

# TEST REPORT

**Product Name** : AC-DC Converter

**Model Number** : PM30X10-Sxx, PM32X15-Sxx\*,  
PM32X15-Sxx-W

**Prepared for** : Favotek Limited

**Address** : Rooms 05-15, 13A/F., South Tower, World Finance Center,  
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**Prepared by** : EMTEK(DONGGUAN) CO., LTD.

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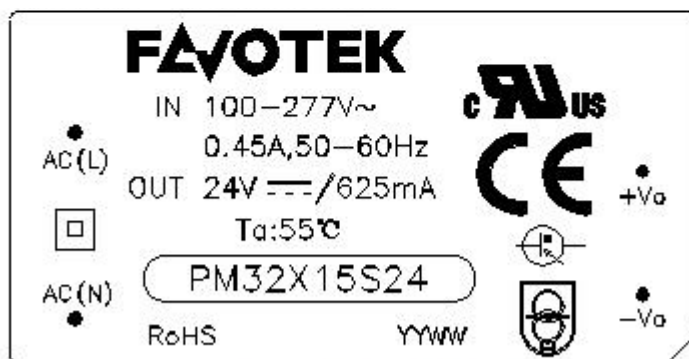
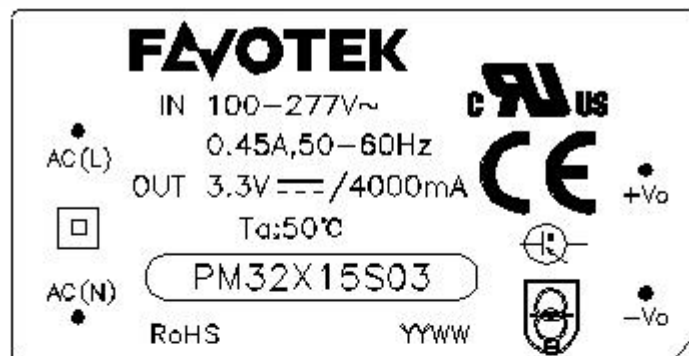


<p align="center"><b>TEST REPORT</b> <b>EN 62368-1</b> <b>Audio/video, information, and communication technology equipment</b> <b>Part 1: Safety requirements</b></p>	
<b>Report Reference No.</b> .....	ED201111024S
<b>Date of issue</b> .....	November 18, 2020
<b>Total number of pages</b> .....	112 pages
<b>Testing Laboratory</b> .....	EMTEK (Dongguan) CO., LTD.
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<b>Tested by (name + signature)</b> .....	Chris Feng 
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<b>Address</b> .....	Rooms 05-15, 13A/F., South Tower, World Finance Center, Harbour City, 17 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong.
<b>Manufacturer's name</b> .....	Favotek Limited
<b>Address</b> .....	Rooms 05-15, 13A/F., South Tower, World Finance Center, Harbour City, 17 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong.
<b>Factory's name</b> .....	Favotek Limited
<b>Address</b> .....	Rooms 05-15, 13A/F., South Tower, World Finance Center, Harbour City, 17 Canton Road, Tsim Sha Tsui, Kowloon, Hong Kong.
<b>Test specification:</b>	
<b>Standard</b> .....	EN 62368-1:2014+A11:2017
<b>Test procedure</b> .....	LVD Test report
<b>Non-standard test method</b> .....	N/A
<b>Test item description</b> .....	AC-DC Converter
<b>Trade Mark</b> .....	
<b>Model/Type reference</b> .....	PM30X10-Sxx, PM32X15-Sxx*, PM32X15-Sxx-W (Variable * can be blank, -H2 or -H4. If * is blank, it means standard module. If * is -H2, it means chassis mounting. If * is -H4, it means DIN-Rail mounting. Variable xx can be 03, 05, 09, 12, 15 and 24, indicate output voltage, eg: 03=3.3Vdc, 24=24.0Vdc.)
<b>Ratings</b> .....	Input: 100-277Vac, 50-60Hz, 0.45A

Summary of testing:	
<b>Tests performed (name of test and test clause):</b> Classification of electrical energy sources (5.2) Temperature measurements (5.4.1.4, 6.3.2, 9.0, B.2.6) Thermal cycling test procedure (5.4.1.5.3) Determination of working voltage (5.4.1.8) Ball pressure test of thermoplastics (5.4.1.10.3) Minimum Clearances/Creepage distance (5.4.2.2, 5.4.2.4 & 5.4.3) Minimum Clearances distances using required withstand voltage (5.4.2.3) Distance through insulation measurements (5.4.4.2, 5.4.4.5 c), 5.4.4.9) Separable Thin Sheet Material (5.4.4.6.2) Antenna Terminal Insulation – Voltage Surge (5.4.5) Tests for semiconductor components and for cemented joints (5.4.7) Humidity conditioning (5.4.8) Electric strength tests (5.4.9) Electrical power sources (PS) measurements for classification (6.2.2) Input test (B.2.5) Abnormal operating condition tests (B.3) Fault condition tests (B.4) Transformer overload tests (G.5.3.3) Limited power sources (Annex Q.1) Flammability test for fire enclosure and fire barrier integrity (S.2) Steady force test (T.2) Stress relief test (T.8)	<b>Testing location:</b> EMTEK (Donggun) Co., Ltd -1&2F., Building 2, Zone A, Zhongda Marine Biotechnology Research and Development Base, No. 9, Xincheng Avenue, Songshanhu High-technology Industrial Development Zone, Dongguan, Guangdong, China
<b>Summary of compliance with National Differences:</b> <b>List of countries addressed: USA/Canada, European group differences and national differences.</b>  <input checked="" type="checkbox"/> <b>The product fulfils the requirements of EN 62368-1:2014+A11:2017.</b>	

**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.



**Remark:**

For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

TEST ITEM PARTICULARS:	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection .....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit – 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 type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <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 checked="" type="checkbox"/> other: building-in equipment, shall evaluated in final system
Considered current rating of protective device as part of building or equipment installation .....	16A(EU), 20A(US); Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment .....	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maxium operating ambient:	85°C or 70°C or 55°C or 50°C
IP protection class .....	<input checked="" type="checkbox"/> IPX0 <input type="checkbox"/> IP ____
Power Systems .....	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V <sub>L-L</sub>
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ 5000 ____ m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> Approx. 0.086kg
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)
<b>TESTING:</b>	
Date of receipt of test item .....	2020-10-10
Date (s) of performance of tests .....	2020-10-10 to 2020-11-16
<b>GENERAL REMARKS:</b>	
<p>“(See Enclosure #)” refers to additional information appended to the report.  “(See appended table)” refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
<p><b>Product Description</b></p> <p>The unit covered in this report is a building-in AC-DC Converter used for audio/video, information and communication technology equipment, electrical components are mounted on PWB, filled by adhesive compound, and then housed with plastic enclosure.</p> <p>There are three-unit constructions: Standard module, Chassis mounting and DIN-Rail mounting.  Standard module (filled by adhesive compound) only contains power module.  Chassis mounting contains power module and plastic base, it is a standard module connected to a plastic base with metal pin by soldering.  DIN-Rail mounting contains power module, plastic base, and metal DIN-Rail, it is a DIN-Rail mounting connected to a metal DIN-Rail with screws.</p> <p><b>Technical Considerations</b></p> <ol style="list-style-type: none"> <li>Maximum operating temperature: <ul style="list-style-type: none"> <li>85°C (50% load output power for output voltage 12V, 15V and 24V; 30% load output power for output voltage 3.3V, 5V and 9V);</li> <li>70°C (60% load output power for output voltage 12V, 15V and 24V; 40% load output power for output voltage 3.3V, 5V and 9V);</li> <li>50°C (Max. load output power for output voltage 3.3V, 5V and 9V);</li> <li>55°C (Max. load output power for output voltage 12V, 15V and 24V);</li> </ul> </li> <li>The product is intended for use on the following power systems: TN</li> <li>For building-in equipment, temperature of accessible surfaces tests should be considered in product.</li> <li>When the Fuse (F1) on chassis/DIN-Rail mounting is not assembled, the unit protect by an external UL recognized and VDE or equivalence Approved fuse. The source of external fuse: <ul style="list-style-type: none"> <li>CONQUER ELECTRONICS CO LTD / MST / T2AL, 300Vac</li> <li>DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD / 932 / T2AL, 300Vac.</li> <li>COOPER BUSSMANN LLC /SS-5H/T2AL, 300Vac</li> </ul> </li> </ol> <p>If use other UL recognized and VDE approved fuse, or different rated UL listed fuse in end product, all Component Failure Tests should be re-evaluated.</p> <ol style="list-style-type: none"> <li>The output connectors were investigated as an ES1 and PS2 parts.</li> </ol> <p><b>Engineering Conditions of Acceptability</b></p> <ol style="list-style-type: none"> <li>The following end-product enclosures are required: Mechanical, Fire, Electrical.</li> <li>This equipment was not evaluated for system mounting. When installed in the end product proper evaluation should be considered.</li> <li>Metal DIN-Rail on final system will be reliably earthed</li> <li>The maximum working voltage of : Primary-Secondary: 577Vpk, 287Vrms</li> <li>The equipment is operated up to 5000m above sea level as declared by manufacturer. Clearances have been evaluated according to IEC 62368-1: table 17 with a multiplication factor of 1.48 throughout this report.</li> </ol>	



## Model Differences

All models are identical to each other except model name, output ratings, unit construction, transformer secondary construction and some non-critical components.

There are three-unit constructions: Standard module, DIN-Rail mounting and Chassis mounting.

Standard module (filled by adhesive compound) only contains power module and used for models PM32X15-Sxx and PM30X10-Sxx, the models PM32X15-Sxx, PM30X10-Sxx use metal pin. The models PM32X15-Sxx-W use lead wire for output and input.

Chassis mounting contains power module and plastic base and is used for models PM32X15-Sxx-H2, it is a standard module connected to a plastic base with metal pin by soldering.

DIN-Rail mounting contains power module, plastic base and metal DIN-Rail and is used for models PM32X15-Sxx-H4, it is a DIN-Rail mounting connected to a metal DIN-Rail with screws.

Model list:

For models PM32X15-Sxx\* and PM32X15-Sxx-W

Models	Input rating	Output voltage (Vdc)	Output current (A)	Max. output power (W)	Transformer type
PM32X15-S03	100-277Vac, 50-60Hz, 0.45A	3.3V	4.0A	13.2W	51500810
PM30X10-S03					
PM32X15-S03-W					
PM32X15-S03-H2					
PM32X15-S03-H4					
PM32X15-S05		5.0V	3.0A	15.0W	51500811
PM30X10-S05					
PM32X15-S05-W					
PM32X15-S05-H2					
PM32X15-S05-H4					
PM32X15-S09		9.0V	1.67A	15.03W	51500815
PM30X10-S09					
PM32X15-S09-W					
PM32X15-S09-H2					
PM32X15-S09-H4					
PM32X15-S12		12V	1.25A	15.0W	51500816
PM30X10-S12					
PM32X15-S12-W					
PM32X15-S12-H2					
PM32X15-S12-H4					
PM32X15-S15		15V	1.0A	15.0W	51500816
PM30X10-S15					
PM32X15-S15-W					
PM32X15-S15-H2					
PM32X15-S15-H4					
PM32X15-S24		24V	0.625A	15.0W	51500816
PM30X10-S24					
PM32X15-S24-W					

PM32X15-S24-H2					
PM32X15-S24-H4					

Unless otherwise specified, all tests were performed on models PM32X15-S03-H2, PM32X15-S09-H2, PM32X15-S24-H2 to represent other models.

**Additional application considerations – (Considerations used to test a component or sub-assembly) –**  
N/A

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input <span style="float: right;">ES1</span>	
Source of electrical energy	Corresponding classification (ES)
All circuits except for output circuits	ES3
Output circuit	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts): <span style="float: right;">PS2</span>	
Source of power or PIS	Corresponding classification (PS)
All primary circuits and secondary circuits inside the equipment enclosure	PS3, Arching PIS, Resistive PIS
Output terminal	PS2
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component <span style="float: right;">Glycol</span>	
Source of hazardous substances	Corresponding chemical
N/A	N/A
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit <span style="float: right;">MS2</span>	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Equipment mass	MS1
<b>Thermal burn injury (Clause 9)</b> (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure <span style="float: right;">TS1</span>	
Source of thermal energy	Corresponding classification (TS)
Internal parts/circuits	TS3



**ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:**
**Radiation (Clause 10)**

(Note: List the types of radiation present in the product and the corresponding energy source classification.)  
Example: DVD – Class 1 Laser Product RS1

Type of radiation	Corresponding classification (RS)
LED indicator (For the models suffix is A2S and A4S)	RS1

**ENERGY SOURCE DIAGRAM**

Indicate which energy sources are included in the energy source diagram. Insert diagram below

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

**Details see ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE.**



OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Assumed to be accessible by Ordinary person	ES3: All primary circuits and secondary circuits inside the equipment enclosure	N/A	N/A	See 5.4.2, 5.4.3, 5.5.3, 5.5.2, 5.5.4, Enclosure
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100-Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
PCB	PS3	See 6.3	V-1 or better	N/A
Input/output Lead wire for model PM32X15-Sxx-W	PS3	See 6.3	VW-1 or better	N/A
Plastic materials not part of PS3	PS2	See 6.3	V-2 or better	N/A
The other components/materials	PS3	See 6.3	See 6.4.5, 6.4.6	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS3: Internal parts/circuits	N/A	N/A	#
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				
(3) #: Building-in equipment, shall evaluated in final system.				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		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
4.1.15	Markings and instructions .....	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests .....	(See Annex T.2)	P
4.4.4.3	Drop tests .....		N/A
4.4.4.4	Impact tests .....		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....		N/A
4.4.4.6	Glass Impact tests .....		N/A
4.4.4.7	Thermoplastic material tests .....	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard .....	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion		P
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to .....	10 N test was applied to internal components. The conductor did not break away or pivot on its terminal to the extent that CLEARANCES or CREEPAGE DISTANCES are reduced below the values specified in 5.4.2 and 5.4.3	P
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard .....		N/A
4.7.3	Torque (Nm) .....		N/A
4.8	Products containing coin/button cell batteries	Product does not containing coin or button cell batteries	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery .....		—
4.8.4	Battery Compartment Mechanical Tests .....		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	conductive object.....:		



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		<b>P</b>
5.2.1	Electrical energy source classifications..... :	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	Output circuit was classified as ES1	P
5.2.2.2	Steady-state voltage and current..... :	See appended table 5.2	P
5.2.2.3	Capacitance limits ..... :		N/A
5.2.2.4	Single pulse limits ..... :		N/A
5.2.2.5	Limits for repetitive pulses ..... :		N/A
5.2.2.6	Ringing signals ..... :		N/A
5.2.2.7	Audio signals ..... :		N/A
5.3	Protection against electrical energy sources	Building-in equipment, shall evaluated in final system	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V ..... :	Building-in equipment, shall evaluated in final system	N/A
	b) Electric strength test potential (V) ..... :		N/A
	c) Air gap (mm) ..... :		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	Humidity conditioning ..... :	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree ..... :	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		P
5.4.1.5.3	Thermal cycling	10 times of following sequence of thermal cycling were conducted and complied: 68h at 130°C (Requested by manufacturer) 1h at 25°C 2h at 0°C 1h at 25°C (All the insulating compound source listed table 4.1.2 were tested and complied)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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		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 softening temperature .....		N/A
5.4.1.10.3	Ball pressure .....	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage .....	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage .....	2500 V peak	—
	b) d.c. mains transient voltage .....	N/A	—
	c) external circuit transient voltage .....	N/A	—
	d) transient voltage determined by measurement .....	N/A	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....		N/A
5.4.3	Creepage distances .....	(See appended table 5.4.3)	—
5.4.3.1	General	See below	P
5.4.3.3	Material Group .....	IIIb	—
5.4.4	Solid insulation	See below	P
5.4.4.2	Minimum distance through insulation .....	(See appended table 5.4.4.2)	P
5.4.4.3	Insulation compound forming solid insulation		P
5.4.4.4	Solid insulation in semiconductor devices		P
5.4.4.5	Cemented joints	Adopt condition c), all comply with clause 5.4.4.2 and 5.4.7	P
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
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



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.7	Solid insulation in wound components	Combination of G.5 and G.6	P
5.4.4.9	Solid insulation at frequencies >30 kHz .....	(See appended Table 5.4.4.9)	P
5.4.5	Antenna terminal insulation		P
5.4.5.1	General		P
5.4.5.2	Voltage surge test		P
	Insulation resistance (MΩ).....	500MΩ	—
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	Three samples are subjected to the thermal cycling sequence of 5.4.1.5.3. No visible voids, gaps or cracks in the insulating material.	P
5.4.8	Humidity conditioning		P
	Relative humidity (%).....	93%	—
	Temperature (°C) .....	40°C	—
	Duration (h) .....	120h	—
5.4.9	Electric strength test .....	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		P
5.4.10	Protection against transient voltages between external circuit		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 .....		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V).....		—
	Nominal voltage $U_{peak}$ (V).....		—
	Max increase due to variation $U_{sp}$ .....		—
	Max increase due to ageing $\Delta U_{sa}$ .....		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....		—
5.5	Components as safeguards		

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.1	General		P
5.5.2	Capacitors and RC units	Y capacitor complying with IEC 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.....:		N/A
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	P
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable.....:	(See Annex G.10.3)	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 <sup>2</sup> ) .....		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ). .....		—
	Protective current rating (A) .....		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm). .....		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....:		N/A
5.6.7	Reliable earthing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 is used in determination of limits of ES1.	P
5.7.2.1	Measurement of touch current .....	Figure 4 of IEC 60990 is used in determination of limits of ES1.	P
5.7.2.2	Measurement of prospective touch voltage		P
5.7.3	Equipment set-up, supply connections and earth connections		P
	System of interconnected equipment (separate connections/single connection) .....	Single connection	—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....	Single connection to mains	—
5.7.4	Earthed conductive accessible parts .....		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V) .....		—
	Measured current (mA) .....		—
	Instructional Safeguard .....		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits	No connections to external circuits	N/A
5.7.7	Summation of touch currents from external circuits	No connections to external circuits	N/A
	a) Equipment with earthed external circuits Measured current (mA) .....		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) .....		N/A

