


Test report no.: <i>Prüfbericht-Nr.:</i>	CN22DQGU 001 part 1 of 2	Order No.: <i>Auftragsnr.:</i>	180246649	Page 1 of 76 <i>Seite 1 von 76</i>
Client reference no.: <i>Kunden-Referenz-Nr.:</i>	N/A	Order date: <i>Auftragsdatum:</i>	2022-11-11	
Client: <i>Auftraggeber:</i>	ZHEJIANG AMAN LIGHTING CO., LTD. No. 171 North Star-Bridge Road, Yuhang District, Hangzhou, 311100 Zhejiang P.R. China			
Test item: <i>Prüfgegenstand:</i>	Smart Plug			
Identification / Type no.: <i>Bezeichnung / Typ-Nr.:</i>	SPL-W-TY-UK-RY; SPL-W-TY-PM-UK-RY; SPL-W-TY-UK-RY-Fu; SPL-W-TY-PM-UK-RY-Fu			
Order content: <i>Auftrags-Inhalt:</i>	Type test			
Test specification <i>Prüfgrundlage:</i>	BS 1363-3:2016+A1:2018			
Date of sample receipt: <i>Wareneingangsdatum:</i>	2022-10-11			
Test sample no.: <i>Prüfmuster-Nr.:</i>	A003308646			
Testing period: <i>Prüfzeitraum:</i>	2023-10-10 - 2023-11-09			
Place of testing: <i>Ort der Prüfung:</i>	TÜV Rheinland/CCIC (Ningbo) Co., Ltd.			
Testing laboratory: <i>Prüflaboratorium:</i>	TÜV Rheinland/CCIC (Ningbo) Co., Ltd.			
Test result*: <i>Prüfergebnis*:</i>	Pass			
tested by: <i>geprüft von:</i>	<u>Fan Xu</u>			
Date: 2023-05-22 <i>Datum:</i>	Signed by: Fan Xu	Issue date: 2023-05-22 <i>Ausstellungsdatum:</i>	Signed by: Jie Zheng	
Position / Stellung:	Project Engineer	Position / Stellung:	Report Authorizer	
Other: <i>Sonstiges:</i>	This report was created for the type test of Smart Plug.			
Condition of the test item at delivery: <i>Zustand des Prüfgegenstandes bei Anlieferung:</i>	Test item complete and undamaged Prüfmuster vollständig und unbeschädigt			
* Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark. <i>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</i>				

V05

Test report no.: CN22DQGU 001 part 1 of 2
Prüfbericht-Nr.:

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Remarks
Anmerkungen

1	<p>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</p> <p><i>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</i></p> <p><i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>
2	<p>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</p> <p><i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i></p>
3	<p>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</p> <p><i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i></p>
4	<p>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</p> <p><i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i></p>
5	

**TEST REPORT
BS 1363-3**

**13 A plugs, socket outlets, adaptors and connection units
Part 3: Specification for adaptors**

Report Reference No.: CN22DQGU 001 part 1 of 2

Tested by (name + signature): See cover page

Approved by (name + signature): See cover page

Date of issue.....: See cover page

Testing Laboratory: TÜV Rheinland / CCIC (Ningbo) Co., Ltd.

Address.....: 3F Building C13, R&D Park, No.32 , Lane 299
Guanghua Road, National Hi-Tech Zone, Ningbo, 315048, P. R. China

Applicant's name: ZHEJIANG AMAN LIGHTING CO., LTD.

Address.....: No. 171 North Star-Bridge Road, Yuhang District, Hangzhou,
311100 Zhejiang P.R. China

Test specification:

Standard: BS 1363-3: 2016+A1: 2018

Test procedure: Type test

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

Test Report Form No.: BS 1363-3_2016Edition 1.1

Test Report Form(s) Originator: TÜV Rheinland

Master TRF: Dated 2018-10

Test item description: Smart Plug

Trade Mark: **SKYING**

Manufacturer.....: Same as applicant

Model/Type reference.....: SPL-W-TY-UK-RY; SPL-W-TY-PM-UK-RY;
SPL-W-TY-UK-RY-Fu; SPL-W-TY-PM-UK-RY-Fu

Ratings.....: 13A 240V~, Max. 3120W

<p>Summary of testing:</p> <p>All tests were passed</p>	
<p>Tests performed:</p> <p>Full test.</p> <p>This test report only refers to the tests of adaptor portion; it should be used in conjunction with the test report CN22DQGU 001 Part 2 of 2 for electronic switch portion.</p> <p>Appendix 1: Photos</p>	<p>Testing location:</p> <p>TÜV Rheinland / CCIC (Ningbo) Co., Ltd.</p> <p>3F Building C13, R&D Park, No.32 , Lane 299</p> <p>Guanghua Road, National Hi-Tech Zone, Ningbo, 315048, P. R. China</p>
<p>Copy of marking plate:</p> <p>SKYING</p> <p>Smart Plug</p> <p>Model: SPL-W-TY-UK-RY</p> <p>240V ~ 50Hz</p> <p>Max.Load:13A,3120W μ</p> <p>Support Network:2.4GHz</p> <div style="display: flex; align-items: center; justify-content: space-around;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>BS 1363</p> </div> <div style="text-align: center;">  <p>max. 13 A</p>  </div> </div> <p>Remark: All models have the same marking plate except the model name.</p> <p>Manufacturer: Hangzhou Sky-Lighting Co., Ltd.</p> <p>Address: No.161 North Star-Bridge Road, Linping, Hangzhou, Zhejiang, 311100 China</p> <p>Importer: xxxxxxx</p>	

General product information:

Smart plug, 13A 240V~, Max. 3120W, IP20, with BS 1363 plug and shuttered outlet, with solid plug pins, with mechanical switch with electric circuits which can be either switched on/off by integrated button or be remote controlled through App.

The socket and plug portion of these two models are same.

