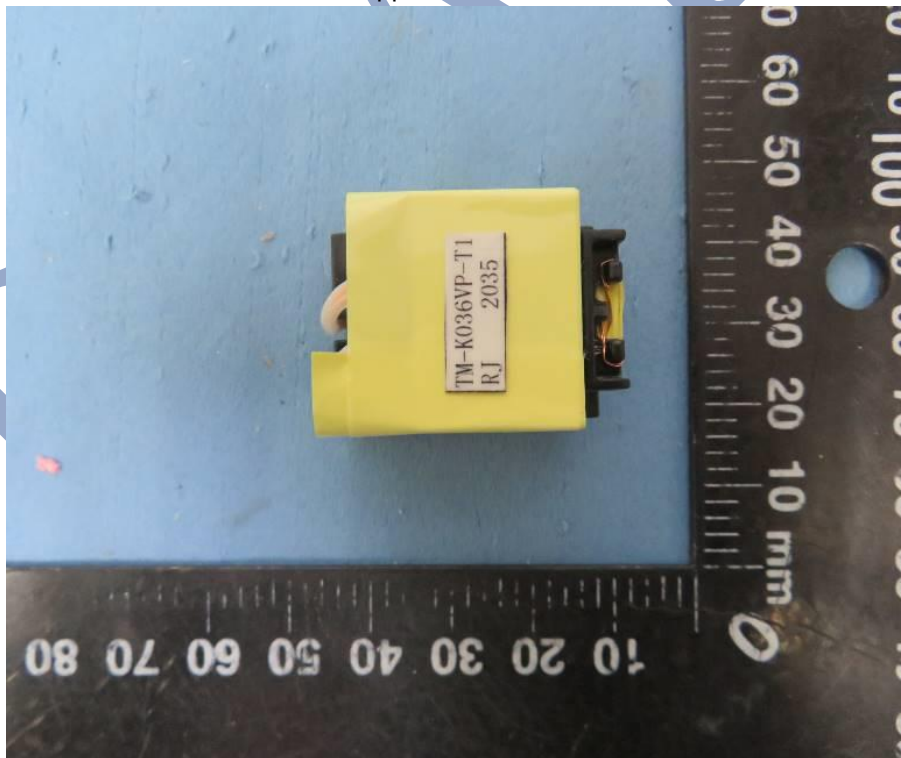


PCB view of the appliance for 36W series models

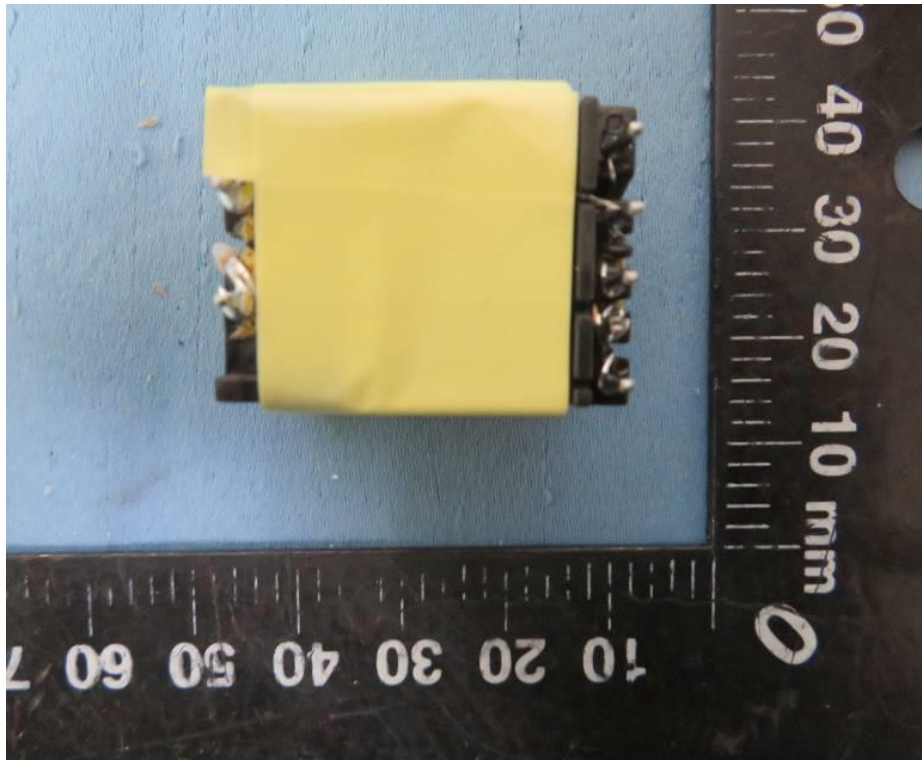