<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications	All circuits are considered PS3 except for the circuits of output terminal complied with Q.1.	P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault .....	(See appended table 6.2.2)	P
6.2.2.4	PS1 .....		N/A
6.2.2.5	PS2 .....	(See appended table 6.2.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.6	PS3 .....	See 6.2.2.	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS .....	All circuit inside enclosure is claimed as Arcing PIS	P
6.2.3.2	Resistive PIS .....	All circuit inside enclosure is claimed as Resistive PIS	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials .....	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method of control of fire spread was applied.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions .....		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards .....		P
6.4.6	Control of fire spread in PS3 circuit	Compliance detailed as follows: – Printed board: rated min. V-1 – All other components: at least V-2 except for parts mounted on min. V-1 material or small parts of combustible material (with mass less than 4g) or components complying to relevant IEC standard. – Isolating transformer: complying with G.5.3. – No components subject to arcing Other parts within the Fire Enclosure are min. V-2 or better. shall evaluated in final system	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Building-in equipment, shall evaluated in final system	N/A
6.4.8.1	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....		N/A
	Flammability tests for the bottom of a fire enclosure .....		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating .....	Building-in equipment, shall evaluated in final system	N/A
6.5	Internal and external wiring		P
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	See table 4.1.2	—
6.5.3	Requirements for interconnection to building wiring .....		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	Comply with Annex Q.1	P

<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions .....		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
7.6	Batteries.....:		N/A
<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		<b>P</b>
8.1	General	Building-in equipment. Additional evaluation shall be considered in end system.	P
8.2	Mechanical energy source classifications	Equipment mass are both classified as MS1	P
8.3	Safeguards against mechanical energy sources	Built-in equipment shall be evaluated in final system.	N/A
8.4	Safeguards against parts with sharp edges and corners	Built-in equipment shall be evaluated in final system.	N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard.....:		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....:		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability	EUT is for building-in.	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N/A
8.7.2	Direction and applied force.....:		N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force .....		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force .....		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N) .....		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> .....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas.....		N/A
	Button/Ball diameter (mm).....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
<b>9</b>	<b>THERMAL BURN INJURY</b>		<b>P</b>
9.2	Thermal energy source classifications	For building-in equipment, temperature of all accessible surfaces tests should be considered in end product. Internal parts are classified as TS3.	P
9.3	Safeguard against thermal energy sources	For building-in equipment, temperature of accessible surfaces tests should be considered in end product.	N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	Building-in equipment, shall evaluated in final system	N/A
9.4.2	Instructional safeguard .....		N/A

<b>10</b>	<b>RADIATION</b>		<b>P</b>
10.2	Radiation energy source classification		P
10.2.1	General classification		P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault..... :		N/A
	Instructional safeguard .....		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons .....		N/A
10.4.1.b)	RS3 accessible to a skilled person..... :		N/A
	Personal safeguard (PPE) instructional safeguard..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 . :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV .....		N/A
10.4.1.h)	Enclosure containment of optical radiation..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions..... :		N/A
10.4.2	Instructional safeguard .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards..... :		N/A
	Instructional safeguard for skilled person ..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation ..... :		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg)..... :		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) ..... :		N/A
	Output voltage, unweighted r.m.s..... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output..... :		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) ..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) ..... :		—

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		<b>P</b>
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	Not such equipment.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.2.3	Supply voltage and tolerances	100-277Vac, +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 requirements..... :		P
B.3.2	Covering of ventilation openings	No opening	N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :	No voltage selector	N/A
B.3.5	Maximum load at output terminals ..... :	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No battery	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	During an abnormal operating condition that does not lead to a single fault condition, all safeguards are remained effective. After restoration of normal operating conditions, all safeguards are compliance with applicable requirements. For abnormal operating condition leads to a consequential fault, the compliance criteria of B.4.8 apply.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :	No Temperature controlling device used.	N/A
B.4.3	Motor tests	No motor	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation	Clearances for functional insulation that are not evaluated for basic insulation or relevant electric strength test are short-circuited in turn	P
B.4.4.2	Short circuit of creepage distances for functional insulation	Creepage distances for functional insulation that are not evaluated for basic insulation or relevant electric strength test are short circuit in turn	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No 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 disconnect of passive components		P
B.4.7	Continuous operation of components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	During and after a single fault condition, a class 1 or class 2 energy sources did not become a class 3 energy source.  For a class 3 energy source, during and after a single fault condition, at least one safeguard continued to comply with the relevant safeguard requirements.	P
B.4.9	Battery charging under single fault conditions ... :		N/A
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
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 apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		P
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		P
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions	Equipment does not contain any audio amplifiers	N/A
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		
E.2	Audio amplifier abnormal operating conditions		N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements		P
	Instructions – Language .....	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1	Letter symbols for quantities and units are compliance with IEC 60027-1	P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphic symbols are compliance with IEC 60417 or ISO 3864-2 or ISO 7000	P
F.3	Equipment markings		P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.1	Equipment marking locations	Equipment marking is located on its exterior surface and is readily visible	P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification .....	See copy marking plate	—
F.3.2.2	Model identification .....	See page 8 model list for details	—
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 supply voltage.....	~	—
F.3.3.4	Rated voltage .....	100-277Vac	—
F.3.3.4	Rated frequency .....	50-60Hz	—
F.3.3.6	Rated current or rated power .....	0.45A	—
F.3.3.7	Equipment with multiple supply connections	No multiple supply connections	N/A
F.3.4	Voltage setting device	No voltage setting device	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....	No mains appliance outlet and socket-outlet	N/A
F.3.5.2	Switch position identification marking .....	No switches	N/A
F.3.5.3	Replacement fuse identification and rating markings .....	“F1 T2A/300VAC” marked on chassis/DIN-Rail mounting (for the models suffix is A2S and A4S) PCB adjacent to fuse F1.  “F1 T2A/300VAC” marked on Standard module PCB adjacent to fuse F1.	P
F.3.5.4	Replacement battery identification marking .....		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		P
F.3.6.1	Class I Equipment	Evaluated in final system	N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Evaluated in final system	N/A
F.3.6.2.1	Class II equipment with or without functional earth	Without functional earth	P
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....	Equipment is not intended for other than IPX0.	—



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Clause	Requirement + Test	Result - Remark	Verdict
F.3.8	External power supply output marking		P
F.3.9	Durability, legibility and permanence of marking	Label is laser etching or melded on enclosure.	P
F.3.10	Test for permanence of markings		N/A
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard is referenced in this test report.	N/A
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.1</b>	<b>Switches</b>		N/A
G.1.1	General requirements	No switches	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements	No relays	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		P
G.3.1	Thermal cut-offs	No thermal cut-offs	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)	No thermal links	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) .....		—
	Single Fault Condition .....		—
	Test Voltage (V) and Insulation Resistance ( $\Omega$ ) ..		—
G.3.3	PTC Thermistors	No PTC thermistors	N/A
G.3.4	Overcurrent protection devices	Approved Current fuse used	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		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
<b>G.4</b>	<b>Connectors</b>		N/A
G.4.1	Spacings	Building-in equipment, shall evaluated in final system	N/A
G.4.2	Mains connector configuration .....	Building-in equipment, shall evaluated in final system	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components.....	(See Annex J)	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	The distance of primary outlet and secondary winding is at least 1mm, as well as the distance of secondary outlet and primary winding is at least 1mm.	P
G.5.1.2 b)	Construction subject to routine testing		P
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....:	The isolation transformer meets the requirements given in Annexes G.5.3.2 and G.5.3.3	P
	Position.....:	T1	—
	Method of protection .....	Triple insulated wire used	—
G.5.3.2	Insulation		P
	Protection from displacement of windings.....:	The insulation in transformers fulfils requirements of Clause 5 and passes the relevant electric strength tests, according to the application of the insulation in the equipment.	—
G.5.3.3	Overload test .....	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit	Maximum temperatures of windings did not exceed the limits given in Table G.3. During the test, the transformer did not emit flames or molten metal.	P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		N/A
G.5.4.1	General requirements		N/A
	Position .....		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V) .....		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test (V) .....		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 .....		—
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General	Approved triple insulated wire used as secondary winding of transformer (T1).	P
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements		N/A
	Type.....		—
	Rated current (A) .....		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG).....		—
G.7.2	Compliance and test method		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) .....		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm)....		—
G.7.3.2.4	Strain relief comprised of polymeric 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	Mass (g) .....		—
	Diameter (m) .....		—
	Temperature (°C) .....		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		P
G.8.1	General requirements	Approved varistors used for the models suffix is A2S and A4S.	P
G.8.2	Safeguard against shock		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....		N/A
G.8.3.3	Temporary overvoltage .....		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		P
G.11.1	General requirements		P
G.11.2	Conditioning of capacitors and RC units	Capacitors used are compliant for IEC 60384-14:2005, with the minimum duration of damp heat, steady-state test of 21 days at 40 °C±2 °C and a RH of 93%±3%.	P
G.11.3	Rules for selecting capacitors	Y1 or Y2 Capacitor provided	P
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results) .....	Approved opto-coupler used.	P
	Type test voltage Vini .....	Considered	—
	Routine test voltage, Vini,b .....	Considered	—
<b>G.13</b>	<b>Printed boards</b>		P
G.13.1	General requirements		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board is compliant with the minimum requirements of clearances (5.4.2) and creepage distances (5.4.3).	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction) .....		—
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.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....		N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage .....		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
C2)	Test voltage .....		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....		—
D3)	Resistance .....		—
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing 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 complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		P
	General requirements		P
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements		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
K.5	Fail-safe		N/A
	Compliance .....		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....		N/A
K.7.2	Overload test, Current (A) .....		N/A
K.7.3	Endurance test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
K.7.4	Electric strength test .....		N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		N/A
L.1	General requirements	Building-in equipment, shall evaluated in final system	N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....		—
M.4.2.2 b)	Single faults in charging circuitry .....		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (mA) .....		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
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /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 (Determination of compliance: inspection, data review; or abnormal testing) .....		N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		N/A
	Metal(s) used .....	Pollution degree considered	—

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Clause	Requirement + Test	Result - Remark	Verdict
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</b>
	Figures O.1 to O.20 of this Annex applied .....		—
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		<b>N/A</b>
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object	Building-in equipment, shall evaluated in final system additionally.	N/A
	Location and Dimensions (mm) .....		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts .....		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	T <sub>c</sub> (°C) .....		—
	T <sub>r</sub> (°C) .....		—
	T <sub>a</sub> (°C) .....		—
P.4.2 b)	Abrasion testing .....	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing .....	(See Annex T)	N/A
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition	(See table annex Q.1)	P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		P

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Clause	Requirement + Test	Result - Remark	Verdict
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....		—
	Current limiting method .....		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A). ....		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		P
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Pre-selection of material is used - all combustible materials are separately evaluated for the required resistance to heat and fire.	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		P
	Samples, material .....	Three samples (the complete part), (See table 4.1.2)	—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....	130°C (Requested by manufacturer), 7 days (168 h)	—
	Test flame according to IEC 60695-11-5 with conditions as set out	Sample 1: HUNTSMAN ADVANCED MATERIALS (SWITZERLAND) GMBH / VB U 6942 + VB U 001/B, Burning time: 5s; Sample 2: HUNTSMAN ADVANCED MATERIALS (SWITZERLAND) GMBH / VB U 6942 + VB U 001/B, Burning time: 4s; Sample 3: HUNTSMAN ADVANCED MATERIALS (SWITZERLAND) GMBH / VB U 6942 + VB U 001/B, Burning time: 4s.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test specimen does not show any additional hole		P
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Cheesecloth did not ignite		N/A
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 does not exceed 4 000 W		N/A
	Samples, material .....		—
	Wall thickness (mm) .....		—
	Conditioning (test condition), (°C) .....		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements		P
T.2	Steady force test, 10 N .....	(See appended table T.2)	P
T.3	Steady force test, 30 N .....		N/A
T.4	Steady force test, 100 N .....	Built-in equipment shall be evaluated in final system.	N/A
T.5	Steady force test, 250 N .....		N/A
T.6	Enclosure impact test		N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....		N/A
T.8	Stress relief test .....	(See appended table T.8)	P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) .....		—
	Height (m) .....		—
T.10	Glass fragmentation test .....		N/A
T.11	Test for telescoping or rod antennas		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Torque value (Nm) .....		—
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen.....		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A





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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 <sup>1</sup>	
Plastic enclosure for standard module	SHINKONG SYNTHETIC FIBERS CORP	D202G30@	PBT, two-piece construction, overall 47.6mm by 23.5 mm by 26.8 mm, rated V-0, minimum thick: 0.71mm±0.05 mm, minimum 120°C.	UL 94 UL 746C	UL E107536	
Alternative	SABIC INNOVATIVE PLASTICS US L L C	945 (GG)	PC, two piece construction, overall 47.6mm by 23.5 mm by 26.8 mm, rated V-0, minimum thick: 1.0mmmm, minimum 120°C.	UL 94 UL 746C	UL E121562	
Alternative	E I DUPONT DE NEMOURS & CO INC	FR530(l)(+)(f1)	PET, two piece construction, overall 47.6mm by 23.5 mm by 26.8 mm, rated V-0, minimum thick: 0.75mm, minimum 155°C.	UL 94 UL 746C	UL E41938	
Fuse (F1) on Standard module PWB	CONQUER ELECTRONICS CO LTD	MST	T2A, 300Vac	UL 248-1, UL 248-14 IEC 60127- 1:2006/AMD2:20 15 IEC 60127- 3:2015 EN 60127-1 (VDE 0820- 1):2015-12; EN 60127- 1:2006+A1:2011 +A2:2015	UL E82636 TUV Rh TA 50196759 01	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T2A, 300Vac	UL 248-1, UL 248-14 IEC 60127- 1:2006/AMD2:20 15 IEC 60127- 3:2015 EN 60127-1 (VDE 0820- 1):2015-12; EN 60127- 1:2006+A1:2011 +A2:2015	UL E300003 TUV Rh R 50279350
Alternative	COOPER BUSSMANN LLC	SS-5H	T2A, 300Vac	UL 248-1, UL 248-14 IEC 60127- 1:2006/AMD2:20 15 IEC 60127- 3:2015 EN 60127-1 (VDE 0820- 1):2015-12; EN 60127- 1:2006+A1:2011 +A2:2015	UL E19180 VDE 40031800
Y-capacitor (CY1, CY2)	WALSIN TECHNOLOGY CORP	AH	Maximum 1000 pF, minimum 400 Vac, marked with Y1, minimum 125°C.	UL 60384-14 IEC 60384- 14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1- 1):2014-04	VDE 40001804 UL E146544
Alternative	XIAMEN WANMING ELECTRONICS CO LTD	HJ	Maximum 1000 pF, minimum 400 Vac, marked with Y1, minimum 125°C.	UL 60384-14 IEC 60384- 14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1- 1):2014-04	VDE 40034438 UL E221839

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	TDK Corporation	CD	Maximum 1000 pF, minimum 400 Vac, marked with Y1, minimum 125°C.	UL 60384-14 IEC 60384-14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1-1):2014-04	VDE 40029780 UL E37861
Alternative	Murata Mfg. Co., Ltd.	KX	Maximum 1000 pF, minimum 300 Vac, marked with Y1, minimum 125°C.	UL 60384-14 IEC 60384-14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1-1):2014-04	VDE 40002831 UL E37921
Alternative	WALSIN TECHNOLOGY CORP	AC	Maximum 1000 pF, minimum 250 Vac, marked with Y2, minimum 125°C.	UL 60384-14 IEC 60384-14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1-1):2014-04	VDE 40001829 UL E146544
Alternative	XIAMEN WANMING ELECTRONICS CO LTD	HM	Maximum 1000 pF, minimum 250 Vac, marked with Y2, minimum 125°C.	UL 60384-14 IEC 60384-14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1-1):2014-04	VDE 40034436 UL E221839
Alternative	TDK Corporation	CS	Maximum 1000 pF, minimum 250 Vac, marked with Y2, minimum 125°C.	UL 60384-14 IEC 60384-14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1-1):2014-04	VDE 40029781 UL E37861
Alternative	Murata Mfg. Co., Ltd.	KY	Maximum 1000 pF, minimum 250 Vac, marked with Y2, minimum 125°C.	UL 60384-14 IEC 60384-14:2013/AMD1:2 016 EN 60384-14 (VDE 0565-1-1):2014-04	VDE 40006273 UL E37921

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Opto-coupler (U3)	Toshiba Electronic Devices & Storage Corporation	TLP385	Dti≥0.4mm, int.&ext. cl=cr ≥8.0mm, 110°C.	IEC 60747-5-5:2007; IEC 60747-5-5:2007/AMD1:2013; DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE 40043360
Alternative	Toshiba Electronic Devices & Storage Corporation	P385(j)	Dti≥0.4mm, int.&ext. cl=cr ≥8.0mm, 110°C.	UL 1577	UL E67349
Alternative	EVERLIGHT ELECTRONICS CO LTD	EL101	Dti≥0.4mm, int.&ext. cl=cr ≥8.1mm, 110°C.	IEC 60747-5-5:2007; IEC 60747-5-5:2007/AMD1:2013; DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015 UL 1577	VDE 40028391 UL E214129
Transformer (T1) for output voltage 3.3Vdc and 5Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500810	Class B	IEC/EN 62368-1	Tested with appliance
Transformer (T1) for output voltage 9Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500811	Class B	IEC/EN 62368-1	Tested with appliance
Transformer (T1) for output voltage 12Vdc and 15Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500815	Class B	IEC/EN 62368-1	Tested with appliance
Transformer (T1) for output voltage 24Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500816	Class B	IEC/EN 62368-1	Tested with appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-Insulation system of Transformer (T1)	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	MST-130	Class B	UL 1446	UL E350609
-Bobbin of Transformer (T1)	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9630, PM-9830	Phenolic, V-0, 150°C, minimum. thickness 0.75 mm	UL 94 UL 746	UL E41429
-Magnet Wire of Transformer (T1) (Primary winding)	Interchangeable	MW28, MW75, MW79, MW80, MW82, MW83, MW85	130°C	UL 1446	UL
-Triple Insulation wire of Transformer (T1) (Secondary winding)	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C	UL 2353 EN 62368-1:2014/A11:2017 IEC62368-1:2014	VDE 006735 UL E206440
Alternative	TOTOKU ELECTRIC CO LTD	TIW-2, TIW-2S, TIW-3, TIW-3LZ for VDE mark; TIW-2X\$+, TIW-2SX\$+, TIW-3X\$, TIW-3LZX @ @ @ % \$ for UL mark	130°C	EN 60950-1:2006 + A11 + A1 + A12 + A2:2013 IEC 60950-1(ed.2);am1;am2 UL 2353	VDE 40005152 VDE 40005154 UL E166483
-Varnish of Transformer(T1)	JOHN C DOLPH CO	BC-346A	200°C	UL 1446	UL E317427
Alternative	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	Rated 130°C	UL 1446	UL E228349
-Insulation Tape of Transformer (T1)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD	CT* (b)(g), CT* (c)(g), PZ* (b)	130°C	UL 510A	UL E165111
Alternative	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b), 1350F-2 (c)	130°C	UL 510A	UL E17385
- Core of Transformer (T1)	Interchangeable	Interchangeable	Ferrite P4, Measured overall size:16.0mm by 8.2mm by 8.4mm	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Transformer (T1) for output voltage 3.3Vdc and 5Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500810	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
Transformer (T1) for output voltage 9Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500811	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
Transformer (T1) for output voltage 12Vdc and 15Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500815	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
Transformer (T1) for output voltage 24Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500816	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
-Insulation system	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	MWanbao DTM	Class B	UL 1446	UL E350609
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9823, PM-9825, PM-9820	Phenolic, V-0, minimum 150°C, minimum. Thickness 0.75mm	UL 94 UL 746 C	UL E41429
-Bobbin (Alternate)	CHANG CHUN PLASTICS CO LTD	LONGLITE T375HF	Phenolic, V-0, minimum 150°C, minimum. Thickness 0.75mm	UL 94 UL 746 C	UL E59481
-Magnet Wire of Transformer (T1) (Primary winding)	Interchangeable	MW28, MW75, MW79, MW80, MW82, MW83, MW85	130°C	UL 1446	UL
-Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD	CT* (b)(g), PZ* (b)	Rated 130°C	UL 510A	UL E165111