Differences between each models are as follow:

Modle	With Power consumption statistics function	Fuse
SPL-W-TY-UK-RY	Without	Without
SPL-W-TY-PM-UK-RY	With	Without
SPL-W-TY-UK-RY-Fu	Without	With
SPL-W-TY-PM-UK-RY-Fu	With	With

Critical components and material list:					
Part	Manufacturer	Type	Technical data	Standard	Approval
Enclosure	SABIC INNOVATIVE PLASTICS B V	PC1003R	PC V-2, Min.1.5mm thickness	BS 1363-3	Test with appliance
Alternative	FORMOSA PLASTICS CORP	Yungsox 1080	PP	BS 1363-3	Test with appliance
Plug holder	CHANG CHUN PLASTICS CO LTD	4130	PBT	BS 1363-3	Test with appliance
PCB	KINGBOARD LAMINATES HOLDINGS LTD	KB-6160C	V-0, 130°C, 1.2mm thickness	EN 60669-2-1	Test with appliance
Alternative	GOLDENMAX INTERNATIONAL TECHNOLOGY (ZHUHAI) LTD	GDM-R1	V-0, 130°C, 1.2mm thickness	EN 60669-2-1	Test with appliance
Fuse	Shanghai Fullness Electrical Co., Ltd	GFH	15A, 250V~	EN 60127-1 EN 60127-2	TUV
Alternative	Shanghai Fullness Electrical Co., Ltd	GTH	15A, 250V~	EN 60127-1 EN 60127-2	TUV
Alternative	Suzhou Walter Electronic Co., Ltd	FSC	15A, 250V~	EN 60127-1 EN 60127-2	VDE
Alternative	Suzhou Walter Electronic Co., Ltd	TSC	15A, 250V~	EN 60127-1 EN 60127-2	VDE
Relay	Ninggbo Yinzhou Jie ying Electrical Parts Co., Ltd	JY32FNH- SH-DC3V-A	20A, 250V,T85	EN 61810-1	TUV
Varistor	Hongzhi Enterprises Ltd	HEL7D471K	Max. continuous voltage: 300VAC	IEC 61051-1 IEC 61051-2 IEC 61051-2- 2	VDE
Alternative	Shantou High-New Technology Dev,Zone Songtian Enterprise Co., Ltd	07D471K	Max. continuous voltage: 300VAC	IEC 61051-1 IEC 61051-2 IEC 61051-2- 2	VDE
Alternative	Xiamen Set electronics Co., Ltd	SFV7D471K	Max. continuous voltage: 300VAC	IEC 61051-1 IEC 61051-2 IEC 61051-2- 2	TUV
Internal	Cixi Haosheng Wire & Cable Co.,	H07V-K	1,5mm ²	EN 50525-2-	VDE

wire	Ltd			31	
Alternative	Ningbo Ruichua Electronic Technology Co., Ltd	H05VV-F	1,5mm ²	EN 50525-2-31	VDE
Fuse for current protection	Shenzhen GREAT Electronics Co., Ltd	RXF	10R,1W	EN 60669-2-1	Test with appliance
Contact	CIXI HANDE ELECTRIC APPLIANCE CO.,LTD	H62	Copper content > 58%	BS 1363-3	Test with appliance
Pin	Cixi Yinsheng Electronic Components Factory	HPb59-1	Copper content > 58%	BS 1363-3	Test with appliance
Shutter	CHANG CHUN PLASTICS CO LTD	4130	PBT	BS 1363-3	Test with appliance

Possible test case verdicts:

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

Testing.....:

Date of receipt of test item.....: See cover page

Date (s) of performance of tests.....: See cover page

General remarks:

The test results presented in this report relate only to the object tested.

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"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma (~~point~~) is used as the decimal separator.




The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report.

Factory info: Hangzhou Sky-Lighting Co., Ltd.

Address: No.161 North Star-Bridge Road, Linping, Hangzhou, Zhejiang, 311100 China

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
Seq. 1	Inspection, measurement, gauging and manipulation		—
5	All tests shall be type tests		—
6.1	Classification		—
	Adaptors shall be classified:		—
	• fusing capability	Fused(SPL-W-TY-UK-RY-Fu; SPL-W-TY-PM-UK-RY-Fu) / unfused (SPL-W-TY-UK-RY; SPL-W-TY-PM-UK-RY)	—
	• switching capability	switched(electronic)/ unswitched	—
	• adaptor character	multiway / intermediate / adaptor plug / shaver adaptor	—
	• method of connecting the cable	Rewirable / non-rewirable	—
	• shaver adaptor for class II applications	with an un-terminated brass earth pin / with ISOD	—
6.2	Rating	13A	—
	The rated current shall be		—
	• equal to the sum, if this is lower than 13 A		N/A
	• 13 A, if the sum is higher than 13 A;		N/A
	• 13 A for an adaptor plug;		N/A
	• 13 A, if the sum is equal to or greater than 13 A		P
7	Marking and labelling		—
7.1	Adaptors shall be legibly and durably marked with the following information		—
	a) trade mark, name, or identification	SKYING	P
	b) the number of British standard	BS 1363	P
	c) terminals identified by symbol		N/A
	d) the word FUSE or FUSED was on adaptor		N/A
	e) Rated current of fuse link fitted for non-rewirable plugs		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	f) On the engagement surface with their total maximum electrical load marking	13A	P
	g) Marking for shaver adaptor		N/A
	Marking of fuse fitting for shaver adaptor		N/A
	h) Marked with:		—
	1) rated volts	240V	P
	2) Nature of supply	~	P
7.1.1	Type of marking on adaptors	Engraving / Moulding / Label	P
	After rubbing test as specified in the standard, the marking remain legible		P
7.2	Label to indicate the rating of fuse link fitted for rewirable intermediate adaptor & adaptor plug.		N/A
7.3	The free end of assembly have a label attached		N/A
	a) statement : “The flexible cable of this plug must be connected to a piece of equipment before being plugged into a socket-outlet ”		N/A
	b) max. rating of equipment to be fitted		N/A
	c) colour code of core: green-and –yellow, blue, brown		N/A
	d) statement : “ This lead must not be used with equipment requiring the protection of an earth continuity conductor ”		N/A
7.4	Rewirable adaptors: adequate instruction provided for the safe connection of the appropriate flexible cables, including clear instructions for the removal of insulation from the conductors.		N/A
7.5	Symbols used		—
	- amperes	A	P