Appendix: Photos



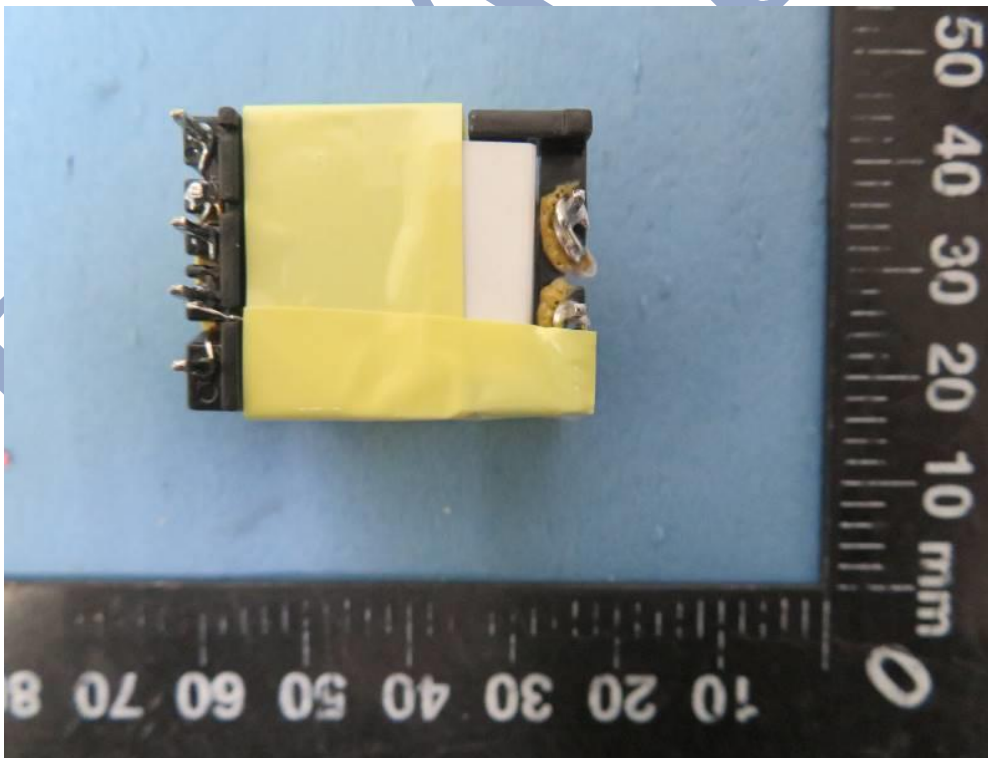
PCB view of the appliance for 36W series models