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-Insulation tape (Alternate)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b), 1350F-2 (c)	130°C	UL 510A	UL E17385
-Triple Insulated Wire	FURUKAWA ELECTRIC CO LTD	TEX-E	130°C	EN 62368-1:2014/A11:2017 IEC62368-1:2014	VDE 006735
-Triple Insulated Wire (Alternate)	FURUKAWA ELECTRIC CO LTD	TEX-E, TEX-EA	130°C	UL 2353	UL E206440
-Triple Insulated Wire (Alternate)	GUANGZHOU WANBAO ELECTRONIC MATERIAL CO LTD	DTM-B	130°C	UL 2353 EN 62368-1:2014/A11:2017 IEC62368-1:2014	UL E323485 VDE 40044801
-Varnish	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL E228349
-Varnish (Alternate)	JOHN C DOLPH CO	BC-346A	155°C	UL 1446	UL E317427
Transformer (T1) for output voltage 3.3Vdc and 5Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500810	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
Transformer (T1) for output voltage 9Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500811	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
Transformer (T1) for output voltage 12Vdc and 15Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500815	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance
Transformer (T1) for output voltage 24Vdc models.	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	51500816	Class B	IEC62368-1:2014 EN 62368-1:2014/A11:2017	Tested in appliance



IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
-Insulation system	MORNSUN GUANGZHOU SCIENCE & TECHNOLOGY LTD	MGH-130	Class B	UL 1446	UL E350609
-Bobbin	SUMITOMO BAKELITE CO LTD	PM-9823, PM-9630, PM-9820	Phenolic, V-0, minimum 150°C, minimum. Thickness 0.70mm	UL 94 UL 746 C	UL E41429
-Bobbin (Alternate)	CHANG CHUN PLASTICS CO LTD	LONGLITE T375HF	Phenolic, V-0, minimum 150°C, minimum. Thickness 0.70mm	UL 94 UL 746 C	UL E59481
- Core of Transformer (T1)	Interchangeable	Interchangeable	Ferrite P4, overall size:16.0mm by 8.2mm by 8.4mm	IEC 62368- 1:2014 EN 62368- 1:2014/A11:2017	Tested in appliance
-Magnet wire	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD	CT* (b)(g), CT* (c)(g), PZ* (b)	Rated 130°C	UL 510A	UL E165111
-Insulation tape (Alternate)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 (b), 1350F-2 (c)	130°C	UL 510A	UL E17385
-Triple Insulated Wire	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)* TRW(B)(L)*	130°C	UL 2353 EN 62368- 1:2014/A11:2017 IEC62368-1:2014	UL E211989 VDE 006735
-Varnish	JOHN C DOLPH CO	BC-346A, BC- 346-A	155°C	UL 1446	UL E317427
-Varnish (Alternate)	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	130°C	UL 1446	UL E228349
PWM IC (U1)	Interchangeable	Interchangeable	Minimum 650V, Minimum 2A	--	--
Limit current resistor (R6, R7)	Interchangeable	Interchangeable	Rated 0.8-3.6ohm, 1/8W	--	--
Inductor (L1)	Interchangeable	Interchangeable	Minimum 130°C	--	--

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Inductor (L2)	Interchangeable	Interchangeable	Minimum 130°C	--	--
Electrolytic Capacitors (C1, C2)	Interchangeable	Interchangeable	Maximum 10-25uF, minimum 400V or 450V, minimum 105°C	--	--
Diode Bridge (D1)	Interchangeable	Interchangeable	Minimum 2A, Minimum 1000V	--	--
PWB	GUANGZHOU TAIHE PRINTED CIRCUIT BOARD LIMITED	THD1, THS, THV	V-0, 130°C	UL 796	UL E221000
Alternative	HUIZHOU HUAGAO ELECTRIC CIRCUIT CO LTD	HG-M	V-0, 130°C	UL 796	UL E483905
Alternative	SHENZHEN MULTILAYER PCB TECHNOLOGY CO LTD	MTL-D, MTL-C	V-0, 130°C	UL 796	UL E307592
Silicone (Filled with power module)	STOCKMEIER URETHANES GMBH & CO.KG	L780.(**)	V-0, 130°C	UL 94 UL 746	UL E302173
Alternative	HUNTSMAN ADVANCED MATERIALS (SWITZERLAND) GMBH	VB U 6942 + VB U 001/B	V-0	UL 94 UL 746	UL E96722
Fuse (F1) on chassis/DIN-Rail mounting (for the model's suffix is A2S and A4S) (Optional)	CONQUER ELECTRONICS CO LTD	MST	T2A, 300Vac	UL 248-1, UL 248-14 IEC 60127-1:2006/AMD2:2015 IEC 60127-3:2015 EN 60127-1 (VDE 0820-1):2015-12; EN 60127-1:2006+A1:2011+A2:2015	UL E82636 TUV Rh TA 50196759 01

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD	932	T2A, 300Vac	UL 248-1, UL 248-14 IEC 60127- 1:2006/AMD2:20 15 IEC 60127- 3:2015 EN 60127-1 (VDE 0820- 1):2015-12; EN 60127- 1:2006+A1:2011 +A2:2015	UL E300003 TUV Rh R 50279350
Alternative	COOPER BUSSMANN LLC	SS-5H	T2A, 300Vac	UL 248-1, UL 248-14 IEC 60127- 1:2006/AMD2:20 15 IEC 60127- 3:2015 EN 60127-1 (VDE 0820- 1):2015-12; EN 60127- 1:2006+A1:2011 +A2:2015	UL E19180 VDE 40031800
Varistors (MOV) on chassis/DIN-Rail mounting (for the models suffix is A2S and A4S) (Optional)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR10561-M	350Vac, min. 125°C, minimum coating V-1 2.5KV/1.25KA	IEC 61051- 2:1991/AMD1:20 09 IEC 61051-2- 2:1991 IEC 61051- 1:2007 IEC60950-1 Annex Q UL 1449	UL E314979 VDE 40036061

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Alternative	XIAMEN WANMING ELECTRONICS CO LTD	WMR10D561K-3	350Vac, min. 125°C, minimum coating V-1 2.5KV/1.25KA	IEC 61051-2:1991/AMD1:2009 IEC 61051-2:1991 IEC 61051-1:2007 IEC60950-1 Annex Q UL 1449	UL: E333988 VDE: 40043176
Input/output terminals (JP3, JP4) on chassis/DIN-Rail mounting (for the models suffix is A2S and A4S)	NINGBO DEGSON ELECTRICAL CO LTD	DG128-7.5-02P	300V, 20A, 105°C.	UL 1059	UL E228872
Plastic enclosure for chassis/DIN-Rail mounting (for the models suffix is A2S and A4S)	SHINKONG SYNTHETIC FIBERS CORP	D202G30@	PBT, two-piece construction, overall 76.0mm by 31.5mm by 8.8mm, rated V-0, thick: 0.71mm±0.05 mm, minimum 120°C.	UL 94 UL 746C	UL E107536
Alternative	SABIC INNOVATIVE PLASTICS US L L CSABIC INNOVATIVE PLASTICS UL LLC	945 (GG)	PC, two piece construction, overall 76.0mm by 31.5mm by 8.8mm, rated V-0, thick: 1.0mm, minimum 120°C.	UL 94 UL 746C	UL E121562
Alternative	E I DUPONT DE NEMOURS & CO INC	FR530(I)(+)(f1)	PET, two piece construction, overall 76.0mm by 31.5mm by 8.8mm, rated V-0, thick: 0.75mm, minimum 155°C.	UL 94 UL 746C	UL E41938
Metal base for DIN-Rail mounting (for the models suffix is A4S)	--	--	Galvanized steel sheet, overall, 76.0mm by 31.5 mm by 3.8±0.2mm	--	--
Output and input Lead wire (for the models PM32X15-Sxx-W)	DONGGUAN CITY QINDA WIRE CO LTD	1330	Minimum 600V, VW-1, Minimum 22AWG, 200°C	UL 758	UL E328821

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Alternative	Interchangeable	1330	Minimum 600V, VW-1, Minimum 22AWG, 200°C	UL 758	UL
Label	--	--	Laser etching or melded on enclosure.	--	--
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					



IEC 62368-1			
Clause	Requirement + Test		Verdict
4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests		N/A
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.2	TABLE: Stress Relief test		—
	Part	Material	Oven Temperature (°C)
4.8.4.3	TABLE: Battery replacement test		—
	Battery part no. ....:		—
	Battery Installation/withdrawal	Battery Installation/Removal Cycle	Comments
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
4.8.4.4	TABLE: Drop test		—
	Impact Area	Drop Distance	Drop No.
			1
			2
			3
4.8.4.5	TABLE: Impact		—
	Impacts per surface	Surface tested	Impact energy (Nm)
4.8.4.6	TABLE: Crush test		—
	Test position	Surface tested	Crushing Force (N)
			Duration force applied (s)
Supplementary information:			

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result		N/A
Test position	Surface tested	Force (N)	Duration force applied (s)
Supplementary information:			

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
For model: PM32X15-S03-H2							
1	305V/60Hz	Output connector (+) to (-)	Normal	3.321	--	DC	ES1
			Output overload	3.321	--	DC	
			R9 S-C	0	--	DC	
			C13 S-C	0	--	DC	
			Q1 Pin G-S S-C	0	--	DC	
			Q1 Pin D-S S-C	0	--	DC	
			Q1 Pin G-D S-C	0	--	DC	
			C10 S-C	0	--	DC	
			R21 S-C	0	--	DC	
			R6 S-C	0	--	DC	
			R19 S-C	0	--	DC	
			CY1 S-C	3.321	--	DC	
			U3 pin1-2 S-C	0	--	DC	
			U3 pin3-4 S-C	0	--	DC	
			U3 pin1 O-C	0	--	DC	
			U3 pin3 O-C	0	--	DC	
2	305V/60Hz	Output connector (+) to Earth	Normal	--	0.172mApk	60	ES1
			Output overload	--	0.172mApk	60	
			R9 S-C	--	0.178mApk	60	
			C13 S-C	--	0.178mApk	60	
			Q1 Pin G-S S-C	--	0.178mApk	60	



IEC 62368-1							
Clause	Requirement + Test			Result - Remark		Verdict	
			Q1 Pin D-S S-C	--	0.178mApk	60	
			Q1 Pin G-D S-C	--	0.178mApk	60	
			C10 S-C	--	0.178mApk	60	
			R21 S-C	--	0.178mApk	60	
			R6	--	0.185mApk	60	
			R19	--	0.178mApk	60	
			CY1 S-C		0.286mApk	60	
			U3 pin1-2 S-C		0.178mApk	60	
			U3 pin3-4 S-C		0.178mApk	60	
			U3 pin1 O-C	--	0.178mApk	60	
			U3 pin3 O-C	--	0.178mApk	60	
3	305V/60Hz	Output connector (-) to Earth	Normal	--	0.172mApk	60	ES1
			Output overload	--	0.172mApk	60	
			R9 S-C	--	0.178mApk	60	
			C13 S-C	--	0.178mApk	60	
			Q1 Pin G-S S-C	--	0.178mApk	60	
			Q1 Pin D-S S-C	--	0.178mApk	60	
			Q1 Pin G-D S-C	--	0.178mApk	60	
			C10 S-C	--	0.178mApk	60	
			R21 S-C	--	0.178mApk	60	
			R6	--	0.185mApk	60	
			R19		0.178mApk		
			CY1 S-C		0.286mApk		
			U3 pin1-2 S-C		0.178mApk		
			U3 pin3-4 S-C	--	0.178mApk	60	
			U3 pin1 O-C	--	0.178mApk	60	
			U3 pin3 O-C	--	0.178mApk	60	
1	305V/60Hz	Output connector (+) to (-)	Normal	24.07	--	DC	ES1
			Output overload	24.07	--	DC	
			R9 S-C	0	--	DC	
			C13 S-C	0	--	DC	
			Q1 Pin G-S S-C	0	--	DC	
			Q1 Pin D-S S-C	0	--	DC	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
			Q1 Pin G-D S-C	0	--	DC	
			C10 S-C	0	--	DC	
			R21 S-C	0	--	DC	
			R6	0	--	DC	
			R19	0	--	DC	
			CY1 S-C	24.01	--	DC	
			U3 pin1-2 S-C	0	--	DC	
			U3 pin3-4 S-C	0	--	DC	
			U3 pin1 O-C	0	--	DC	
			U3 pin3 O-C	0	--	DC	
2	305V/60Hz	Output connector (+) to Earth	Normal	--	0.172mA <sub>pk</sub>	60	ES1
			Output overload	--	0.172mA <sub>pk</sub>	60	
			R9 S-C	--	0.178mA <sub>pk</sub>	60	
			C13 S-C	--	0.178mA <sub>pk</sub>	60	
			Q1 Pin G-S S-C	--	0.178mA <sub>pk</sub>	60	
			Q1 Pin D-S S-C	--	0.178mA <sub>pk</sub>	60	
			Q1 Pin G-D S-C	--	0.178mA <sub>pk</sub>	60	
			C10 S-C	--	0.178mA <sub>pk</sub>	60	
			R21 S-C	--	0.178mA <sub>pk</sub>	60	
			R6	--	0.185mA <sub>pk</sub>	60	
			R19		0.178mA <sub>pk</sub>		
			CY1 S-C		0.286mA <sub>pk</sub>		
			U3 pin1-2 S-C		0.178mA <sub>pk</sub>		
			U3 pin3-4 S-C	--	0.178mA <sub>pk</sub>	60	
			U3 pin1 O-C	--	0.178mA <sub>pk</sub>	60	
			U3 pin3 O-C	--	0.178mA <sub>pk</sub>	60	
3	305V/60Hz	Output connector (-) to Earth	Normal	--	0.172mA <sub>pk</sub>	60	ES1
			Output overload	--	0.172mA <sub>pk</sub>	60	
			R9 S-C	--	0.178mA <sub>pk</sub>	60	
			C13 S-C		0.178mA <sub>pk</sub>		
			Q1 Pin G-S S-C		0.178mA <sub>pk</sub>		
			Q1 Pin D-S S-C		0.178mA <sub>pk</sub>		
			Q1 Pin G-D S-C	--	0.178mA <sub>pk</sub>	60	

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Clause	Requirement + Test	Result - Remark	Verdict

			C10 S-C	--	0.178mApk	60
			R21 S-C	--	0.178mApk	60
			R6	--	0.185mApk	60
			R19	--	0.178mApk	60
			CY1 S-C	--	0.260mApk	60
			U3 pin1-2 S-C	--	0.178mApk	60
			U3 pin3-4 S-C	--	0.178mApk	60
			U3 pin1 O-C	--	0.178mApk	60
			U3 pin3 O-C	--	0.178mApk	60

#### 5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	Normal	--	--	--
			Abnormal	--	--	
			Single fault – S-C/O-C	--	--	

#### 5.2.2.4 - Single Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – S-C/O-C	--	--	--	

#### 5.2.2.5 - Repetitive Pulses

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – S-C/O-C	--	--	--	

Test Conditions:

Normal –

Abnormal -

Supplementary information: S-C=Short Circuit, O-C=Open Circuit

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Clause	Requirement + Test			Result - Remark		Verdict

5.4.1.4, 6.3.2, 9.0, B.2.6		TABLE: Temperature measurements				P
	Supply voltage (V) .....	90V/60Hz	90V/60Hz	305V/60Hz	305V/60Hz	—
	Ambient T <sub>min</sub> (°C) .....	--	--	--	--	—
	Ambient T <sub>max</sub> (°C) .....	--	--	--	--	—
	T <sub>ma</sub> (°C) .....	See below	See below	See below	See below	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
Unit test location		Horizontal	Vertical	Horizontal	Vertical	--
For model: PM32X15-S03-H2						
Applied 50 °C (Max. load output current: 3.3Vdc, 4.0A)						
Input connector		57.0	57.9	57.1	57.2	105
PCB near D1		87.7	89.6	84.3	88.9	130
E-cap C1		81.4	83.7	81.3	83.0	105
L1 winding		92.5	93.9	93.3	94.1	130
PCB near U1		100.9	102.7	107.5	108.7	130
Y-cap CY1		87.9	88.3	88.1	87.8	125
Y-cap CY2		88.7	88.1	88.8	87.5	125
T1 winding		91.7	93.4	91.6	92.7	110
T1 core		88.8	90.2	89.2	89.8	110
Optocoupler U3		86.9	89.3	87.1	88.8	110
E-cap C10		89.9	89.4	89.6	88.7	105
L2 winding		93.6	93.8	93.2	93.1	130
PCB near D5		100.2	99.6	99.2	99.0	130
Enclosure inside near T1		73.5	77.1	73.5	76.5	120
Enclosure outside near T1		71.4	75.6	72.1	75.0	120
Mov body		67.2	69.4	67.3	68.8	125
Enclosure outside near input connector		59.7	61.5	59.9	60.8	120
Output connector		61.4	63.3	61.8	62.6	105
Ambient		50.0	50.0	50.0	50.0	--
Applied 70 °C (40% load output current: 3.3Vdc, 1.6A)						
Input connector		72.2	72.4	73.0	72.7	105
PCB near D1		82.4	83.7	85.9	87.0	130
E-cap C1		80.3	81.4	84.4	85.4	105