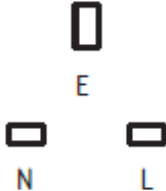
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- volts	V	P
	• alternating current	~ / a.c.	P
	• Direct current d.c.	— — — —	N/A
	- line	L	N/A
	- neutral	N	N/A
	- earth:	 (preferred) or 	N/A
	- supply line terminal (intermediate adaptors)	Lin or L1	N/A
	- load line terminal (intermediate adaptors)	Lout or L2	N/A
	- fuse		N/A
9.1	Live parts of adaptors shall not be accessible when wired as in use and in full engagement in a corresponding socket-outlet		P
	Removal of detachable fuse carriers shall not result in live parts becoming accessible when the adaptor is in full engagement with the socket outlet.		N/A
9.1.1	A test pin is applied, it shall not be possible to touch live parts	5N	P
9.2	Adaptors shall be so designed, live part are not accessible		P
9.2.1	A test pin is applied, it shall not be possible to touch live parts		P
9.3	The plug portion shall be protected the user against accidental contact with live parts during insertion or withdrawal from corresponding socket-outlets.		P
	The socket-outlets shall be protected the user against accidental contact with live parts during insertion or withdrawal of plugs.		P
9.5	For intermediate adaptor & adaptor plug, the		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	free end of the flexible cable shall be encapsulated in insulating material		
9.6	A metal pin shall not be touch live parts through earthing apertures of socket-outlet of an adaptor.		P
10.1	When inserting a plug, the earth connection is made before the current-carrying pins of the plug become live.		P
	When withdrawing a plug the current-carrying parts shall not separate before the earth contact is broken		P
11.1	Terminals & terminations shall provide for effective clamping and securing of conductors		N/A
11.2	Rewirable adaptors shall be provided with screw-type terminals		N/A
11.3	Non-rewirable adaptors shall be provided with soldered, welded, crimped or similar terminations		N/A
	Screwed and 'snap-on' terminals not used		N/A
	Crimped connections shall not be made on to pre-soldered flexible cables unless the soldered area is entirely outside the crimp		N/A
11.4	Terminals in rewirable adaptors shall be of screw-type for the connection of 0.5 mm ² to 1.5 mm ² flexible cables		N/A
11.5	Pillar terminals use clamping screws of sufficient length to extend to the far side of the conductor hole		N/A
	Clearance between each side of the major diameter of clamping screw and conductor hole does not exceed 0,4 mm.		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
11.6	Declared outside diameter of terminal screw: ≥3 mm or 6 B.A		N/A
	Thread cutting or/and thread forming screws not used.		N/A
11.7	Insulating barriers in intermediate adaptors or adaptor plugs shall be an integral part		N/A
	a) the earth conductor coming into contact with parts at line potential		N/A
	b) the line conductor coming into contact with the line pin assembly		N/A
11.8	Intermediate adaptors or adaptor plugs prevented strain to the earth connection before the line and or neutral connection		N/A
11.9	Terminals of intermediate adaptors or adaptor plugs shall be so located or shielded that should a strand of a flexible conductor escape no risk of accidental connection between live parts and accessible external surfaces		N/A
	a) not touch any metal part so as to by-pass the fuse link		N/A
	b) not touch any metal part which is accessible		N/A
	c) not reduce creepage distance and clearance to accessible surfaces to less than 1,3 mm		N/A
	The free strand of a conductor connected to an earthing terminal did not touch any live parts.		N/A
12.1	The disposition of the pins shall be as those shown in the standard. (fig. 4a)		P
12.2	The outline of the adaptors not exceed the dimensions shown in Fig 4a) for a distance of not less than 6,35 mm from the engagement surface		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Pin disposition, length and body outline shall be checked by use of the gauge shown.		P
	Pin and sleeve dimensions shall be checked by measurement		P
	for non-solid pins where the chamfers general fell within the profiles of fig. 4 and their adequacy shall be checked by 12.11.5		N/A
12.2.1	The line & neutral pin shall be entered into the gauge for a distance not exceeding 2 mm.		P
	The adaptor shall enter the gauge fully when a force of 10 N or less is applied.		P
12.3	No part of pins from the periphery of the plug measured along the engagement surface shall be less than 9,5 mm	Measured: 9,79mm	P
12.4	The fuse link complied with standard		N/A
	Fuse link is provided within the body it shall be mounted in contacts only between the line plug pin and the corresponding line socket contact		N/A
	The fuse could not displace when the adaptor is in use		N/A
	Fuse link could not be left in inadequate contact		N/A
	Impossible to replace the fuse link in an adaptor unless the adaptor is completely withdrawn from the socket-outlet.		N/A
12.5	In non-rewirable intermediate adaptors and adaptor plugs, where the fuse link is retained by means of a fuse carrier:		—
	a) non-detachable during normal replacement of the fuse link		N/A
	b) readily identifiable in relation to its adaptor by means of marking		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
12.11.1	All exposed surface of the adaptor plug pins shall be smooth & free from balls or sharp edges.		P
12.11.2	Those surface of non-solid adaptor plug pins are visible.		N/A
12.11.3	All seams and joint non-solid adaptor plug pins shall be closed over their entire length.		N/A
	Test with a probe of 0,2 mm diameter of steel		N/A
12.11.6	Adaptor plug pins and ISOD shall have adequate mechanical strength to ensure that they could not be distorted by twisting.		P
12.11.6.1	Each pin is twisted with a torque of 1 Nm for 60s		P
	After the test, the adaptor shall fit the gauge shown in Fig.5		P
12.15	Suitable means shall be provided for withdrawing the intermediate adaptors and adaptor plugs without subjecting cable to stress		N/A
12.16	Non-rewirable intermediate adaptors and adaptor plugs shall be fitted with flexible cables in accordance with 19.4.		N/A
12.17	Conductive component parts of adaptors can not be displaced so as to affect adversely the safety or proper operation of the adaptors.		P
12.18	Line and neutral adaptor plug pins shall be fitted with insulating sleeves		P
	The dimensions of the pin and sleeve as fig 4a)		P
	Sleeves shall not be fitted to any earthing plug pin		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
13.1	<p>The disposition of the socket contacts shall be</p>  <p>as right disposition:</p>		P
	No projection on the engagement surface of the adaptor.		P
	The spacing of the socket contacts, 'Go' gauge shall be used to test the contacts.		P
	Raised marking shall not project more than 0,5 mm form the engagement face.		P
13.2	The line and neutral socket contact shall make satisfactory contact with the corresponding pins of a plug and the check is by the use of the gauge in Figure 12, 'contact gauge'		P
13.3	The travel of current-carrying pin in any position the socket contacts may occupy, not less than 9,6 mm, and the check is by the use of gauge in Figure 14, 'non-contact gauge'	Measured: Min. 9,9mm	P
13.4	For adaptor socket-outlets intended to accept plugs complying with other standards, the disposition & dimensions shall reliable and safe interconnection		N/A
	There shall be no projection on the engagement surface of the adaptor.		N/A
	The spacing of the socket contacts shall correspond with that of the plug pins.		N/A
13.5	The socket contacts shall be self-adjusting as to contact making.		P
	The means for producing the contact pressure shall be associated with each socket contact independently and shall not rely on any insulating material in contact with the socket contact		P
13.5.2	Socket contacts of adaptors shall have effective contact with a corresponding plug pin. (spec: ≤ 25 mV)	Measured: 6,5mV	P
13.5.3	The earth, Line and Neutral socket contacts shall have effective mechanical contact with a corresponding plug pin.		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The checking with the withdrawal pull of a gauge shall be satisfied (For adaptor socket-outlet for BS 1363 plugs)		P
	The checking with the withdrawal pull of a gauge shall be satisfied the standard.		P
	For other standard, the maximum force shall be specified in the appropriate standard		N.A
13.8	The apertures for line, neutral and earth plug pins shall be as follows:		—
		Spec (mm)	Measured (mm)
	Line	$\leq 7,2 \times 4,8$	7,04 x 4,52
	Neutral	$\leq 7,2 \times 4,8$	7,02 x 4,50
	Earthing	$\leq 8,8 \times 4,8$	8,54 x 4,54
13.9	The distance from the apertures of line and neutral to the periphery of the engagement surface, Required : $\geq 9,5 \text{ mm}$ / 18,0 mm	Measured:12,20mm	P
13.10	The adaptor with associated plugs and cables shall not impose undue strains on fixed socket outlet		P
13.10.1	a) The adaptor fitted with the device and counterweight. The total mass not exceed 800 g		P
13.10.1	b) The additional torque which has to be applied to the socket-outlet to maintain the engagement face in the vertical plane shall not be greater than 0,7 Nm	Measured torque = 0,21Nm	P
13.13	Electronic components incorporated in adaptors shall conform to Annex H		P
19.2	Cable anchorage in rewirable adaptors shall anchor the cable securely to the adaptor		N/A
	a) not be released from the outside without the use of a tool		N/A
	b) not possible to touch cable anchorage screws		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	c) the cable is not clamped by a metal part bearing directly		N/A
	d) at least one part of the anchorage is securely fixed to the adaptor		N/A
	e) clamping the cable does not require the use of a special purpose tool		N/A
	f) not distort the engagement face of the plug when tightening the cable anchorage screws		N/A
	g) the cover may be correctly fitted without damage		N/A
19.3	Screws when clamping the flexible cable shall not serve to fix other components		N/A
19.4	Non-rewirable adaptors shall be fitted with flexible cables conforming to the relevant parts of BS EN 50525 or the requirements of the specification appropriate.		N/A
19.6	The cable entry to rewirable adaptors shall be so shaped as to prevent damage to the cable		N/A
8	Clearances, creepage distances and solid insulation		—
	The distance between lead wires in the pinch of a neon lamp with external resistor shall be a minimum of 1 mm		N/A
8.1	Clearances		—
8.1.1	Clearances for basic insulation	>4 mm	P
8.1.2	Clearances for functional insulation	3,3mm	P
8.1.3	Clearances for supplementary insulation		N/A
8.1.4	Clearances for reinforced insulation		N/A
8.1.5	The minimum contact gap shall be 1,2 mm in the open position.		N/A
8.2	Creepage distances		—