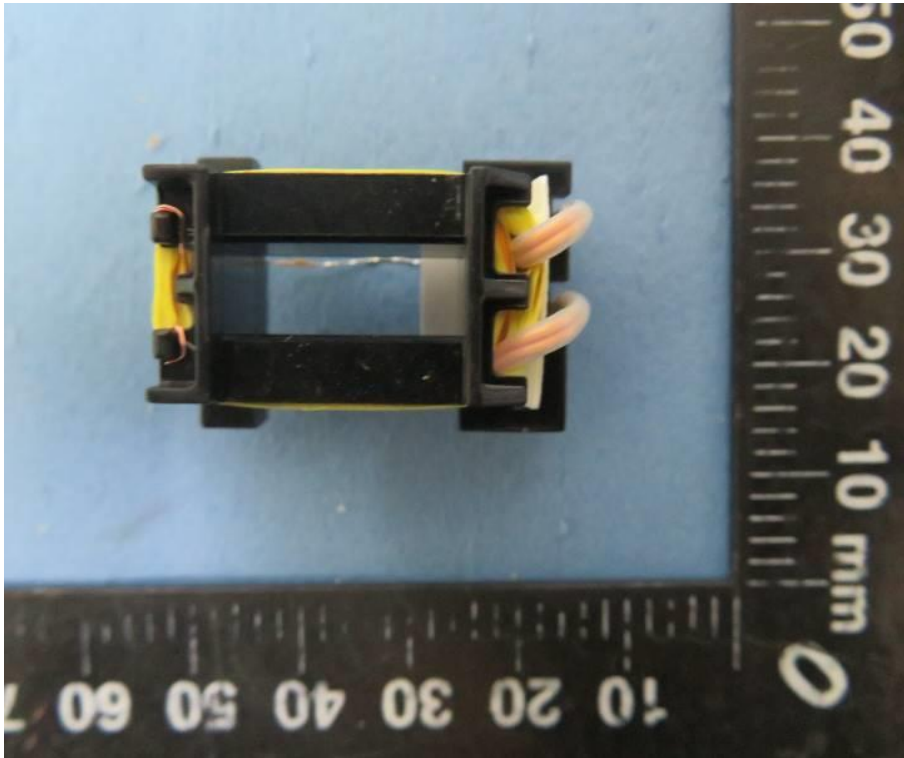
Transformer for 36W series models



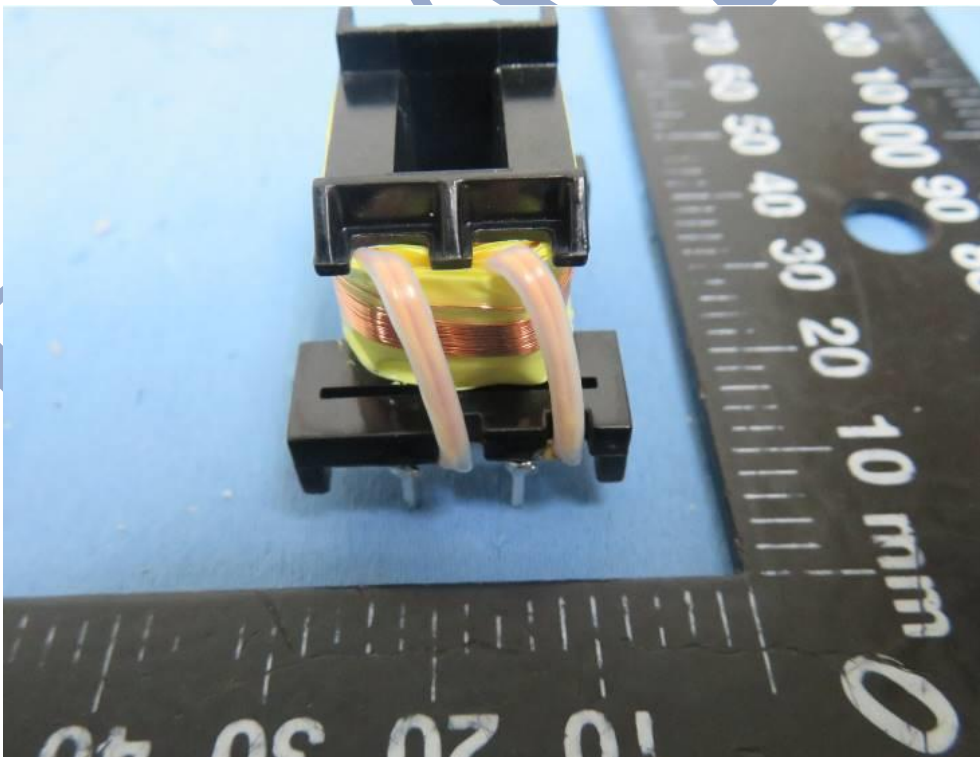
Transformer for 36W series models



Transformer for 36W series models