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
L1 winding	84.2	85.1	91.4	92.2	130
PCB near U1	87.6	88.8	101.4	102.7	130
Y-cap CY1	82.4	82.9	87.5	87.5	125
Y-cap CY2	82.3	82.4	87.1	86.5	125
T1 winding	83.2	84.2	88.4	89.1	110
T1 core	82.2	83.1	87.0	87.5	110
Optocoupler U3	81.6	83.1	86.5	87.9	110
E-cap C10	82.3	82.5	86.7	86.2	105
L2 winding	83.2	83.8	88.0	88.0	130
PCB near D5	85.0	85.4	90.4	90.1	130
Enclosure inside near T1	77.8	84.3	80.7	92.4	120
Enclosure outside near T1	76.3	79.0	79.1	81.9	120
Mov body	75.7	76.4	77.7	78.1	125
Enclosure outside near input connector	73.5	73.8	74.5	74.5	120
Output connector	73.7	74.8	74.8	75.2	105
Ambient	70.0	70.0	70.0	70.0	--
<b>Applied 85°C (30% load output current: 3.3Vdc, 1.2A)</b>					
Input connector	88.2	86.5	87.4	86.9	105
PCB near D1	96.6	97.2	98.3	97.7	130
E-cap C1	95.1	95.9	97.1	96.4	105
L1 winding	98.3	100.2	103.3	100.7	130
PCB near U1	100.6	111.0	112.6	111.6	130
Y-cap CY1	97.2	98.5	99.6	99.0	125
Y-cap CY2	97.7	97.9	99.0	98.4	125
T1 winding	97.9	99.1	100.3	99.6	110
T1 core	97.4	97.7	98.9	98.2	110
Optocoupler U3	96.8	97.7	98.6	98.2	110
E-cap C10	98.0	97.3	98.4	97.8	105
L2 winding	98.9	98.5	99.5	99.0	130
PCB near D5	101.9	100.1	101.6	100.6	130
Enclosure inside near T1	97.6	102.6	103.5	103.1	120
Enclosure outside near T1	93.2	92.3	93.9	92.7	120
Mov body	91.7	90.5	91.6	90.9	125

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Enclosure outside near input connector	90.1	87.9	89.1	88.3	120
Output connector	90.1	88.3	89.1	88.7	105
Ambient	85.0	85.0	85.0	85.0	--
<b>For model: PM32X15-S09-H2</b>					
<b>Applied 50 °C (Max. load output current: 9.0Vdc, 1.67A)</b>					
Input connector	63.0	58.5	62.1	58.5	105
PCB near D1	84.4	86.7	83.5	86.1	130
E-cap C1	82.1	81.8	81.2	83.0	105
L1 winding	91.6	88.7	90.7	92.3	130
PCB near U1	88.6	85.7	87.7	88.5	130
Y-cap CY1	91.1	87.5	90.2	90.3	125
Y-cap CY2	88.5	88.9	87.6	91.8	125
T1 winding	94.2	87.5	93.3	90.8	110
T1 core	90.5	90.9	89.6	93.3	110
Optocoupler U3	100.4	97.1	99.5	99.5	110
E-cap C10	88.2	85.7	87.3	88.0	105
L2 winding	85.6	83.9	84.7	86.0	130
PCB near D5	82.9	81.0	82.0	83.1	130
Enclosure inside near T1	69.0	67.8	68.1	68.7	120
Enclosure outside near T1	66.0	68.7	65.1	66.4	120
Mov body	106.0	95.6	105.1	107.1	125
Enclosure outside near input connector	68.0	67.2	67.1	68.0	120
Output connector	63.5	60.2	62.6	60.3	105
Ambient	50.0	50.0	50.0	50.0	--
<b>Applied 70 °C (40% load output current: 9.0Vdc, 0.668A)</b>					
Input connector	73.9	73.4	74.9	77.0	105
PCB near D1	83.4	85.1	86.2	86.6	130
E-cap C1	81.7	83.1	85.6	86.3	105
L1 winding	85.0	86.3	90.8	87.2	130
PCB near U1	83.8	84.7	88.4	97.6	130
Y-cap CY1	84.5	85.2	88.9	90.3	125
Y-cap CY2	83.1	84.8	87.3	93.0	125
T1 winding	84.3	85.2	88.8	92.1	110

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
T1 core	85.1	85.9	89.0	92.5	110
Optocoupler U3	87.3	88.2	91.3	93.5	110
E-cap C10	83.0	84.0	86.6	103.0	105
L2 winding	82.7	83.8	86.8	95.2	130
PCB near D5	81.6	82.4	85.3	96.7	130
Enclosure inside near T1	78.4	79.8	80.3	88.4	120
Enclosure outside near T1	75.6	75.9	77.4	83.5	120
Mov body	89.5	91.0	101.4	75.1	125
Enclosure outside near input connector	76.4	76.8	78.3	75.5	120
Output connector	74.5	76.6	76.3	76.3	105
Ambient	70.0	70.0	70.0	70.0	--
<b>Applied 85°C (30% load output current: 9.0Vdc, 0.501A)</b>					
Input connector	87.8	88.6	86.3	87.8	105
PCB near D1	98.0	95.8	95.1	96.3	130
E-cap C1	97.2	94.6	93.6	95.9	105
L1 winding	101.4	97.4	96.5	100.1	130
PCB near U1	99.0	96.4	95.1	98.1	130
Y-cap CY1	99.3	97.0	95.6	98.5	125
Y-cap CY2	98.3	96.7	94.6	98.3	125
T1 winding	102.7	98.8	98.7	102.2	110
T1 core	99.5	97.2	96.0	98.6	110
Optocoupler U3	101.2	98.8	97.7	100.2	110
E-cap C10	97.9	95.6	94.5	96.7	105
L2 winding	98.0	95.6	94.4	97.0	130
PCB near D5	96.7	94.7	93.3	95.8	130
Enclosure inside near T1	93.6	91.3	91.1	91.1	120
Enclosure outside near T1	90.4	89.2	88.1	89.0	120
Mov body	109.9	101.4	100.5	108.4	125
Enclosure outside near input connector	91.0	90.8	88.6	90.6	120
Output connector	89.4	89.2	87.0	89.0	105
Ambient	85.0	85.0	85.0	85.0	--
<b>For model: PM32X15-S24-H2</b>					
<b>Applied 55°C (Max. load output current: 24.0Vdc, 0.625A)</b>					



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Clause	Requirement + Test		Result - Remark		Verdict
Input connector	60.8	64.6	62.7	65.8	105
PCB near D1	84.8	88.4	87.7	90.7	130
E-cap C1	79.3	84.0	85.2	89.3	105
L1 winding	88.3	92.7	100.6	104.4	130
PCB near U1	93.7	97.8	114.7	118.2	130
Y-cap CY1	81.3	86.1	89.1	93.3	125
Y-cap CY2	81.0	86.1	89.0	93.6	125
T1 winding	83.0	88.6	91.2	96.4	110
T1 core	81.9	87.3	89.9	94.9	110
Optocoupler U3	81.4	85.8	90.3	93.8	110
E-cap C10	79.7	85.1	87.3	92.4	105
L2 winding	83.3	88.9	92.7	98.0	130
PCB near D5	89.8	95.0	100.2	104.8	130
Enclosure inside near T1	80.1	84.9	87.0	91.3	120
Enclosure outside near T1	54.7	57.9	54.3	57.3	120
Mov body	67.0	71.7	70.8	75.0	125
Enclosure outside near input connector	71.7	78.5	76.6	83.3	120
Output connector	62.0	65.8	63.9	67.0	105
Ambient	55.0	55.0	55.0	55.0	--
<b>Applied 70°C (60% load output current: 24.0Vdc, 0.375A)</b>					
Input connector	76.0	75.7	77.1	76.3	105
PCB near D1	91.3	91.2	93.1	92.6	130
E-cap C1	88.1	88.5	91.6	91.6	105
L1 winding	94.9	95.3	101.9	101.8	130
PCB near U1	99.5	99.7	110.9	110.9	130
Y-cap CY1	89.8	90.1	94.3	94.2	125
Y-cap CY2	89.3	89.9	94.0	94.2	125
T1 winding	90.4	91.4	95.4	96.1	110
T1 core	89.8	90.5	94.7	95.1	110
Optocoupler U3	89.9	90.6	94.9	95.0	110
E-cap C10	88.4	89.1	92.9	93.3	105
L2 winding	90.8	92.0	96.4	97.2	130
PCB near D5	94.8	95.8	100.9	101.4	130

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Clause	Requirement + Test		Result - Remark		Verdict
Enclosure inside near T1	88.6	89.0	92.7	92.7	120
Enclosure outside near T1	71.8	72.1	72.2	71.7	120
Mov body	80.3	80.4	82.6	82.2	125
Enclosure outside near input connector	83.2	84.7	86.1	87.5	120
Output connector	77.5	77.2	78.6	77.8	105
Ambient	70.0	70.0	70.0	70.0	--
<b>Applied 85 °C (50% load output current: 24.0Vdc, 0.3125A)</b>					
Input connector	92.6	88.4	93.1	90.0	105
PCB near D1	104.8	100.5	106.7	103.1	130
E-cap C1	100.3	98.3	102.5	102.2	105
L1 winding	108.0	103.9	114.6	111.3	130
PCB near U1	111.2	107.0	122.5	119.2	130
Y-cap CY1	103.9	99.5	107.9	104.2	125
Y-cap CY2	103.6	99.4	107.6	104.2	125
T1 winding	104.6	100.8	108.8	106.0	110
T1 core	104.0	100.1	108.3	105.3	110
Optocoupler U3	104.3	100.4	108.5	105.3	110
E-cap C10	100.9	98.9	104.6	103.5	105
L2 winding	105.0	101.4	102.4	106.9	130
PCB near D5	108.1	104.5	113.2	110.4	130
Enclosure inside near T1	103.0	98.8	106.6	103.2	120
Enclosure outside near T1	90.1	87.9	89.2	88.5	120
Mov body	96.7	91.3	98.2	93.9	125
Enclosure outside near input connector	98.7	95.4	100.9	99.1	120
Output connector	94.4	90.2	94.9	91.8	105
Ambient	85.0	85.0	85.0	85.0	--
For model: PM32X15-S03-W					
<b>Applied 85°C (Max. load output current: 3.3Vdc, 1.2A)</b>					
Input Lead wire	89.4	--	--	--	200
Output Lead wire	91.2	--	--	--	200
Ambient	85.0	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

RESIN (filled within unit) source as below was applied during the normal heating test, which has the worst thermal conductivity 0.65W/mK.

Manufacturer: HUNTSMAN ADVANCED MATERIALS (SWITZERLAND) GMBH, Type: VB U 6942 + VB U 001/B.

Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Note 1: Tma should be considered as directed by applicable requirement

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)..... :			—
Object/ Part No./Material	Manufacturer/t rademark	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	Test temperature (°C)	Impression diameter (mm)
Input terminals (JP3, JP4) on chassis/DIN-Rail mounting (for the model suffix is A2S and A4S)		DEGSON ELECTRONICS CO LTD / DG128-7.5-02P	125	1.2
Enclosure		SHINKONG SYNTHETIC FIBERS CORP/D202G30@	125	0.69
Enclosure		SABIC INNOVATIVE PLASTICS UL LLC /945 (GG)	125	0.74
Enclosure		E I DUPONT DE NEMOURS & CO INC/FR530(l)(+)(f1)	125	0.47
*Silicone (filled within unit)		STOCKMEIER URETHANES GMBH & CO.KG/ L780.(**)	125	0.92

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Clause	Requirement + Test	Result - Remark	Verdict
*Silicone (filled within unit)	HUNTSMAN ADVANCED MATERIALS (SWITZERLAND) GMBH /VB U 6942 + VB U 001/B	125	1.01
Supplementary information: After the test, dimension d (diameter of the indentation) did not exceed 2 mm. *The ratio of compound glue A and B is 1:5.			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)	cr (mm)
Functional:							
Primary traces of different polarity before Fuse F1 for chassis/DIN-Rail mounting (for the models suffix is A2S and A4S)	420	277	60Hz	2.7 (1.8*1.48)	4.2	2.8	4.2
Primary traces under Fuse F1 for chassis/DIN-Rail mounting (for the models suffix is A2S and A4S)	420	277	60Hz	2.7 (1.8*1.48)	2.9	2.8	2.9
Basic/supplementary:							
Primary traces (N) to screw of metal DIN-Rail for chassis/DIN-Rail mounting (for the models suffix is A4S)	420	277	60Hz	2.7 (1.8*1.48)	4.0	2.8	4.0
Reinforced:							
Primary traces to secondary traces for the Base	577	287	31.6kHz	5.4	11.8	5.8	11.8
Primary part (MOV) to secondary traces for chassis/DIN-Rail mounting (for the models suffix is A2S and A4S)	420	277	60Hz	5.4	6.0	5.8	8.6
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group 1. Material Group: IIIb 2. Unless otherwise specified, the worst conditions of Cl. & Cr. In above mentioned locations have been considered and listed. 3. Other distances are evaluated by the thermal cycling test in terms of insulation penetration distance, refer to table 5.4.4.2, 5.4.4.5 c), 5.4.4.9 for details.							

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Clause	Requirement + Test	Result - Remark	Verdict

4. The equipment is operated up to 5000m above sea level as declared by manufacturer. Clearances have been evaluated according to IEC 62368-1: table 17 with a multiplication factor of 1.48 throughout this report.

<b>5.4.2.3</b>	<b>TABLE: Minimum Clearances distances using required withstand voltage</b>			P
	<b>Overvoltage Category (OV):</b>			--
	<b>Pollution Degree:</b>			--
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
Refer to table 5.4.2.2, 5.4.2.4 and 5.4.3 for details (Reinforced insulation)		2500 Vpeak	3.0	Refer to table 5.4.2.2, 5.4.2.4 and 5.4.3 for details
Refer to table 5.4.2.2, 5.4.2.4 and 5.4.3 for details (Basic insulation)		2500 Vpeak	1.5	Refer to table 5.4.2.2, 5.4.2.4 and 5.4.3 for details
Supplementary information: The equipment is operated up to 5000m above sea level as declared by manufacturer. Clearances have been evaluated according to IEC 62368-1: table 17 with a multiplication factor of 1.48 throughout this report.				

<b>5.4.2.4</b>	<b>TABLE: Clearances based on electric strength test</b>			N/A
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
--		--	--	--
--		--	--	--
Supplementary information:				

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					P
Distance through insulation di at/of:		Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Insulating compound Primary traces of different polarity before Fuse F1 for Standard module		420	33.2	*	Min. 0.4	4.8
Primary traces under Fuse F1 for Standard module		420	33.2	*	Min. 0.4	1.7
Insulating compound between Primary traces to secondary traces under CY1		420	33.2	*	Min. 0.4	3.2

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Clause	Requirement + Test		Result - Remark		Verdict
Insulating compound between Primary traces to secondary traces under CY2	420	33.2	*	Min. 0.4	2.6
Insulating compound between Primary traces (C6) to secondary traces (C14)	577	33.2	*	Min. 0.4	3.0
Insulating compound between Primary traces (D3) to secondary traces (R17)	577	33.2	*	Min. 0.4	2.0
Photocoupler (U3)	577	33.2	*	Min. 0.4	*
Insulating compound between primary winding (T1) and secondary component (L2)	577	33.2	*	Min. 0.4	1.0
Insulating compound between Transformer core to secondary traces of CY1	577	33.2	*	Min. 0.4	1.5
Insulating compound between transformer primary windings and secondary pins	577	33.2	*	Min. 0.4	2.2
Supplementary information: 1. * Refer to table 4.1.2 2. Core of transformer T1 is considered as primary circuit.					

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:				
--	--	--	--	
Basic/supplementary:				
Mains poles (primary fuse F1 disconnected) on chassis/DIN-Rail mounting	DC	2500	No	
Mains poles (primary fuse F1 disconnected) on Standard module	DC	2500	No	
Mains poles to metal DIN-Rail	DC	2500	No	
Secondary traces to metal DIN-Rail	DC	2500	No	
Reinforced:				

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Clause	Requirement + Test	Result - Remark	Verdict

<b>5.4.9</b>	<b>TABLE: Electric strength tests</b>			<b>P</b>
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
L/N to output terminal	DC	5657*	No	
Primary winding to secondary winding of Transformer T1	DC	5657*	No	
Core to secondary winding of Transformer T1	DC	5657*	No	
Insulation tape	DC	5657*	No	
Routine Tests:				
--	--	--	--	
Supplementary information: 1. Core of transformers T1 is considered as primary part. 2. Above test performed immediately after the humidity test. 3. All materials listed in table 4.1.2 are tested. 4. For the unit, test performed immediately following temperature test in 5.4.1.4. 5. Metal DIN-Rail is considered as Intermediate conductor. 6. *: Requested by manufacturer. 7. Insulation tape: a. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD/CT* (b)(g), CT (b)(g), PZ* (b)/ CT* (c)(g) b. 3M COMPANY ELECTRICAL MARKETS DIV (EMD)/1350F-1 (b), 1350F-2 (c)				

<b>5.5.2.2</b>	<b>TABLE: Stored discharge on capacitors</b>					<b>N/A</b>
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
--	--	--	--	--	--	
Supplementary information: X-capacitors installed for testing are: -- <input type="checkbox"/> bleeding resistor rating: -- <input type="checkbox"/> ICX: -- Notes: A. Test Location: Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth B. Operating condition abbreviations: N – Normal operating condition (e.g., normal operation, or open fuse); S – Single fault condition						

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>				<b>N/A</b>
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
--	--	--	--	--	
Supplementary information:					



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Clause	Requirement + Test	Result - Remark	Verdict

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage .....			—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
		1	
		2*	
		3	
		4	
		5	
		6	
Supplementary Information: Notes: [1] Supply voltage is the anticipated maximum Touch Voltage [2] Earthed neutral conductor [Voltage differences less than 1% or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s*)	PS Classification
For model: PM32X15-S03-H2					
Output connector + to -	Normal Operation	Power (W) :	16.0	--	PS2
		V <sub>A</sub> (V) :	2.143	--	
		I <sub>A</sub> (A) :	7.5	--	
Output connector + to -	U3 pin 1-2 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin 3-4 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin1 opened	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin3 opened	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U1 pin 8-1 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-2 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-3 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-4 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	R6 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
to -		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	R9 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	C13 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	R21 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	Q1 Pin G-D shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	Q1 Pin G-S shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	Q1 Pin D-S shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
For model: PM32X15-S09-H2					
Output connector + to -	Normal Operation	Power (W) :	29.4	--	PS2
		V <sub>A</sub> (V) :	8.31	--	
		I <sub>A</sub> (A) :	3.5	--	
Output connector + to -	U3 pin 1-2 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin 3-4 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin1 opened	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output	U3 pin3	Power (W) :	0#	--	PS1

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
connector + to -	opened	V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U1 pin 8-1 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-2 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-3 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-4 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	R6 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	R9 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	C13 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	R21 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
For model: PM32X15-S24-H2					
Output connector + to -	Normal Operation	Power (W) :	30.7	--	PS2
		V <sub>A</sub> (V) :	23.57	--	
		I <sub>A</sub> (A) :	1.3	--	
Output connector +	U3 pin 1-2 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	
to -		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin 3-4 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin1 opened	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U3 pin3 opened	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	U1 pin 8-1 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-2 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-3 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	U1 pin 8-4 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	R6 shorted	Power (W) :	0@	--	PS1
		V <sub>A</sub> (V) :	0@	--	
		I <sub>A</sub> (A) :	0@	--	
Output connector + to -	R9 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	C13 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	
		I <sub>A</sub> (A) :	0#	--	
Output connector + to -	R21 shorted	Power (W) :	0#	--	PS1
		V <sub>A</sub> (V) :	0#	--	

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Clause	Requirement + Test			Result - Remark		Verdict
to -		I <sub>A</sub> (A)	:	0#	--	
		V <sub>A</sub> (V)	:	0#	--	
		I <sub>A</sub> (A)	:	0#	--	
		Supplementary Information: (*) Measurement taken only when limits at 5 seconds exceed PS2 limits # Unit shut down immediately, @ Fuse opened immediately.				