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
8.2.1	Creepage distances for basic insulation	>4 mm	P
8.2.2	Creepage distances for functional insulation	3,3mm	P
8.2.3	Creepage distances for supplementary insulation		N/A
8.2.4	Creepage distances for reinforced insulation		N/A
8.3	Solid insulation		—
8.3.1	The insulation shall continue to conform to the electric strength test with clause 15.1.3		P
	Functional insulation	1500 V	P
	Basic insulation	1500 V	P
	Supplementary insulation	1500 V	N/A
	Reinforced insulation	3000 V	N/A
	During the test, no breakdown or flashover occurred		P
8.4	Requirements for printed wiring boards and equivalent construction		—
21	Screws, current-carrying parts and connections		—
21.1	Screwed connections, electrical and otherwise, shall withstand the mechanical stresses		N/A
	Screws directly transmitting electrical contact pressure shall screw into metal		N/A
	Screws shall not be of metal which was soft and liable to creep		N/A
	Screws shall not be of insulating material if replace by a metal screw would affect the safety		N/A
	Contact pressure in electrical connections within the plug shall not be transmitted through insulating material		P
21.1.1	Torque test:		N/A
	- 10 times for thread of insulating material		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	- 5 times for others		N/A
	During the test, no damage impairing the further use of the screwed connection		N/A
21.2	Thread-cutting and thread-forming screws shall not be used for the making of current-carrying or earth continuity connections.		P
	Screws shall locked against loosening, if the connection carried current.		N/A
21.3	Current-carrying parts shall be of brass		P
	earthing plug pins shall be of brass		P