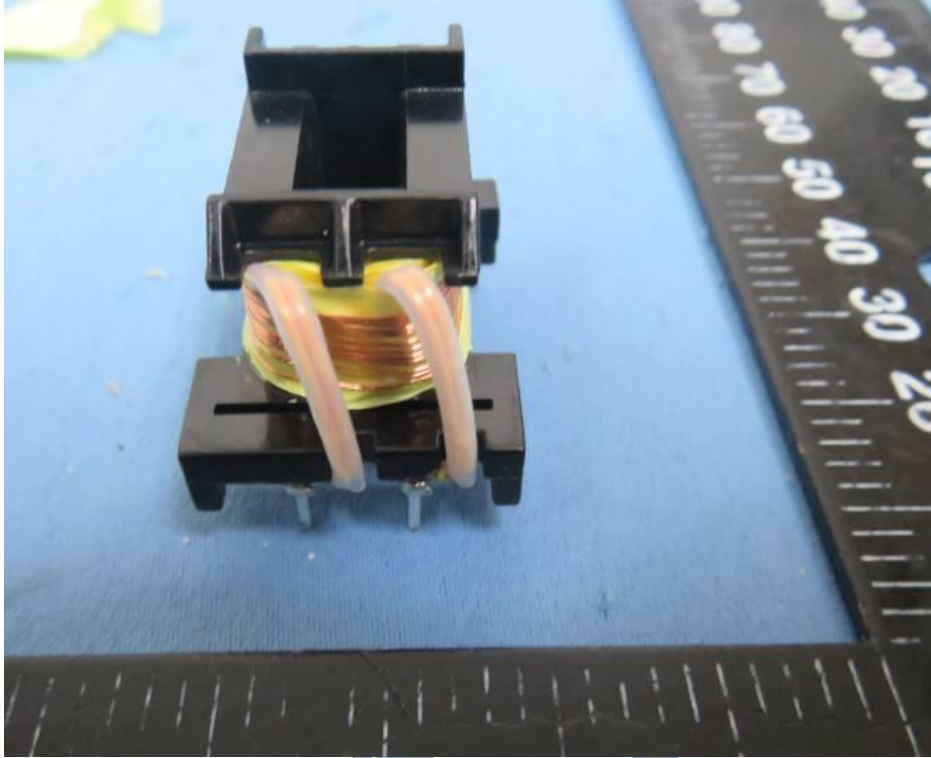


Transformer for 36W series models

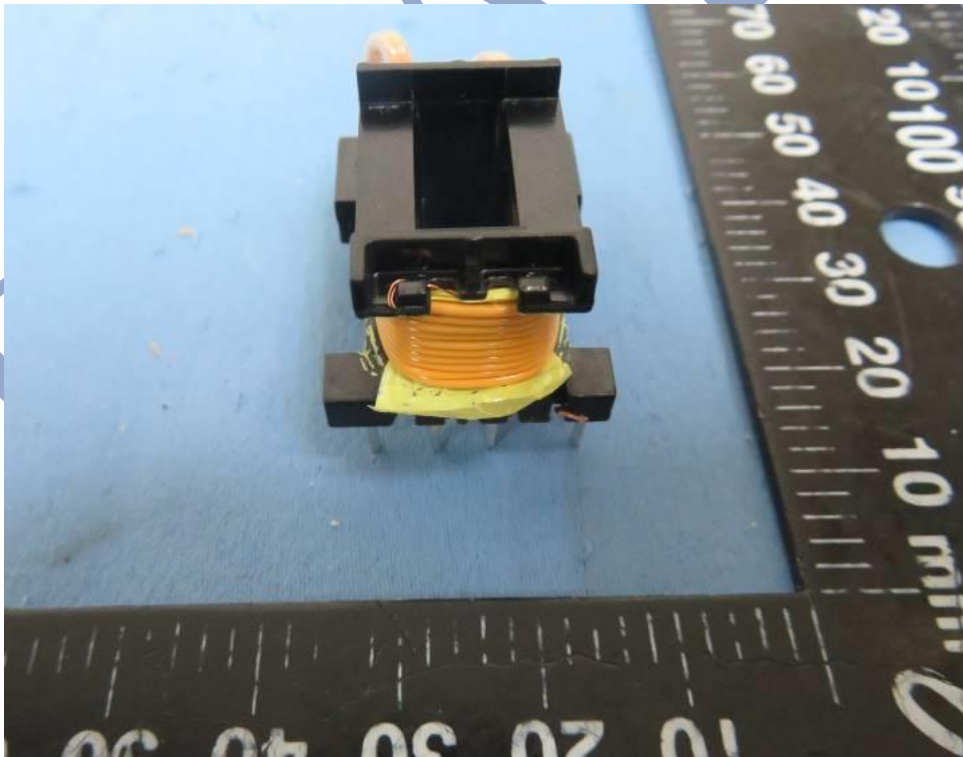


Transformer for 12W series models

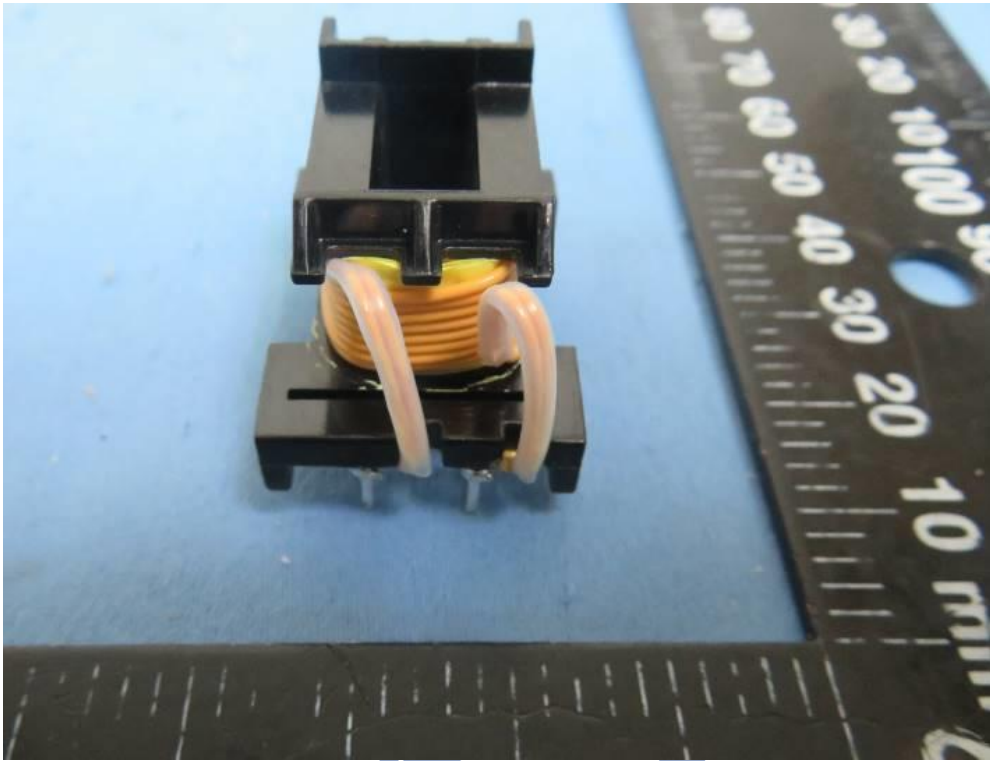