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				P
Location	Open circuit voltage After 3 s (V <sub>p</sub> )	Measured r.m.s current (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> × I <sub>rms</sub> )	Arcing PIS? Yes / No	
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*	Yes (declaration)	
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 <sub>p</sub> ) and normal operating condition rms current (I <sub>rms</sub> ) is greater than 15. * An Arcing PIS is considered to exist in primary circuits					

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All primary circuits and secondary circuits inside the equipment enclosure	*	*	*	*	Yes (declaration)
Supplementary Information: A combination of voltmeter, VA and ammeter I <sub>A</sub> may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (V <sub>A</sub> x I <sub>A</sub> ) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (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.					

8.5.5	TABLE: High Pressure Lamp		N/A
Description	Values	Energy Source Classification	
Lamp type.....:		—	

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Clause	Requirement + Test	Result - Remark	Verdict
Manufacturer .....		—	
Cat no. ....		—	
Pressure (cold) (MPa) .....		MS_	
Pressure (operating) (MPa) .....		MS_	
Operating time (minutes) .....		—	
Explosion method .....		—	
Max particle length escaping enclosure (mm) .:		MS_	
Max particle length beyond 1 m (mm) .....		MS_	
Overall result .....			
Supplementary information:			

B.2.5		TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
For model: PM32X15-S03-H2								
90Vac/50Hz	0.324	--	16.0	--	F1	0.324	Maximum Normal Load: 3.3V, 4.0A	
90Vac/60Hz	0.335	--	15.9	--	F1	0.335	Maximum Normal Load: 3.3V, 4.0A	
100Vac/50Hz	0.282	0.45	15.9	--	F1	0.282	Maximum Normal Load: 3.3V, 4.0A	
100Vac/60Hz	0.310	0.45	15.8	--	F1	0.310	Maximum Normal Load: 3.3V, 4.0A	
277Vac/50Hz	0.127	0.45	16.2	--	F1	0.127	Maximum Normal Load: 3.3V, 4.0A	
277Vac/60Hz	0.139	0.45	15.9	--	F1	0.139	Maximum Normal Load: 3.3V, 4.0A	
305Vac/50Hz	0.112	--	16.2	--	F1	0.112	Maximum Normal Load: 3.3V, 4.0A	
305Vac/60Hz	0.124	--	16.0	--	F1	0.124	Maximum Normal Load: 3.3V, 4.0A	
For model: PM32X15-S09-H2								
90Vac/50Hz	0.365	--	18.1	--	F1	0.365	Maximum Normal Load: 9V, 1.67A	
90Vac/60Hz	0.369	--	18.0	--	F1	0.369	Maximum Normal Load: 9V, 1.67A	
100Vac/50Hz	0.317	0.45	18.0	--	F1	0.317	Maximum Normal Load: 9V, 1.67A	
100Vac/60Hz	0.346	0.45	18.0	--	F1	0.346	Maximum Normal Load: 9V, 1.67A	



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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
277Vac/50Hz	0.142	0.45	18.4	--	F1	0.142	Maximum Normal Load: 9V, 1.67A
277Vac/60Hz	0.159	0.45	18.1	--	F1	0.159	Maximum Normal Load: 9V, 1.67A
305Vac/50Hz	0.124	--	18.3	--	F1	0.124	Maximum Normal Load: 9V, 1.67A
305Vac/60Hz	0.138	--	18.1	--	F1	0.138	Maximum Normal Load: 9V, 1.67A
For model: PM32X15-S24-H2							
90Vac/50Hz	0.363	--	17.7	--	F1	0.363	Maximum Normal Load: 24V, 0.625A
90Vac/60Hz	0.365	--	17.5	--	F1	0.365	Maximum Normal Load: 24V, 0.625A
100Vac/50Hz	0.314	0.45	17.5	--	F1	0.314	Maximum Normal Load: 24V, 0.625A
100Vac/60Hz	0.344	0.45	17.4	--	F1	0.344	Maximum Normal Load: 24V, 0.625A
277Vac/50Hz	0.147	0.45	18.5	--	F1	0.147	Maximum Normal Load: 24V, 0.625A
277Vac/60Hz	0.161	0.45	18.1	--	F1	0.161	Maximum Normal Load: 24V, 0.625A
305Vac/50Hz	0.126	--	18.7	--	F1	0.126	Maximum Normal Load: 24V, 0.625A
305Vac/60Hz	0.143	--	18.3	--	F1	0.143	Maximum Normal Load: 24V, 0.625A
Supplementary information:--							

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....					See below			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
For model: PM32X15-S03-H2								
Output	Overload	305Vac/60 Hz	4hrs21m ins	F1	0.124 →	T1 winding	111.5	Unit shutdown at output 6.2A, No damaged, no
					0.161 → 0.201 →	T1 core	106.1	

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Clause	Requirement + Test	Result - Remark	Verdict

B.3 TABLE: Abnormal operating condition tests								P
Ambient temperature (°C) .....					See below			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
					0.024	Enclosure outside near T1	81.7	hazards. Touch current 0.172mApeak
						Ambient	50.0	Sec. output + to - touch voltage: 3.321V
						T1 winding	114.0	Unit shutdown at output 2.8A, No damaged, no hazards. Touch current 0.172mApeak
						T1 core	111.8	
Output	Overload	305Vac/60 Hz	4hrs31mins	F1	0.046 → 0.068 → 0.092 → 0.002	Enclosure outside near T1	100.5	Unit shutdown at output 2.8A, No damaged, no hazards. Touch current 0.172mApeak
						Ambient	85.0	
						T1 winding	113.2	Sec. output + to - touch voltage: 3.321V
						T1 core	111.8	
Transformer after pin 5	Overload	305Vac/60 Hz	5hrs02mins	F1	0.124 → 0.172 → 0.218 → 0.048	Enclosure outside near T1	82.8	Output normal load, Unit shutdown at transformer output 2.2A, No damaged, no hazards. Touch current 0.172mApeak
						Ambient	50.0	
						T1 winding	113.2	Sec. output + to - touch voltage: 3.321V
						T1 core	108.4	
Transformer after pin 5	Overload	305Vac/60 Hz	7hrs30mins	F1	0.046 → 0.078 → 0.105 → 0.001	Enclosure outside near T1	103.7	Output normal load, Unit shutdown at transformer output 1.6A, No damaged, no hazards. Touch current 0.172mApeak
						Ambient	85.0	
						T1 winding	117.0	Sec. output + to - touch voltage: 3.321V
						T1 core	114.9	

For model: PM32X15-S09-H2

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

B.3		TABLE: Abnormal operating condition tests						P
Ambient temperature (°C) .....					See below			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
Output	Overload	305Vac/60 Hz	4hrs55m ins	F1	0.138 → 0.204 → 0.281 → 0.049	T1 winding	112.4	Unit shutdown at output 3.5A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 9.02V
						T1 core	120.5	
						Enclosure outside near T1	76.7	
						Ambient	50.0	
Output	Overload	305Vac/60 Hz	4hrs53m ins	F1	0.049 → 0.104 → 0.136 → 0.012	T1 winding	126.3	Unit shutdown at output 1.6A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 9.02V
						T1 core	122.8	
						Enclosure outside near T1	101.3	
						Ambient	85.0	
Transformer after D5	Overload	305Vac/60 Hz	4hrs47m ins	F1	0.102 → 0.122 → 0.162 → 0.049	T1 winding	123.9	Output normal load, Unit shutdown at transformer output 1.83A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 9.02V
						T1 core	115.6	
						Enclosure outside near T1	77.7	
						Ambient	50.0	
Transformer after D5	Overload	305Vac/60 Hz	7hrs34m ins	F1	0.049 → 0.110 → 0.145 → 0.012	T1 winding	127.1	Output normal load, Unit shutdown at transformer Unit shutdown at output 1.1A, No
						T1 core	123.9	
						Enclosure outside near T1	101.9	

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Clause	Requirement + Test	Result - Remark	Verdict

B.3 TABLE: Abnormal operating condition tests								P
Ambient temperature (°C) .....					See below			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
						Ambient	85.0	damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 9.02V
For model: PM32X15-S24-H2								
Output	Overload	305Vac/60 Hz	4hrs50m ins	F1	0.143→ 0.218→ 0.251→ 0.012	T1 winding	121.6	Unit shutdown at output 1.2A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 24.07V
						T1 core	118.8	
						Enclosure outside near T1	85.6	
						Ambient	55.0	
Output	Overload	305Vac/60 Hz	4hrs33m ins	F1	0.076→ 0.117→ 0.177→ 0.008	T1 winding	125.8	Unit shutdown at output 0.7A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 24.07V
						T1 core	123.9	
						Enclosure outside near T1	109.5	
						Ambient	85.0	
Transformer after D5	Overload	305Vac/60 Hz	5hrs04m ins	F1	0.143→ 0.225→ 0.280→ 0.042	T1 winding	122.5	Output normal load, Unit shutdown at transformer output 0.575A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 24.07V
						T1 core	119.8	
						Enclosure outside near T1	86.2	
						Ambient	55.0	
Transformer after D5	Overload	305Vac/60 Hz	7hrs30m ins	F1	0.076→	T1 winding	127.8	Output normal

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Clause	Requirement + Test	Result - Remark	Verdict

B.3 TABLE: Abnormal operating condition tests								P
Ambient temperature (°C) .....					See below			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
					0.120→ 0.185→ 0.008	T1 core Enclosure outside near T1 Ambient	126.0 106.3 85.0	load, Unit shutdown at transformer output 0.387A, No damaged, no hazards. Touch current 0.172mApeak Sec. output + to - touch voltage: 24.07V
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.								

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C) .....					--			—
Power source for EUT: Manufacturer, model/type, output rating ..					--			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (ms)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
For model: PM32X15-S03-H2								
D1 pin 1-4	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. D1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
C1	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. D1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V
U1 pin 1-8	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. U1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V
U1 pin 3-8	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. U1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V
U1 pin 2-8	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. U1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V
U1 pin 4-8	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. U1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
R6	S-C	305Vac	1sec	F1	0	--	--	Fuse opened immediately. U1 damaged, no hazards. Touch current is 0.185mApeak Sec. output + to - touch voltage: 0V
T1 pin 1-2	S-C	305Vac	10min	F1	0.007	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V
T1 pin 3-4	S-C	305Vac	10min	F1	0.007	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V
T1 pin 5-6	S-C	305Vac	10min	F1	0.010	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V



IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
U3 pin 1-2	S-C	305Vac	10min	F1	0.008	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172mApeak. Sec. output + to - touch voltage: 0V
U3 pin 3-4	S-C	305Vac	10min	F1	0.008	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V
U3 pin 1	O-C	305Vac	10min	F1	0.010	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V
U3 pin 3	O-C	305Vac	10min	F1	0.011	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Q1 Pin G-S	S-C	305Vac	10min	F1	0.008	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172mApeak. Sec. output + to - touch voltage: 0V
Q1 Pin G-D	S-C	305Vac	10min	F1	0.008	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172mApeak. Sec. output + to - touch voltage: 0V
Q1 Pin D-S	S-C	305Vac	10min	F1	0.008	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.172 mApeak. Sec. output + to - touch voltage: 0V
Output +/-	S-C	305Vac	10min	F1	0.009	--	--	Unit shut down immediately, no damage, recoverable, no hazards Touch current is 0.171 mApeak. Sec. output + to - touch voltage: 0V

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

## Supplementary information:

- The room ambient temperature is 20 to 25° C.
- For fuse opened condition, tests with each source of fuse and the same result observed.  
Fuse source:  
CONQUER ELECTRONICS CO LTD / MST / T2A, 300Vac  
DONGGUAN BETTER ELECTRONICS TECHNOLOGY CO LTD / 932 / T2A, 300Vac  
COOPER BUSSMANN LLC /SS-5H/T2A, 300Vac
- S-C=short circuit, O-C=Open circuit

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

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
	Normal					
	Abnormal					
	Single fault –SC/OC					
	Normal					
	Abnormal					
	Single fault – SC/OC					

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

Supplementary Information:

Battery identification	Charging at $T_{lowest}$ (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation

Supplementary Information:

<b>Annex Q.1</b>	<b>TABLE: Circuits intended for interconnection with building wiring (LPS)</b>	<b>P</b>
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Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit

For model: PM32X15-S03-H2

Output + to -	Normal	3.321	7.5	8	16.0	100
Output + to -	U1 pin8-1 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-2 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-3 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-4 S-C	0#	0#	8	0#	100
Output + to -	U3 pin1-2 S-C	0*	0*	8	0*	100
Output + to -	U3 pin3-4 S-C	0*	0*	8	0*	100
Output + to -	U3 pin1 O-C	0*	0*	8	0*	100
Output + to -	U3 pin3 O-C	0*	0*	8	0*	100
Output + to -	R6 S-C	0#	0#	8	0#	100

For model: PM32X15-S09-H2

Output + to -	Normal	9.02	3.5	8	29.4	100
Output + to -	U1 pin8-1 S-C	0#	0#	8	0#	100

IEC 62368-1						
Clause	Requirement + Test			Result - Remark		Verdict
Output + to -	U1 pin8-2 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-3 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-4 S-C	0#	0#	8	0#	100
Output + to -	U3 pin1-2 S-C	0*	0*	8	0*	100
Output + to -	U3 pin3-4 S-C	0*	0*	8	0*	100
Output + to -	U3 pin1 O-C	0*	0*	8	0*	100
Output + to -	U3 pin3 O-C	0*	0*	8	0*	100
Output + to -	R6 S-C	0#	0#	8	0#	100
For model: PM32X15-S24-H2						
Output + to -	Normal	24.07	1.3	8	30.7	100
Output + to -	U1 pin8-1 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-2 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-3 S-C	0#	0#	8	0#	100
Output + to -	U1 pin8-4 S-C	0#	0#	8	0#	100
Output + to -	U3 pin1-2 S-C	0*	0*	8	0*	100
Output + to -	U3 pin3-4 S-C	0*	0*	8	0*	100
Output + to -	U3 pin1 O-C	0*	0*	8	0*	100
Output + to -	U3 pin3 O-C	0*	0*	8	0*	100
Output + to -	R6 S-C	0#	0#	8	0#	100
Supplementary Information: S-C=short circuit, O-C=Open circuit, * Unit shut down immediately, # Fuse opened.						

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Clause	Requirement + Test	Result - Remark	Verdict

<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>				<b>P</b>
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Internal component or part	--	--	10	5	No hazard, no access to Class 3 energy source, no safeguards defeated.
Supplementary information:					

T.6, T.9	TABLE: Impact tests				N/A
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
--	--	--	--	--	
Supplementary information:					

<b>T.8</b>	<b>TABLE: Stress relief test</b>				<b>P</b>
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation
Plastic enclosure	SHINKONG SYNTHETIC FIBERS CORP / D202G30@	0.71	130*	7	No damage, no hazard
	SABIC INNOVATIVE PLASTICS UL LLC / 945 (GG)	1.0	130*	7	No damage, no hazard
	E I DUPONT DE NEMOURS & CO INC / FR530(I)(+)(f1)	0.75	130*	7	No damage, no hazard
Supplementary information:					
*: Requested by manufacturer.					

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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 62368-1:2014+A11:2017
Attachment Form No. ....:	EU_GD_IEC62368_1B_II
Attachment Originator .....	Nemko AS
Master Attachment .....	Date 2017-09-22
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	<b>CENELEC COMMON MODIFICATIONS (EN)</b>					P																																				
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed “Z”.					P																																				
CONTENTS	<b>Add</b> 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																																				
	<b>Delete all the “country” notes in the reference document (IEC 62368-1:2014) according to the following list:</b> <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</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</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
0.2.1	Note	1	Note 3	4.1.15	Note																																					
4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c																																					
5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note																																					
5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3																																					
5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4																																					
10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3																																					
	<b>For special national conditions, see Annex ZB.</b>					P																																				
1	<b>Add</b> the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					N/A																																				



Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p><b>Add</b> 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. <b>mains</b>, 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 <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, 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 <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>	Considered.	P
5.4.2.3.2.4	<p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>	No connection to external circuit.	N/A
10.2.1	<p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>	No radiation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p><b>Add</b> the following after the first paragraph:  <i>For RS 1 compliance is checked by measurement under the following conditions:  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 presets 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.</i></p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</i></p> <p><i>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.</i></p> <p><i>For RS1, the dose-rate shall not exceed 1 μSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>	Added.	N/A
10.6.1	<p><b>Add</b> the following paragraph to the end of the subclause:  EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>	Added.	N/A
10.Z1	<p><b>Add</b> the following new subclause after 10.6.5.  <b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b>  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).</p> <p>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
G.7.1	<p><b>Add</b> the following note:  NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.</p>	Added.	N/A

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

Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	<b>Denmark</b> After the 2nd paragraph add the following: A warning (marking <b>safeguard</b> ) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current measured.	N/A



Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p><b>Finland and Sweden</b></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"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>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"> <li>• 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), and</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.</li> </ul> <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"> <li>• 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;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> </ul> <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>	No connection to such a network.	N/A
5.5.2.1	<p><b>Norway</b></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>	Considered.	N/A

Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<b>Finland, Norway and Sweden</b> To the end of the subclause the following is added: Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.	No such resistor used.	N/A
5.6.1	<b>Denmark</b> <b>Add</b> to the end of the subclause 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. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Added.	N/A
5.6.4.2.1	<b>Ireland and United Kingdom</b> After the indent for <b>pluggable equipment type A</b> , the following is added: – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.	Added.	N/A
5.6.5.1	To the second paragraph the following is added: 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 mm <sup>2</sup> to 1,5 mm <sup>2</sup> in cross-sectional area.		N/A
5.7.5	<b>Denmark</b> To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.		N/A



Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	<p><b>Norway and Sweden</b></p> <p>To the end of the subclause the following is added:</p> <p>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 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>		N/A
	<p>Translation to Swedish:</p> <p>“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>		



Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.2	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>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
B.3.1 and B.4	<p><b>Ireland and United Kingdom</b></p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b>, 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 <b>direct plug-in equipment</b>, until the requirements of Annexes B.3.1 and B.4 are met</p>		N/A
G.4.2	<p><b>Denmark</b></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 poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>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 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>		N/A

Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<b>United Kingdom</b> To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
G.7.1	<b>United Kingdom</b> To the first paragraph the following is added: 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. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
G.7.1	<b>Ireland</b> To the first paragraph the following is added: 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		N/A
G.7.2	<b>Ireland and United Kingdom</b> To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm <sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.		N/A
ZC	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		N/A