Seq. 2	General		—
5	All tests shall be type tests		P
9.4	Resilient covers of adaptors, no risk that, as a result of undue pressure, live parts could penetrate the cover		P
	The design of the apparatus shall be steadied force of 240^{+0}_{-10} N.	Test force: 240 N	P
	A test voltage of 2000 V ± 60 V 50 Hz is applied for 60^{+5}_0 s between all live parts bonded together and the earthed test pressure block.	Test voltage: 2000 V	P
	During the test no flashover or breakdown shall occur.		P
	After the test, it shall not be possible to touch live parts.		P
19.1	The entry of the flexible cable shall be between the current-carrying pins at the side of the adaptor opposite the earth pin.		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The cable anchorage shall be such that the conductors are relieved from strain, including twisting, where they are connected to the terminals.		N/A
	The cable anchorage did contain the sheath and should either be of insulating material.		N/A
	Tying the cable into a knot or tying the ends with string or the like not used		N/A
19.1.1	Rewirable adaptors are fitted with a 2-core flexible cable. The conductors are introduced into the terminals and the terminal screws tightened just sufficiently to prevent the conductors easily changing their positions		N/A
	Non-rewirable adaptors, the test is carried out with the cable with which it is supplied		N/A
	The flexible cable is then subjected 25 times to the pull given in Table 2		N/A
	The flexible cable is subjected to the torque shown in Table 2		N/A
	During the test, the insulation of the flexible cable shall not be damaged.		N/A
	A voltage of 3750 V is applied for 60 s between the conductors. No breakdown or flash over is occurred.		N/A
	After the tests, the displacement of flexible cable shall not displace by more than 2 mm		N/A
12.14	The degree of flexibility of mounting of the adaptor plug pins or the angular movement of the pins in the base shall be not greater than 3o30'	Max. 2,5°	P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	After all tests have been completed, the plug shall fit the gauge shown in fig.5		P
12.19.2	A 50Hz voltage of substantially sinusoidal waveform is applied between each L and N pin and a thin metal strip wrapped around the base of the plug pin sleeve adjacent to the base		P
12.19.3	The test apparatus for resistance to abrasion (see fig.9)		P
	The plug is moved 10,000 times in each direction (20,000 movements)		P
	The test shall be made on one pin of each plug		P
	After the test, the sleeve shall not show damage which might impair the further use of the plug		P
	The sleeve shall not have been penetrated or creased		P
12.19.2	A 50 Hz voltage of substantially sinusoidal waveform is applied between each L and N pin and a thin metal strip wrapped around the base of the plug pin sleeve adjacent to the base	1250 V; 60 s	P

Seq. 3	General		—
5	All test shall be type tests		P
20.1.2	For fused adaptors using fuse links complying with BS 1362 the fuse clips shall have adequate mechanical strength.		N/A
20.1.3	For fused adaptors using fuse links complying with BS 646 the fuse clips shall have adequate mechanical strength.		N/A
17	Breaking capacity of adaptors		—
17.1.2	The breaking capacity of socket contacts shall		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	be adequate		
	Test current (A); test voltage(V); number of times	16,25A; 250V; 10 times	P
	After the test, the socket-outlet shall be capable of satisfying the subsequent tests		P
17.1.3	The breaking capacity of switches incorporated in socket outlets shall be adequate		N/A
	Test current (A); test voltage(V); number of times		N/A
	After the test, the adaptors shall be capable of satisfying the subsequent tests		N/A
13.12	Switches shall be so constructed that undue arcing can not occur when the switch is operated slowly		N/A
	The switch shall disconnect at least the line circuit	Electronic switch	P
13.12.1	Following the test in clause 17.1.3, the circuit is broken a further 10 times, each time moving the actuating member by hand over a period of 2 s in a manner such as to attempt to stop the moving contact in an intermediate position causing arcing		N/A
	The actuating member shall be released after 2 s of any arcing shall cease		N/A
20.1.4	The adaptors shall be tested with the impact test apparatus. After the test, it shall not possible to touch live parts using the test pin.		P
16	Temperature rise		—
16.1.2	The adaptor and their surroundings shall not attaining excessive temperatures in normal use.		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	Test current (A), test voltage (V)	14A, 250V~	P
	USB battery charging outlets shall be loaded with their rated currents		N/A
	Temperature rise on line & neutral pin spacer shall not exceed 37 K	Measured: Max. 31,0K	P
	Temperature rise on terminals or terminations shall not exceed 52 K	Measured:	N/A
	Temperature rise on accessible external surface shall not exceed 52 K	Measured: Max. 22,6K	P

Seq. 4	General		—
5	All tests shall be type tests		P
14.2	Adaptors shall be proof against humid conditions.		P
	After the test, the samples show no damage.		P
12.10	For non-rewirable intermediate adaptors & adaptor plugs shall be provided to prevent loose strands of a conductor or current-carrying parts from reducing the min. insulation thickness between such parts and all accessible external surfaces.		N/A
(15.2)	A test voltage 6000 V is applied:		—
	between all current-carrying part connected together and a conducting electrode in contact with the entire outer accessible surface		N/A
19.5	Non-rewirable adaptors - flexible cable is not subjected to excessive bending where it enters		N/A
	The number of flexings 10000 at 60 per minute		N/A
	Test current (A); test voltage(V); weight (kg)		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	During the test, no interruption of the current passing through the conductors and no short-circuited between them.		N/A
	After the test, the sample shall show no damage		N/A
12.19.4	A set of three specimen pins is tested by means of the apparatus as shown in fig. 10.		P
	The test is made on one pin of each plug not used for the test described in 12.19.3.		P
	The apparatus is loaded so that the blade exerted a force on the specimen.	Required load: 2,5N Measured load: 2,5N	P
	The apparatus is placed in a heating cabinet		P
	The thickness of the insulation remaining at the point impression is measured and shall not have been reduced by more than 50%.	Original: 0,92mm Remain: 0,85mm 7,6%	P