Appendix: Photos



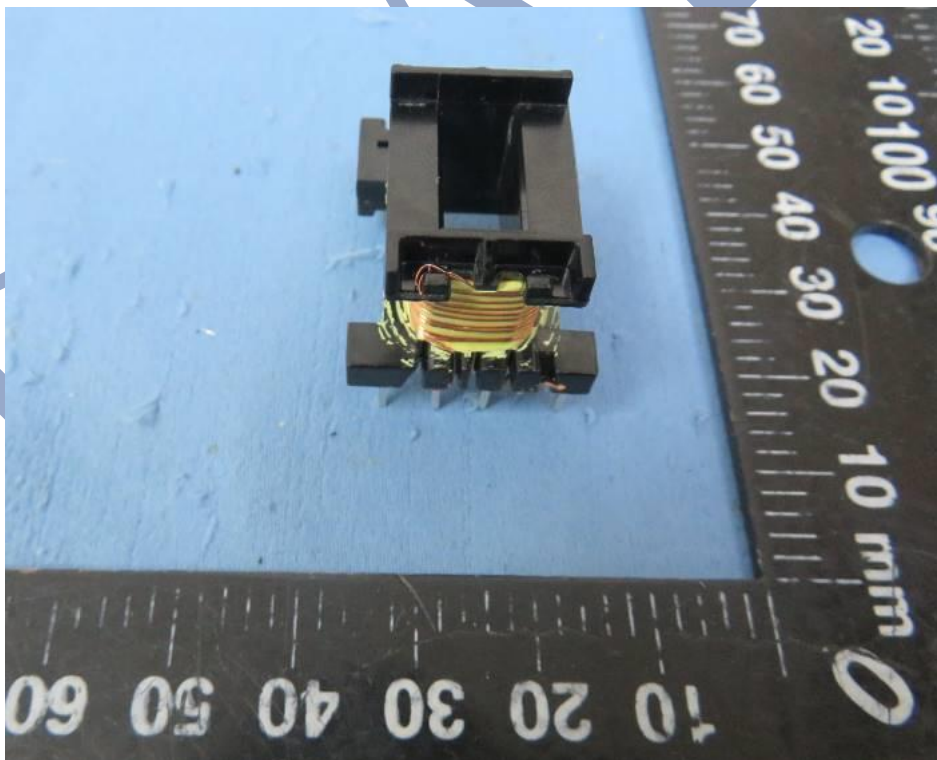
Transformer for 36W series models



Transformer for 36W series models

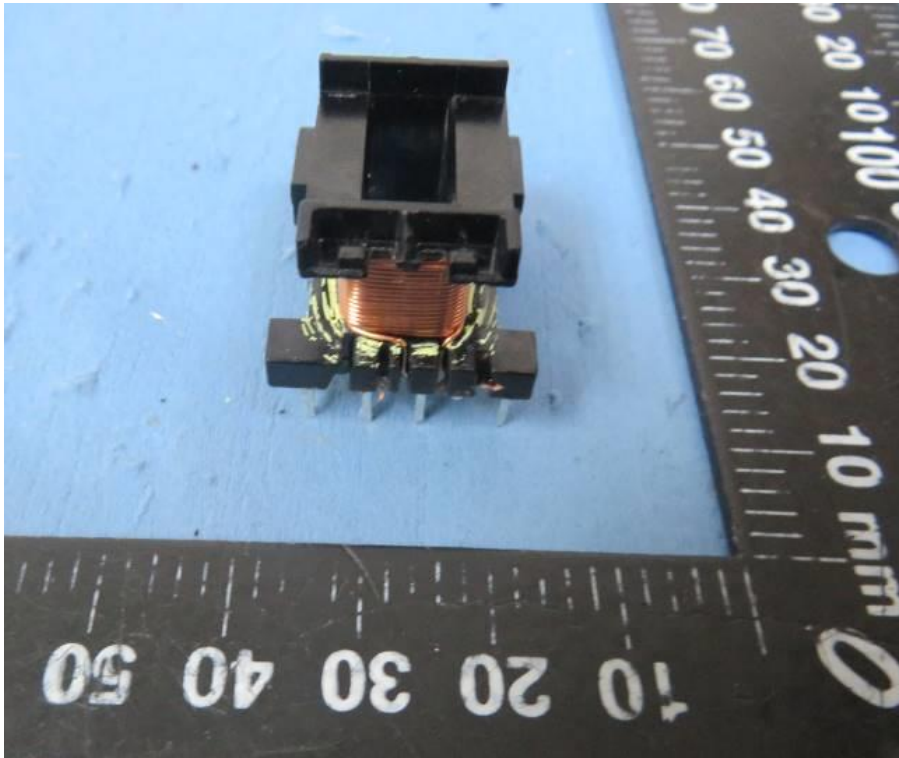


Transformer for 36W series models