# IEC62368\_1B - ATTACHMENT

Access to the World

Clause	Requirement + Test	Result - Remark	Verdict
10.5.2	<p><b>Germany</b></p> <p>The following requirement applies: 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><b>NOTE</b> Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p>	Not such equipment.	N/A

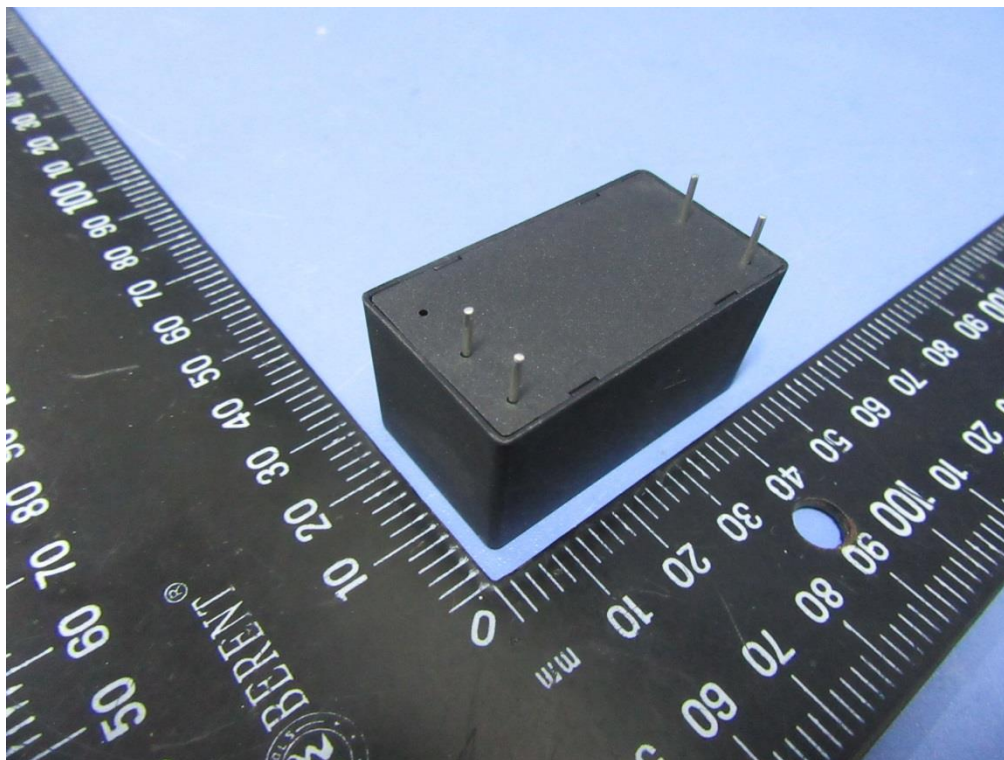


Figure 1. External view 1 (standard mounting)

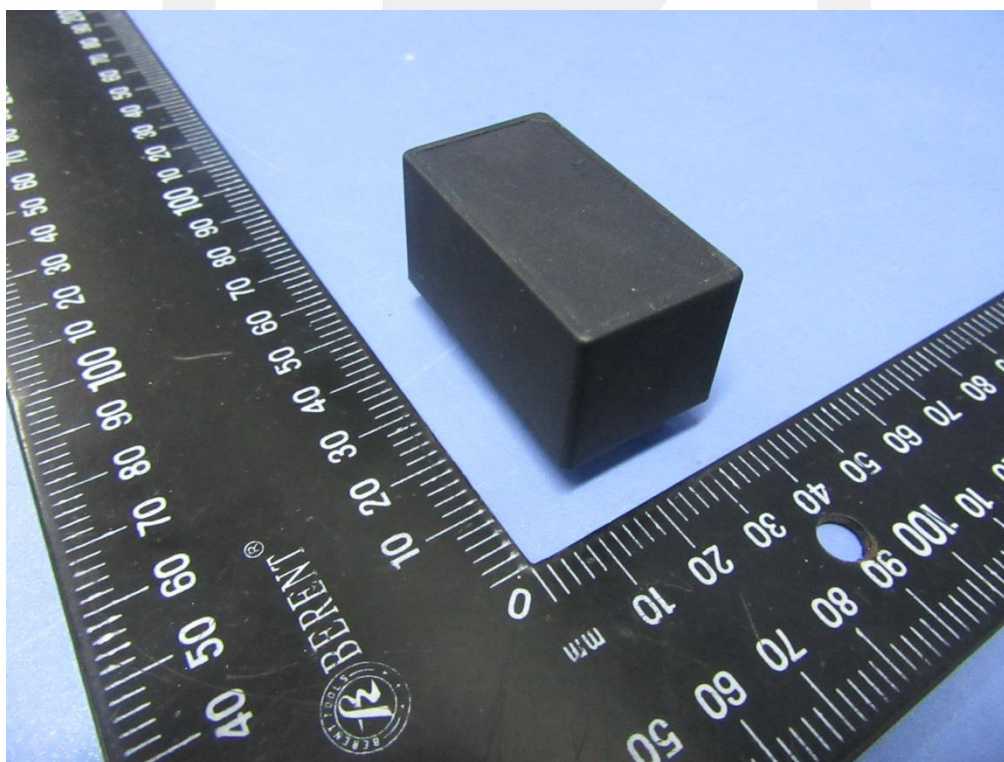


Figure 2. External view 2 (standard mounting)



Photo

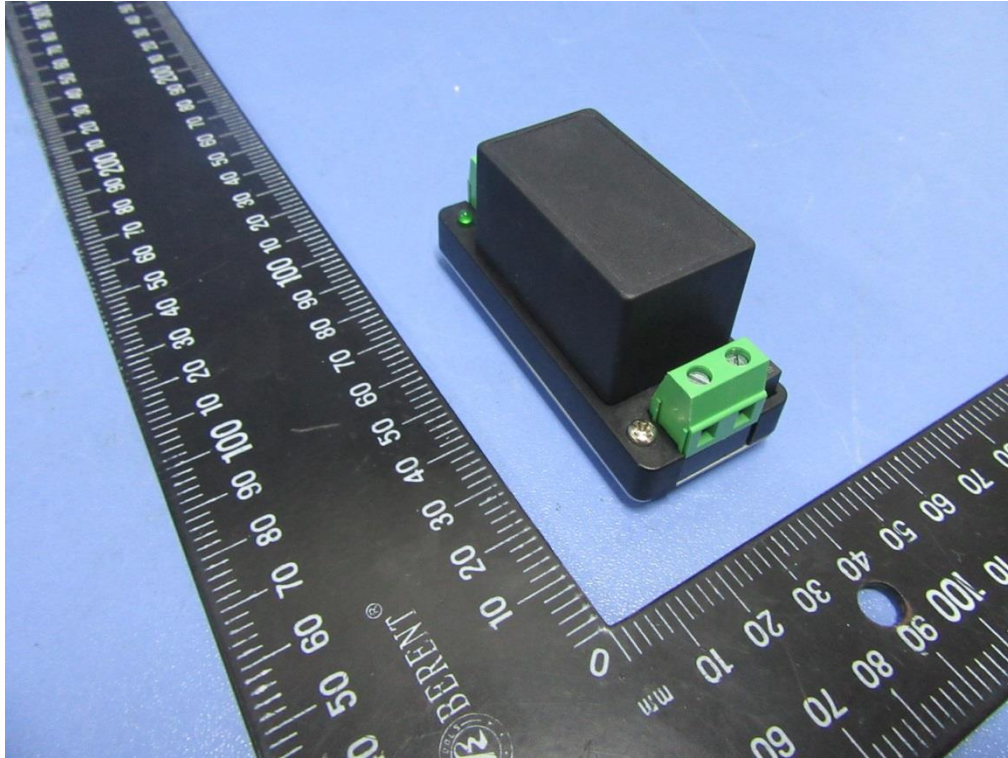


Figure 3. External view 1 (chassis mounting for the models suffix is A2S)

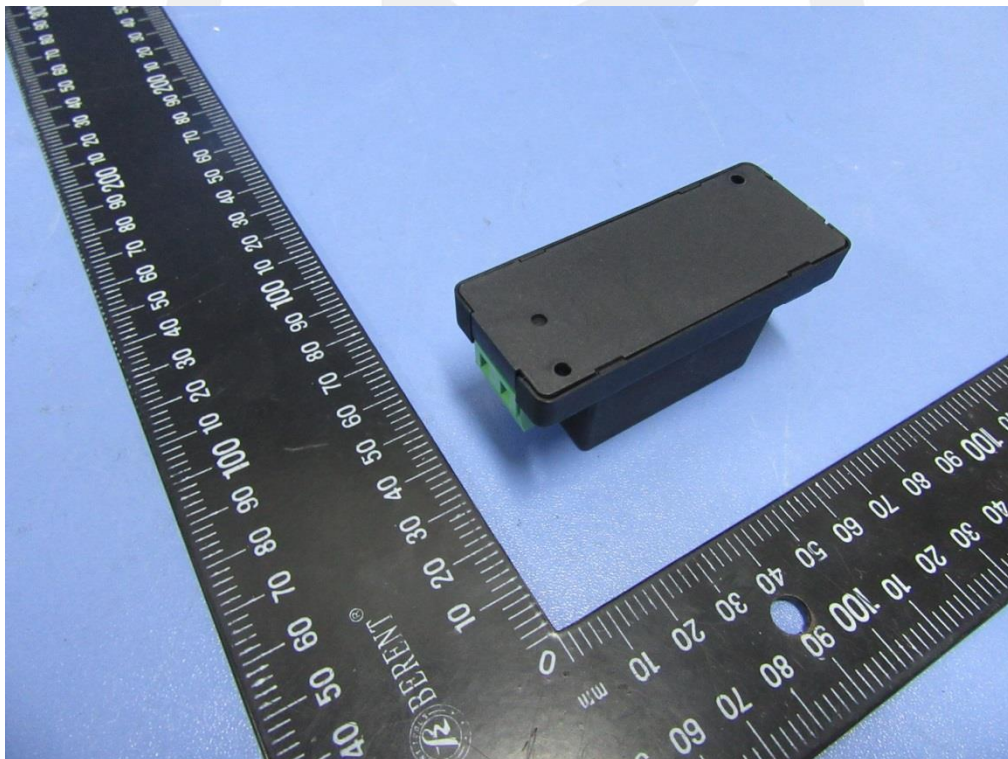


Figure 4. External view 2 (chassis mounting for the models suffix is A2S)

Photo

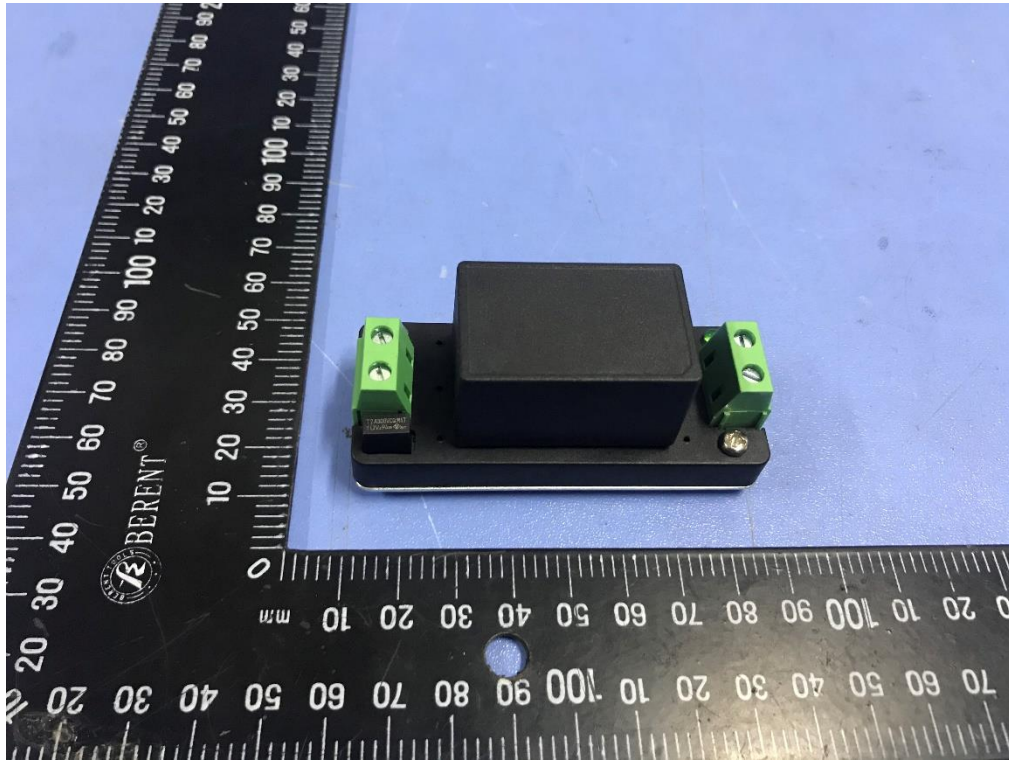


Figure 5. External view 1 (DIN-Rail mounting for the models suffix is A4S)

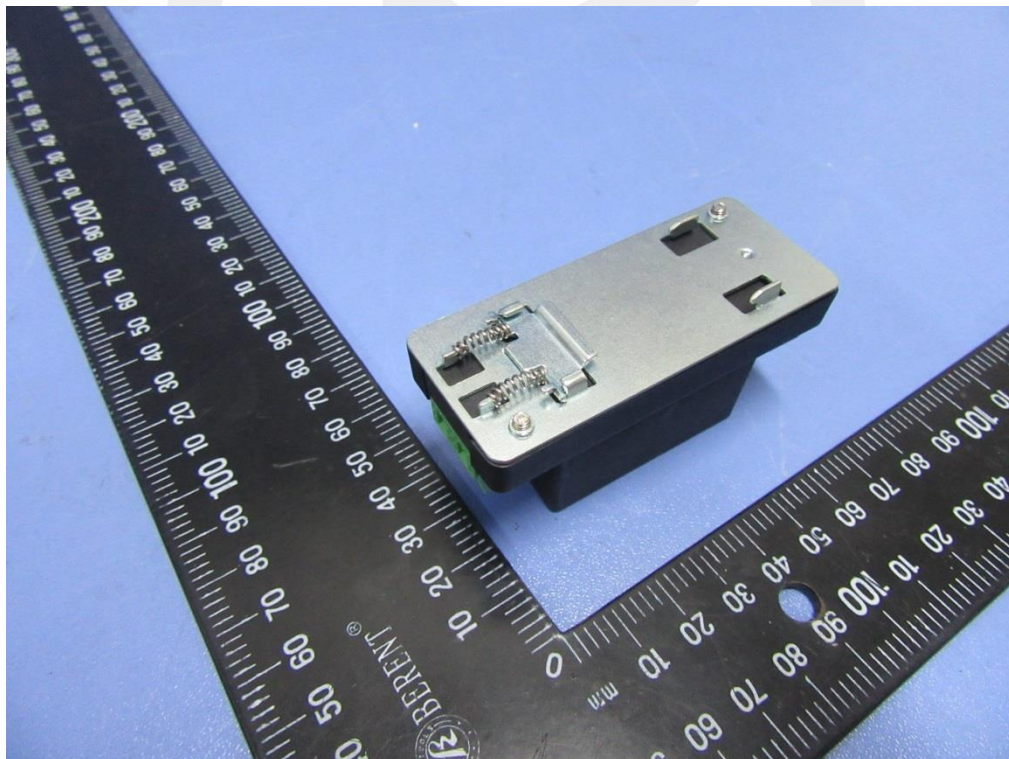


Figure 6. External view 2 (DIN-Rail mounting for the models suffix is A4S)



Photo



Figure 7. Internal view 1 (chassis and DIN-Rail mounting for the models suffix is A2S & A4S)



Photo

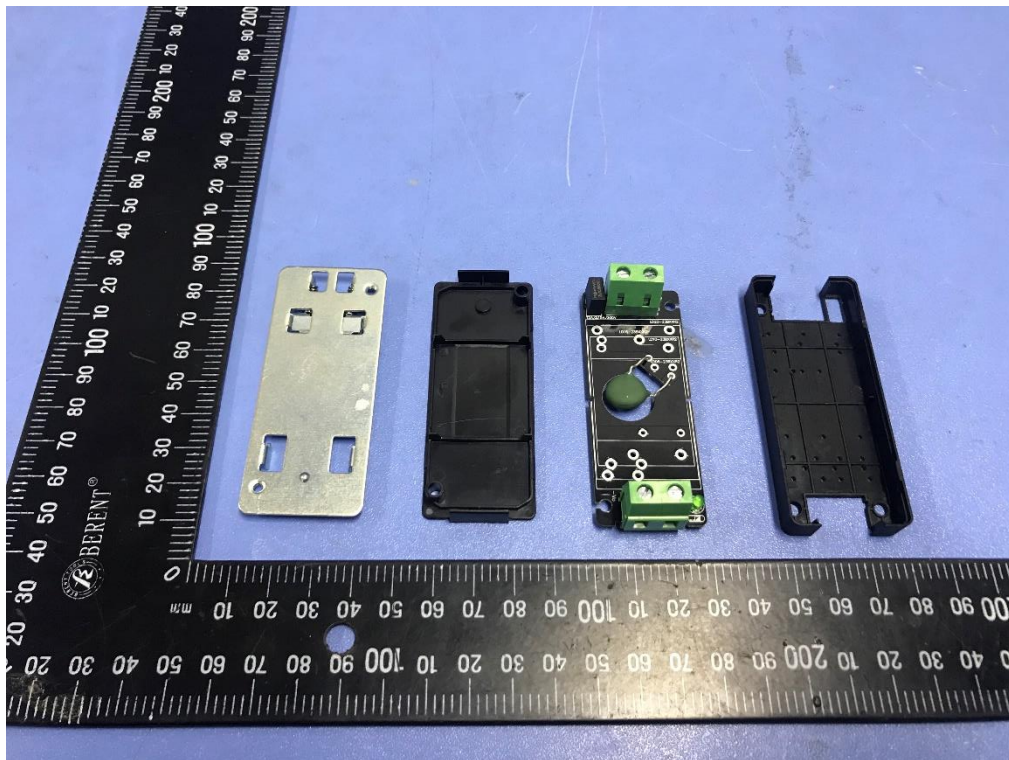


Figure 8. Internal view 2 (chassis and DIN-Rail mounting for the models suffix is A2S & A4S)