Seq.5	General		—
5	All tests shall be type tests		P
14.1	The adaptors shall be subjected to a test in a heating cabinet	70 °C, 7 days.	P
	After the treatment, the samples shall show crack visible with normal.		P
20.1.5	Adaptors are tested 25 drops in the tumbling barrel		P
	After the test the adaptor shall not show damage which affect safety.		P
	No component parts shall have become detached.		P
	And the pins of the adaptor shall not have unduly distorted as checked using the gauge		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	specified in the standard.		
	Screws shall remain tight to a torque not less than 70 % of the original tightening torque.		N/A
	And current-carrying joints shall not have become loose & shall make satisfactory contact.		P
16	Temperature rise		—
16.1.2	The adaptor and their surroundings shall not attaining excessive temperatures in normal use.		P
	Test current (A), test voltage (V)	14A,250V~	P
	USB battery charging outlets shall be loaded with their rated currents		N/A
	Temperature rise on line & neutral pin spacer shall not exceed 37 K	Measured: Max. 32,1K	P
	Temperature rise on terminals or terminations shall not exceed 52 K	Measured:	N/A
	Temperature rise on accessible external surface shall not exceed 52 K	Measured: Max. 23,7K	P
12.9	Adaptors shall be so designed & constructed that they could not readily be deformed to allow access to live parts.		P
10.2	All accessible metal parts of adaptors shall be in effective electrical contact with the earthing socket contact & earthing plug pin.		N/A
10.2.1	a). for metal parts insulated from live parts, by the test described in clause 15.1.3.		N/A
	b). for metal parts connected to an earthing terminal or earthing plug pin	Test current: 25 A;	N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The resistance between the earthing plug pin or earthing terminal and any other nominated part shall not exceed 0,05 Ω	Measured: Ω	N/A
12.12	The socket contacts & any terminals or terminations shall be formed as one piece with or shall be permanently connected to the pin		P
	This connection shall not be made by means of screw.		P
	The contact for the fuse link shall be connected to the line socket contact & any line terminal shall be formed in one piece with the socket contact & the fixed part of any terminal.		N/A
	These connections shall not be made by means of screws.		N/A
12.6	The base and cover of non-rewirable intermediate adaptors & adaptor plugs shall be permanently attached to each other.		N/A
12.7	For base and cover of rewirable intermediate adaptors and adaptor plugs, it shall not be possible to remove the cover unless the adaptor is completely withdrawn from the socket-outlet.		N/A
	Fixing screws shall be captive.		N/A
12.7.1	Each adaptor cover fixing screw has a pull of 60 N exerted on it for 60 s whilst the surface temperature of the product was 70 oC		N/A
	At the end of the test, screw thread shall be serviceable		N/A
	And insert shall not have moved to such an extent that correct assembly of the adaptor is prevented		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

12.8	The base & cover of adaptors shall be firmly secured to each other.		P
	Not possible to remove the cover unless the adaptor shall be completely withdrawn from the socket-outlet.		P
12.8.1	After the test it shall not be possible to touch live parts with the test pin shown in Fig.1 applied with a force 5 N.		P
12.8.2	For non moulded on non-rewirable adaptor are tested with the flexible cable supplied.		N/A
	After the test, the adaptor cover shall be in place and show no damage.		N/A
12.13	Adaptors shall be no likelihood of them becoming detached from the adaptor during normal use.		P
	After the test the adaptor pin shall comply with the gauge specified in the standard.		P

Seq.6	General			—
5	All tests shall be type tests			P
14.1	The adaptors shall be subjected to a test in a heating cabinet.	70 °C, 7 days		P
	After the treatment, no crack shall be visible			P
15.1.2	The insulation resistance of adaptor to d.c. voltage of 500 V shall be adequate.			P
	Parts between	Resistance (MΩ)	Required (MΩ)	—
	a) line & neutral terminal	>500	≥ 5	P
	b) line & neutral connected together	>500	≥ 5	P
	1) a metal foil in contact	>500	≥ 5	P

BS 1363-3				
Clause	Requirement – Test	Result - Remark		Verdict
	2) the earthing terminal	>500	≥ 5	P
	3) any metal part of a cable anchorage		≥ 5	N/A
	c) each switched pole of a switched adaptor and corresponding plug pin, with the switch contacts open	>500	≥ 2	N/A
15.1.3	Electric strength of adaptor shall be adequate. (2000 V a.c., for 1 min):			P
	a) line & neutral terminals			P
	b) line & neutral terminals connected together			—
	1) a metal foil in contact with external surface			P
	2) the earthing terminal			P
	3) any metal part of a cable anchorage			N/A
	c) each switched pole of a switched adaptor and corresponding plug pin, with the switch contacts open			N/A
15.2	For intermediate adaptors & adaptor plugs only.			N/A
13.7	The construction of the adaptor shall be such that when a plug shall be withdrawn from it, the current-carrying socket contacts shall be automatically screened by shutters.			P
	The shutters shall be operated either by the insertion of the earthing pin or by the simultaneous insertion of any two or more pins of the plug provided that any one corresponding single pin inserted into any current-carrying socket aperture shall not be open the shutter.			P
	One socket aperture shutter shall not be capable of closing independently of the other			P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	aperture shutter.		
	Compliance shall be checked by the tests of 13.7.1		P
	It shall not be possible to operate a shutter by inserting a 2-pin plug into a 3-pin socket outlet. Compliance shall be checked by the tests of 13.7.2		P
13.7.1	It shall not be possible to touch current-carrying parts.		P
13.7.2	Earth pin operated shutters and 3-pin operated shutters shall be deemed to comply with this requirement without testing.		P
	For other shutter designs, compliance shall be checked by a 2-pin plug complying with BS EN 50075.		N/A
18.1	Adaptors shall withstand without excessive wear or other harmful effects, the electrical and mechanical stresses occurring in use.		P
18.1.1	For adaptors other than shaver adaptors, compliance shall be checked by the tests described in 18.1.2 and 18.1.4 and for shaver adaptors by the tests described in 18.1.3.		P
18.1.2	Using an appropriate plug with solid pins, each socket-outlet of the adaptor shall be subjected to make & break a current 15000 times in non-inductive circuit.		P
	Test current (A), test voltage (V):	13A 250V~	P
	After the test the shutter shall be operating satisfactorily, the socket contacts safely shielded and the adaptor shall be in accordance with 13.7, 9.1, 16, 15, 13.5, 13.6,		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	and 10.2.		
18.1.3	Shaver adaptors shall be tested without making and breaking a current.		N/A
	After the test, the shutter shall be operating satisfactorily, the socket contacts shall be safety shielded and the adaptor shall be in accordance with 13.7, 9.1, 16, 15, 13.5.2, 13.6, and 10.2.		N/A
18.1.4	The voltage drop across each switched pole. Required ≤ 60 mV		N/A
	The switch shall then make and break a current 15000 times in non-inductive circuit.		N/A
	Test current (A) at test voltage (V):		N/A
	The voltage drop across each switched pole. Required ≤ 75 mV	Measured:	N/A
	The switch shall also pass the tests given in Clause 15, the test voltages given in 15.1.3 being reduced by 25 %.		P
13.7	The construction of the adaptor shall be such that when a plug shall be withdrawn from it, the current-carrying socket contacts shall be automatically screened by shutters.		P
	The shutters shall be operated either by the insertion of the earthing pin or by the simultaneous insertion of any two or more pins of the plug provided that any one corresponding single pin inserted into any current-carrying socket aperture shall not be open the shutter.		P
	One socket aperture shutter shall not be capable of closing independently of the other		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	aperture shutter.		
	Compliance shall be checked by the tests of 13.7.1		P
	It shall not be possible to operate a shutter by inserting a 2-pin plug into a 3-pin socket outlet. Compliance shall be checked by the tests of 13.7.2		P
13.7.1	It shall not be possible to touch current-carrying parts.		P
13.7.2	Earth pin operated shutters and 3-pin operated shutters shall be deemed to comply with this requirement without testing.		P
	For other shutter designs, compliance shall be checked by a 2-pin plug complying with BS EN 50075.		N/A
9.1	About live parts of adaptors and detachable fuse carriers		P
16	Temperature rise		—
16.1.2	The adaptor and their surroundings shall not attaining excessive temperatures in normal use.		P
	Test current (A), test voltage (V)	14A, 250V~	P
	USB battery charging outlets shall be loaded with their rated currents		N/A
	Temperature rise on line & neutral pin spacer shall not exceed 37 K	Measured: Max. 34.4K	P
	Temperature rise on terminals or terminations shall not exceed 52 K	Measured:	N/A
	Temperature rise on accessible external surface shall not exceed 52 K	Measured: Max. 24,2K	P