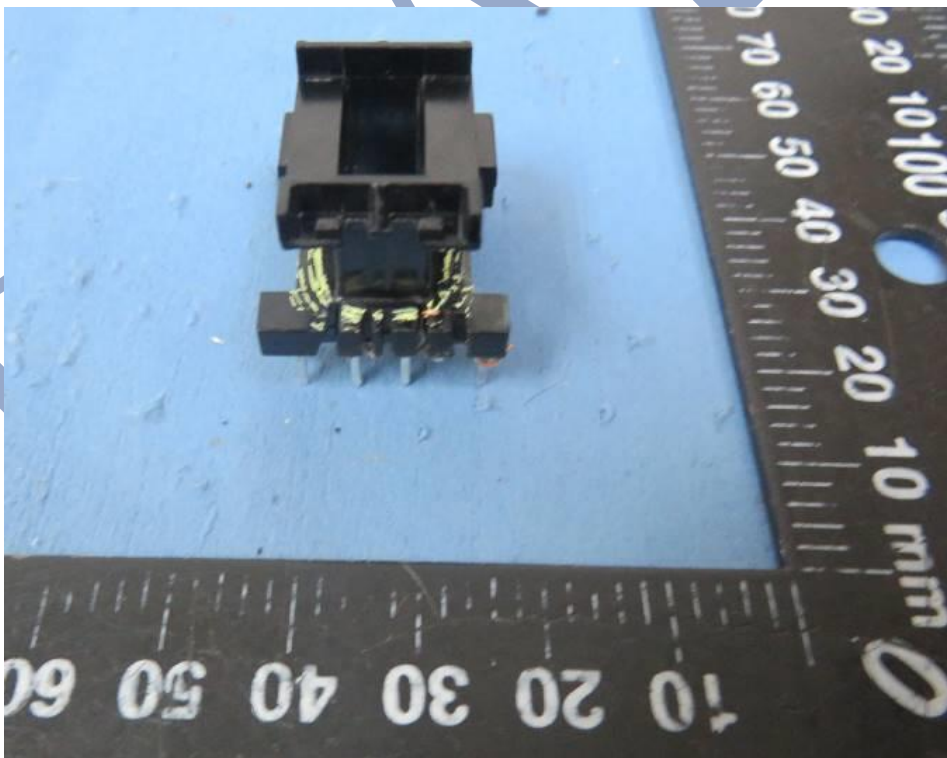


Transformer for 36W series models

Appendix: Photos



Transformer for 36W series models



Transformer for 36W series models

<End of Report>