Photo

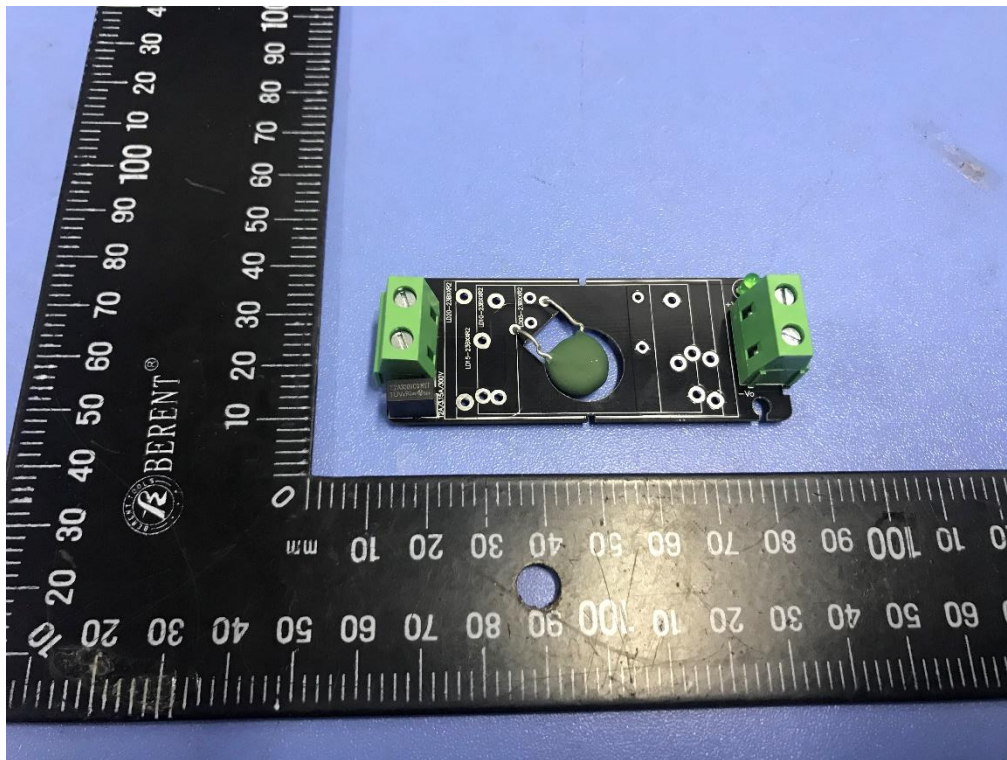


Figure 9. Internal view 3 (chassis and DIN-Rail mounting for the models suffix is A2S & A4S)



Photo

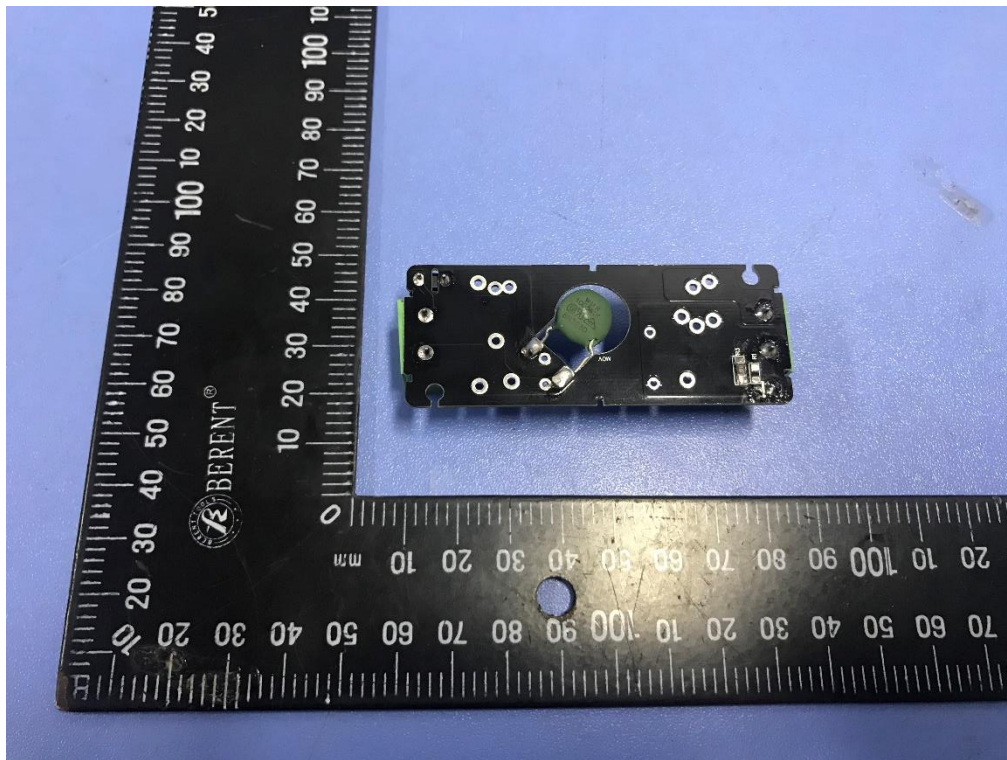
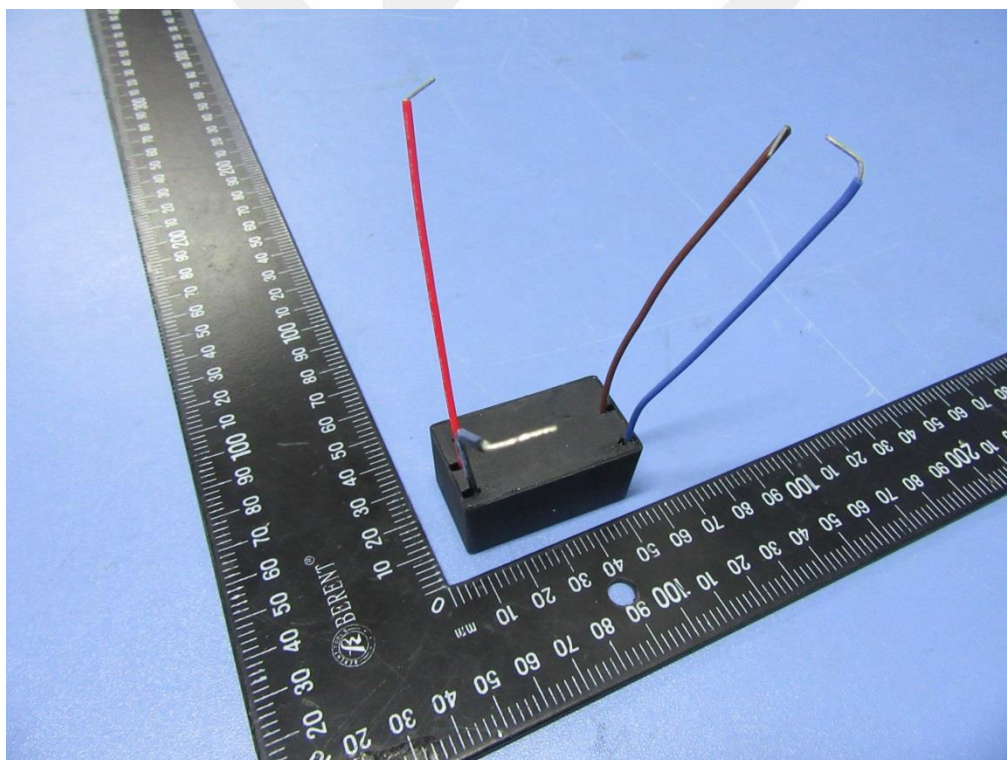


Figure 10. Internal view 4 (chassis and DIN-Rail mounting for the models suffix is A2S & A4S)



Photo

Figure 11. External view 1 (for the models suffix is PM32X15-Sxx-W\*)

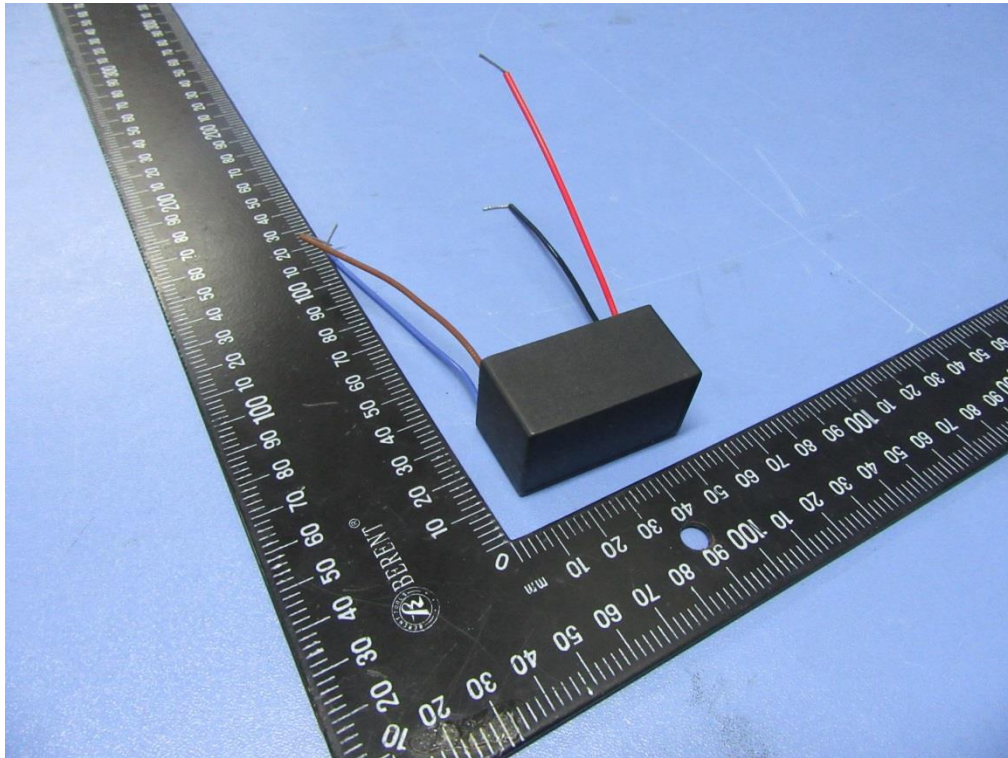


Figure 12. External view 2 (for the models suffix is PM32X15-Sxx-W\*)

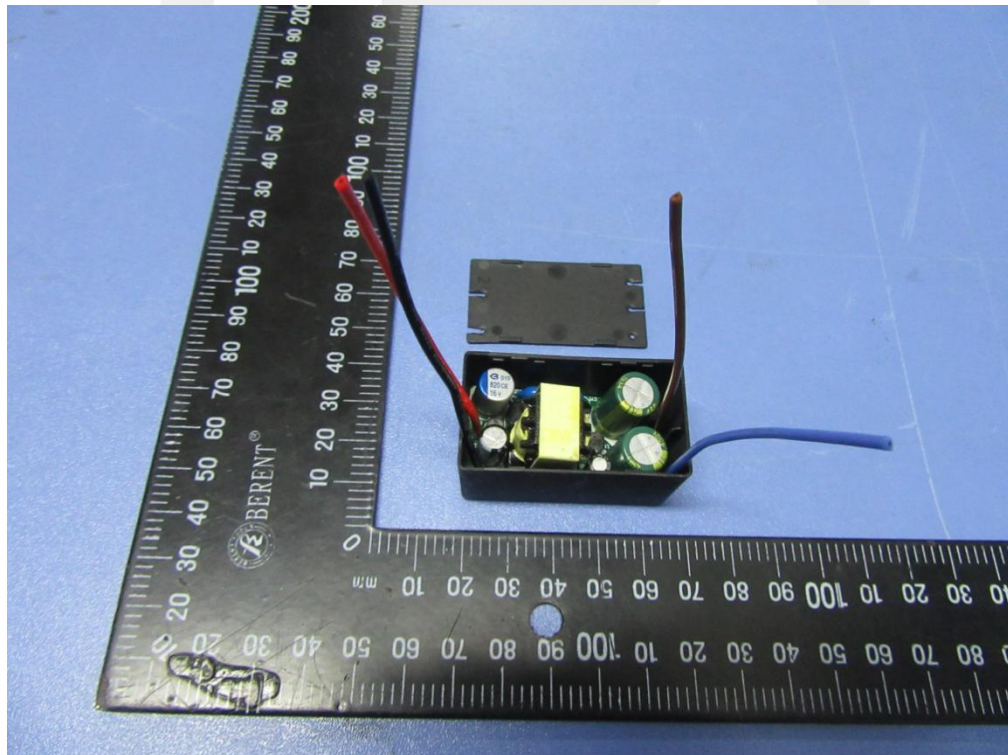


Figure 13. Internal view 1 (for the models suffix is PM32X15-Sxx-W\*)



Photo

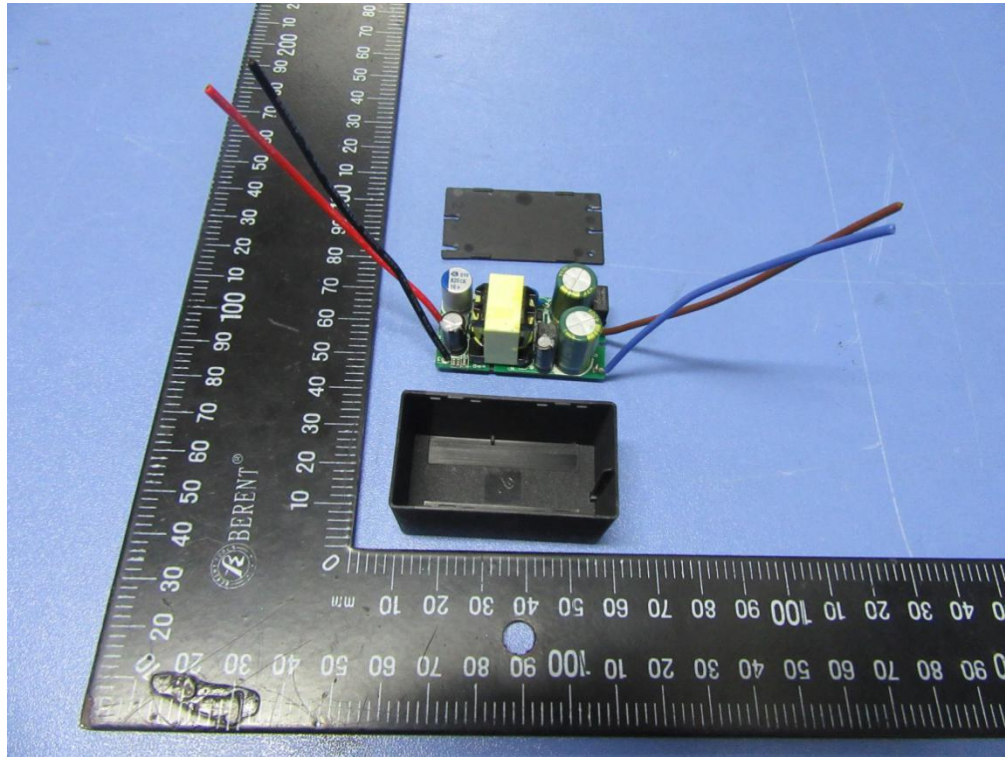


Figure 14. Internal view 2 (for the models suffix is PM32X15-Sxx-W\*)

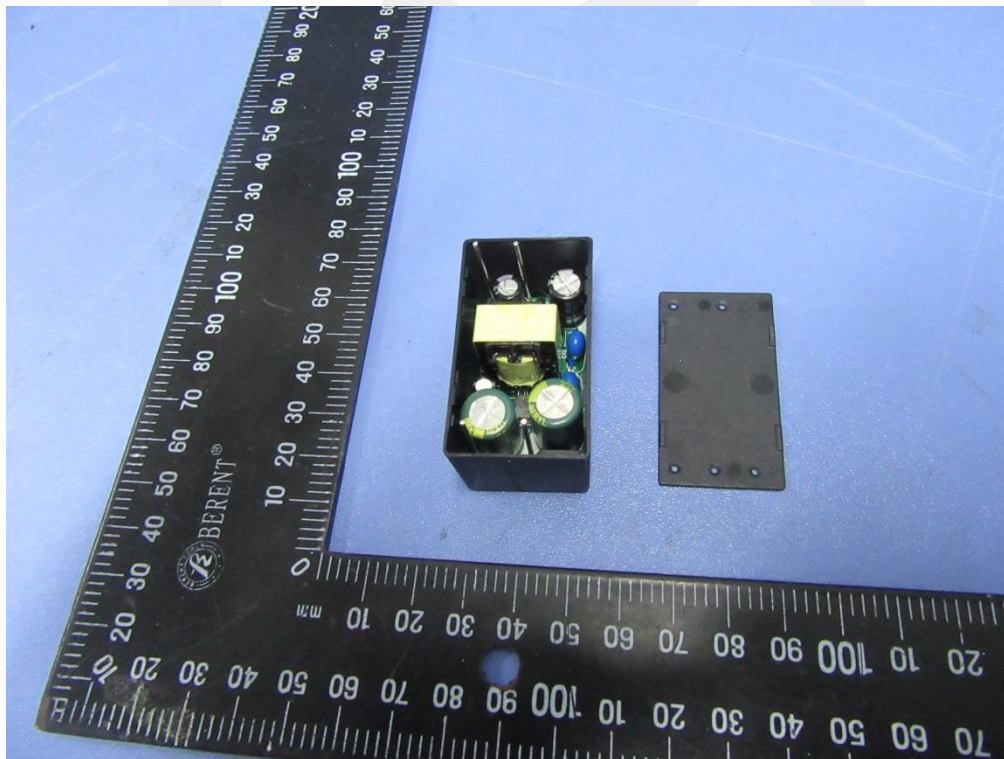


Figure 15. Internal view 1 (standard mounting)

Photo

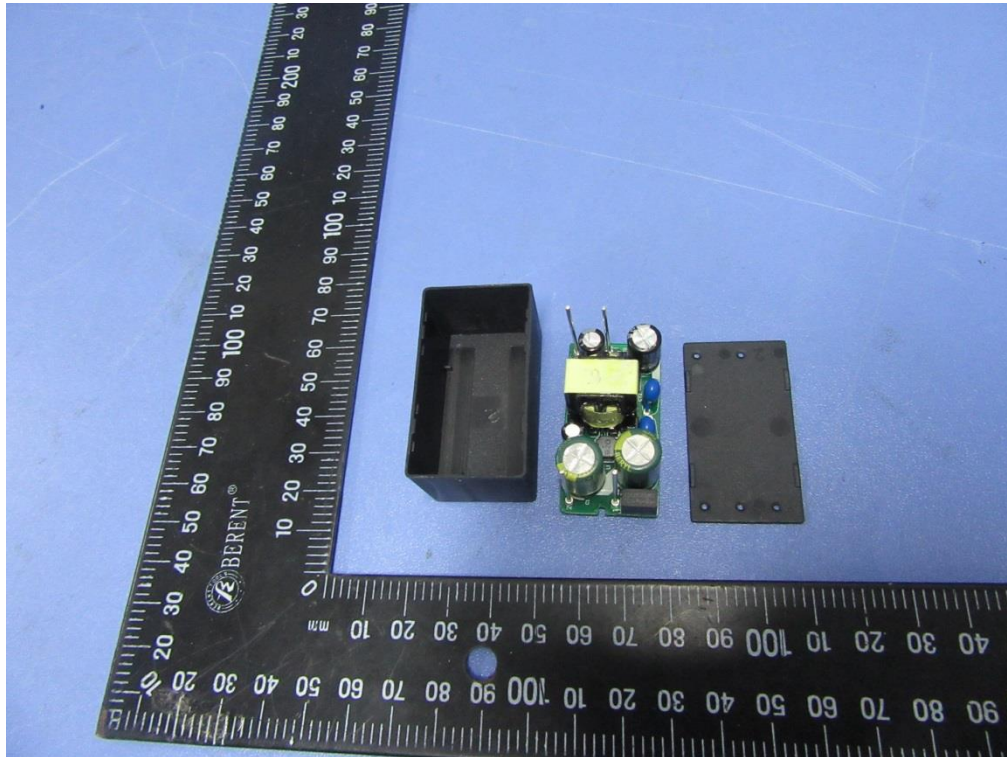


Figure 16. Internal view 2 (standard mounting)