BS 1363-3				
Clause	Requirement – Test	Result - Remark		Verdict
15.1.2	The insulation resistance of adaptor to d.c. voltage of 500 V shall be adequate.			P
	Parts between	Resistance (MΩ)	Required (MΩ)	—
	a) line & neutral terminal	>500	≥ 5	P
	b) line & neutral connected together and			—
	1) a metal foil in contact	>500	≥ 5	P
	2) the earthing terminal	>500	≥ 5	P
	3) any metal part of a cable anchorage		≥ 5	N/A
	c) each switched pole of a switched adaptor and corresponding plug pin, with the switch contacts open	>500	≥ 2	P
15.1.3	Electric strength of socket outlets shall be adequate. (2000 V a.c., for 1 min):			P
	a) line & neutral terminals			P
	b) line & neutral terminals connected together and			—
	1) a metal foil in contact with external surface			P
	2) the earthing terminal			P
	3) any metal part of a cable anchorage			N/A
	c) each switched pole of a switched adaptor and corresponding plug pin, with the switch contacts open			P
15.2	Non-rewirable intermediate adaptors & adaptor plugs shall withstand a high voltage test			—
	This test shall be carried out at 6000 V			N/A
	During the test no breakdown or flashover shall occur.			N/A
	Glow discharges without drop in voltage shall be ignored.			N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
13.5	Socket contacts of adaptors shall be self-adjusting as to contact making & each socket contact		P
	The means for producing the contact pressure shall be associated with each socket contact independently & shall not be dependent on insulating material.		P
13.5.2	The voltage drop between individual line or neutral socket contact & the corresponding plug pin shall be measured. (Spec: ≤ 40 mV)	Measured: L (mV): Max. 12,3mV N (mV): Max. 11,7mV	P
13.5.3	For adaptor socket-outlet for BS 1363 plugs. The socket contact shall retain the gauge for not less than 30s when the socket-outlet shall be held horizontally with the gauge hanging vertically downwards.		P
	Adaptor socket-outlets for plugs complying with BS546. The socket-contact shall retain the gauge for not less than 30 s when the socket-outlet shall be held horizontally with the gauge hanging vertically downwards.		N/A
13.6	The maximum withdrawal-pull of a plug from a adaptor socket-outlet shall be measured. (Limit : ≤ 36 N)	<36N	P
10.2	All accessible metal parts of adaptors shall be in effective electrical contact with the earthing socket contact & earthing plug pin.		N/A
10.2.1	a). for metal parts insulated from live parts, by the test described in clause 15.1.3.		N/A
	b). for metal parts connected to an earthing terminal or earthing plug pin	Test current: 25A;	N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	The resistance between the earthing plug pin or earthing terminal and any other nominated part shall not exceed 0,05 Ω	Measured: Ω	N/A
13.11	Adaptor socket-outlet contacts withstand the strain imposed on them by associated plugs & cables.		P
	During the test the device & counterweight shall not come out.		P
	After the test, the adaptor shall not be damaged within the meaning of this standard.		P
	The contacts shall retain for not less than 30s the relevant weight gauges specified in the standard.		P

Seq. 7	General		—
5	All tests shall be type tests		P
12.11.4	Adaptor plug pins and ISOD shall be adequate strength to withstand the stresses of normal use.		P
12.11.4.1	After applied the force 1100 N on the movable anvil to the major axis of pins, the adaptor shall fit the gauge shown in fig.5 when used in the manner described in 12.2.1.	1100N	P
12.11.4.2	For non-solid pins only.		N/A
	a) After applied the force 800 N on the movable anvil to the major axis of pins, the adaptor shall fit the gauge the adaptor shall be complied 12.11.2, 12.11.3 and shall fit the gauge		N/A
	b) The applied force when the movement of the anvil from the datum point reaches 1,5 min shall not be less than 1100 N		N/A