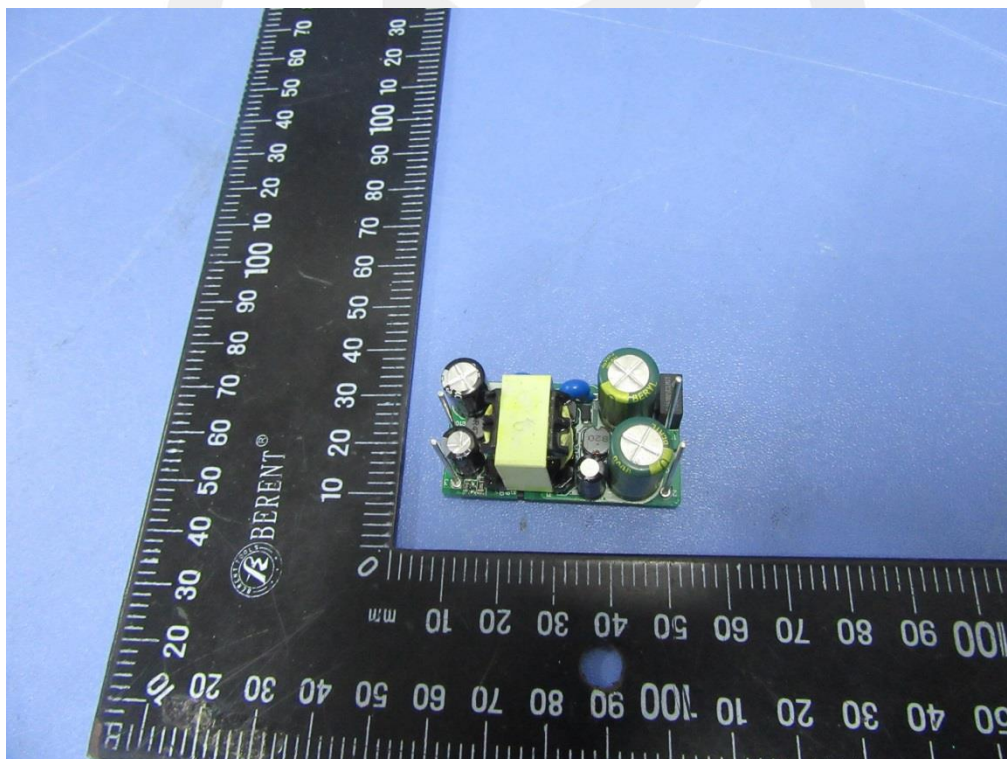


Figure 17. PWB components side view



Photo

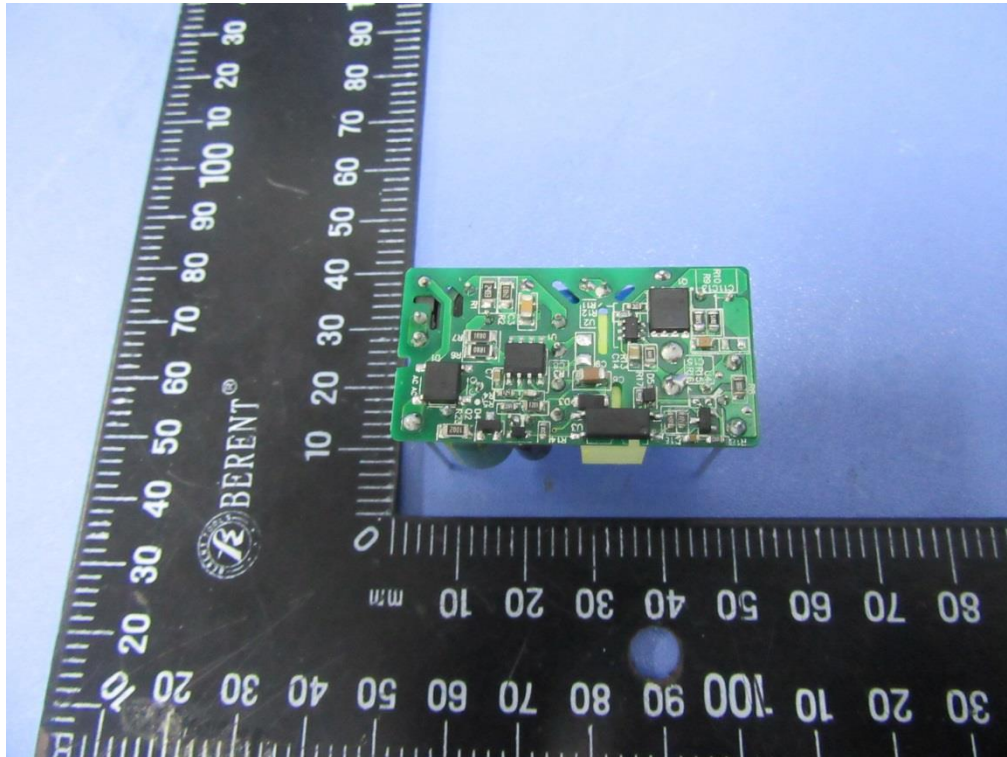


Figure 18. PWB trace side view

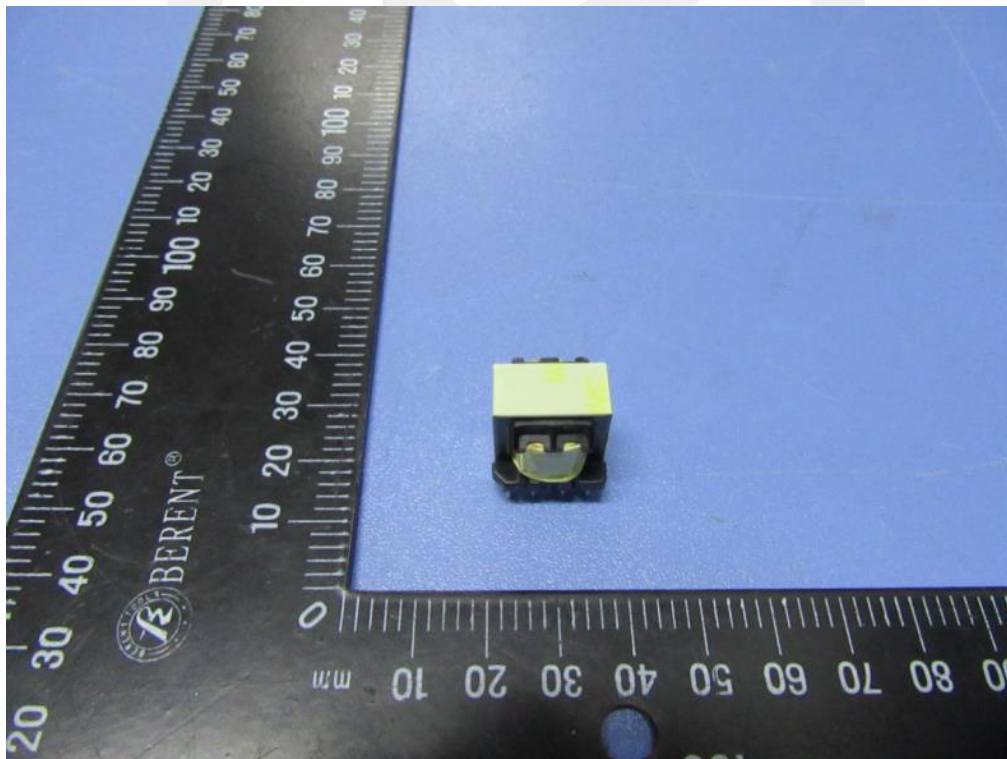


Figure 19. Transformer top view



Photo

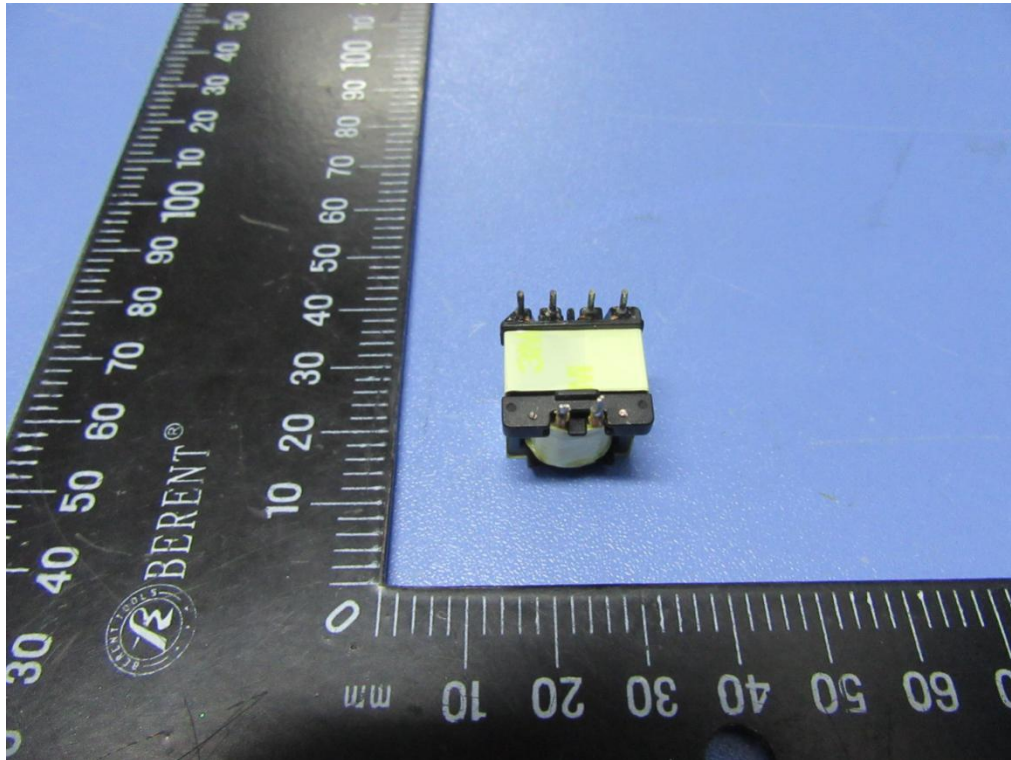


Figure 20. Transformer bottom view

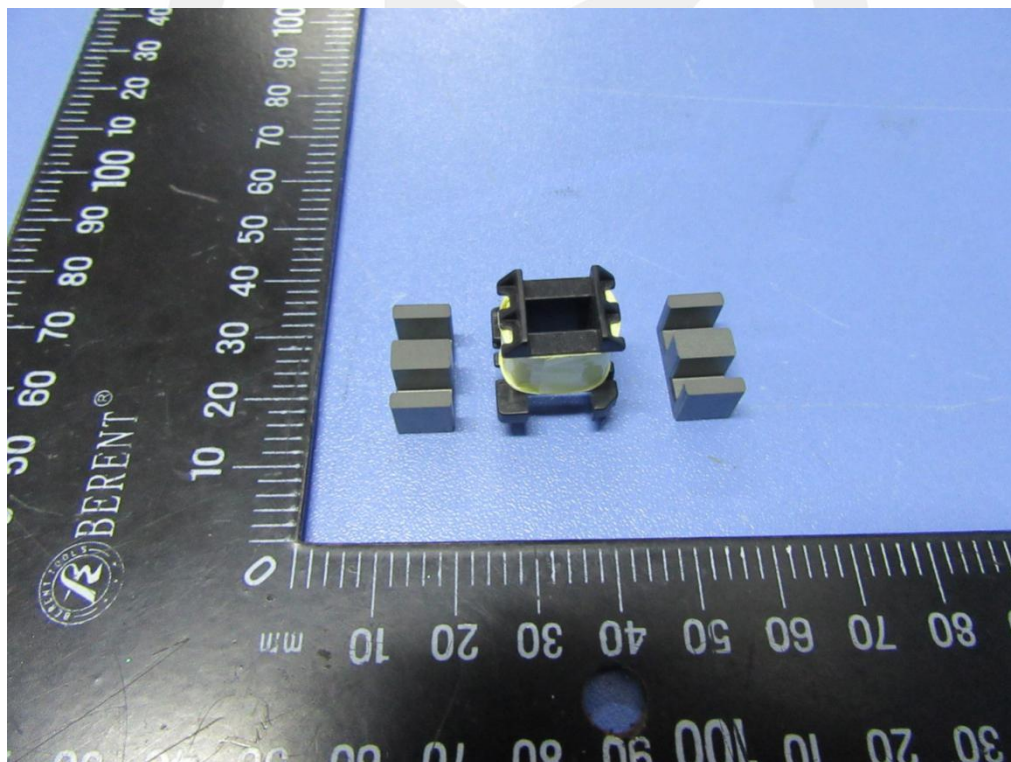


Figure 21. Transformer internal view (core)

Photo

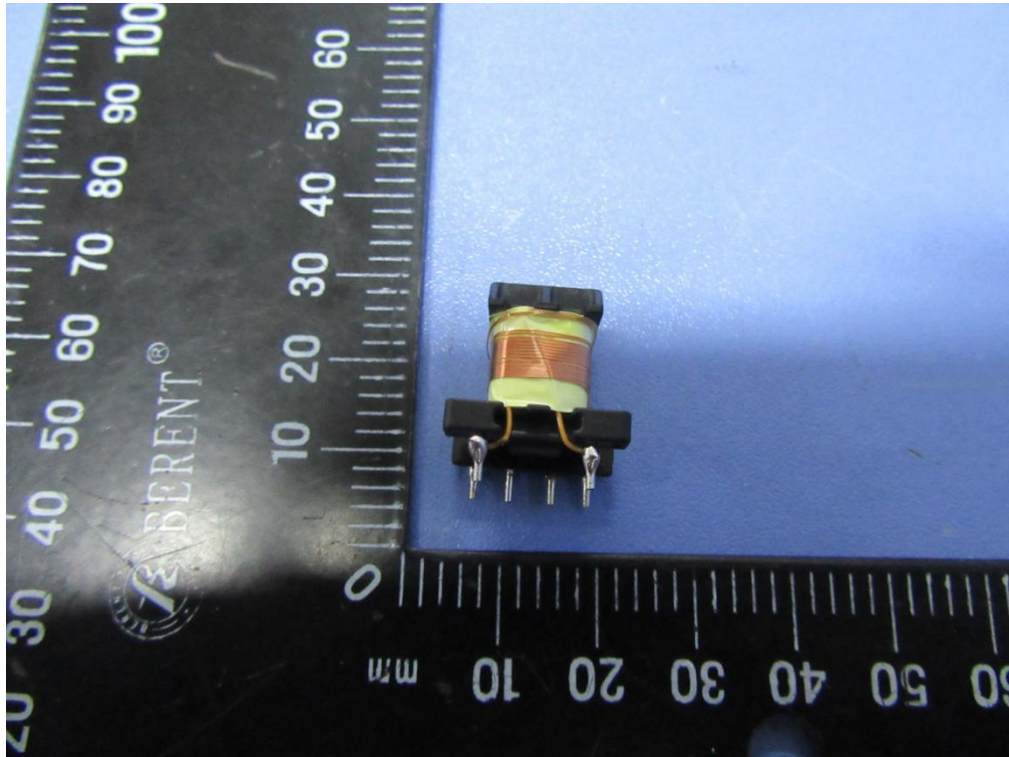


Figure 22. Transformer internal view (N4 winding) for model 51500816

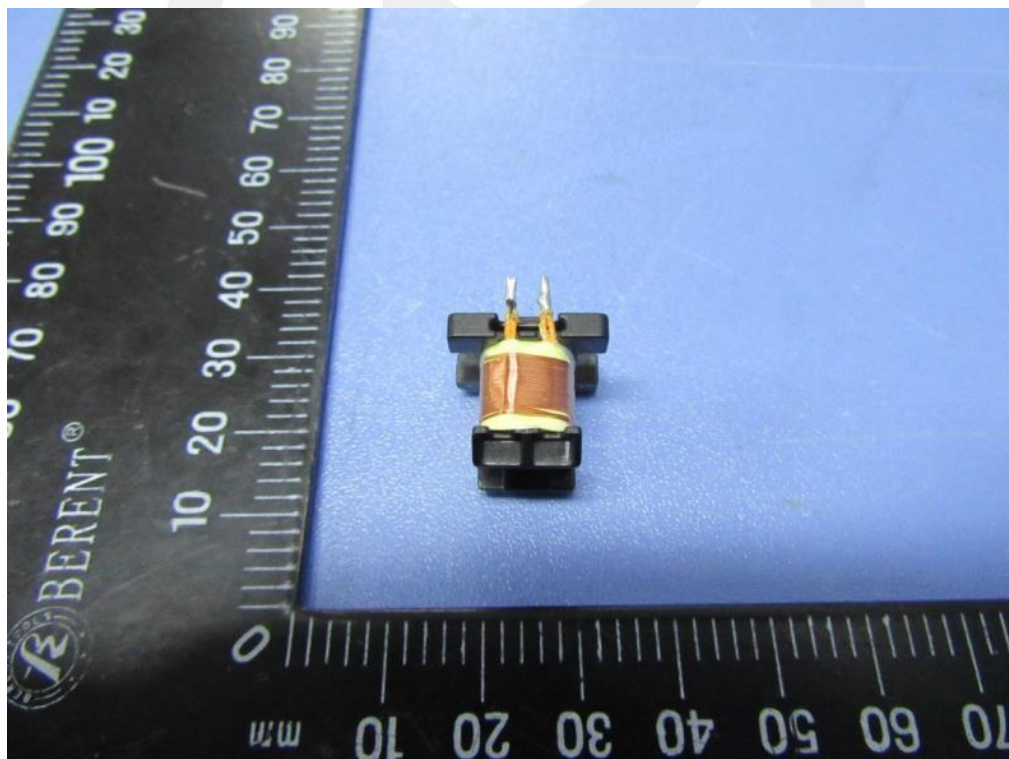


Figure 23. Transformer internal view (N4 winding) for model 51500810

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