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

Seq. 8a)	Additional tests for adaptors with non-solid pins and/or ISOD		—
5	All tests shall be type tests		N/A
12.11.5	Adaptors with non-solid pins and/or ISOD shall not cause excess wear to sockets or shutter of socket-outlets		N/A
12.11.5.1	For non-solid pins, after the test, the shutter shall be operating satisfactorily and socket-outlet shall be complied with 9.1, 16, 15, 13.4.1a, 10.2, 13.6, 13.7, 13.8 of BS 1363-2.		N/A
	The pin of the adaptor shall remain intact with no openings in the surface		N/A
12.11.5.2	For ISOD, after the test, the shutter shall be operating satisfactorily and socket contact shall be safely shielded		N/A
Seq.8b)	Additional tests for adaptors fitted with an ISOD		—
5	All tests shall be type tests		N/A
12.11.4.3	For ISOD, After applied the force 400 N on the movable anvil to the major axis of ISOD, the adaptor shall fit the gauge the adaptor shall be complied 12.11.2, 12.11.3 and shall fit the gauge not exceed 20 N		N/A

Seq. 9	Material		—
5	All tests shall be type tests		P
22	Resistance to heat		—
22.1.2	Adaptors are kept in a heating clamber, to test for resistance to heat. During the test, they shall not undergo any change impairing their further use	70°C; 60 min	P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	After the test, the adaptor shall satisfy the tests of clause 9.2.1 and clause 15.1.3		P
22.1.3	For adaptors with external parts of resilient material.		P
22.2	Parts of insulating material are subjected to the ball-pressure test at a test temperature. After the test, the diameter of immersion caused by the ball is measured	Enclosure(PP) 75°C/ Max. 0,9mm Enclosure(PC) 75°C/ Max. 0,8mm	P

Seq. 10	Material		—
5	All tests shall be type tests		P
23.2	The specimen is subjected to glow-wire test. Insulating parts shall be of material resistant to abnormal heat and fire		P
	Not retain live part	Shutter body: 650 °C	P
	- no visible flame and no sustained glowing		P
	- flames and extinguish within 30 s after removal of glow-wire		N/A
	- no ignition of tissue paper		P
	Retain live part	Enclosure; shutter box: 750°C	P
	- no visible flame and no sustained glowing		P
	- flames and extinguish within 30 s after removal of glow-wire		N/A
	- no ignition of tissue paper		P
8.2	Annex C: Determination of CTI & PTI		—
	Insulation materials resistant to tracking	PTI 175	P

Seq. 11	Material		—
5	All tests shall be type tests		P
24	Resistance to excessive residual stress and to rusting		—
24.1	The current-carrying parts of copper alloy are subjected to a chemical test.		P
	After the test, there shall be no cracks visible		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

	with normal or corrected vision without additional magnification.		
24.2	The ferrous parts are subjected to a chemical test.		N/A
	After the test, their surface shall show no signs of rust.		N/A

Seq. 12	Positive break (switched adaptors)		—
5	All tests shall be type tests		N/A
13.12.2	The actuating member of a switch shall not remain at rest in the off position whilst the switch contacts remain closed.		N/A
	- actuating mechanism remain a position		N/A
	- giving adequate contact		N/A
	- adequate separation of contacts		N/A
13.12.2.1	Compliance shall be checked by inspection and by the test of 13.12.3		N/A
13.12.3	Measured force F		N/A
	Force applied, i.e. 3F		N/A
	After the test actuating member shall not remain at rest in the “OFF” position.		N/A

Seq. 13	Overloads		—
5	All tests shall be type test		P
14.1	The adaptors shall be subjected to a test in a heating cabinet.	70 °C, 7 days	P
	After the treatment, no crack shall be visible		P
26.1	Adaptors shall withstand overload current		P
26.1.1	Compliance is checked by the tests given in 26.1.2 to 26.1.4.		P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	For adaptors with adaptor socket-outlets for BS 1363-1 plugs, a standard plug to BS 1363-1 shall be used.		P
	For adaptors with a single socket-outlet section, the total test current shall be passed through that single socket-outlet.		P
	For multiway adaptors, the test current shall be divided between the adaptor socket-outlets.		N/A
	At least one adaptor socket-outlet is loaded with the maximum rated current for the adaptor.		N/A
	For adaptors with a flexible cable, or with provision for a flexible cable, the total test current shall pass through the connected flexible cable.		N/A
26.1.2	Fused adaptors shall be fitted with a 13 A fuse to BS 1362.	For model SPL-W-TY-UK-RY-Fu and SPL-W-TY-PM-UK-RY-Fu	P
	Test current of 1,6 times the rating of the fuse	24A	P
	60 min or until the fuse operates (if less than 60 min)		P
	Immediately afterwards, the check specified in 26.1.4 shall be made		P
	Fused adaptors shall then be subjected to a test current of 1,9 times the rating	24,7A	P
	30 min or until the fuse operates (if less than 30 min).		P
	Immediately afterwards the checks specified in 26.1.4 shall be made.		P
26.1.3	Unfused adaptors shall be subjected to a test current of 1,6 times the rating of the adaptor for 60 min.	20,8A For model SPL-W-TY-PM-UK-RY	P

BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

	Immediately afterwards the checks specified in 26.1.4 shall be made.		P
	Unfused adaptors shall then be subjected to a test current of 1,9 times the rating of the adaptor for 30 min.	24,7A For model SPL-W-TY-PM-UK-RY	P
	Immediately afterwards the checks specified in 26.1.4 shall be made.		P
26.1.4	Each adaptor shall be checked for compliance with 9.1, 12.7.1, 12.8.1 and 12.13.1.		P
	Except that the tests shall be performed at ambient temperature.		P
	Deterioration which does not compromise access to live parts shall be deemed to be acceptable.		P
	Inspection shall not reveal any damage to the adaptor which would impair its safety within the requirements of this part of BS 1363.		P

Annex H	Requirements for incorporated electronic components		—
H.1	Incorporated electronic components shall conform to their relevant standard(s).		P
H.2	Electromagnetic compatibility (EMC) requirements		—
	Adaptors incorporating electronic circuits, apart from inherently benign components, shall conform to the immunity and emission requirements of the relevant product or generic BS EN 61000 standard series:		—
H.3	USB circuits intended for charging portable devices		—
H.3.1	USB circuits incorporated in an adaptor shall conform to the requirements of BS EN 60950-1 or BS EN 62368-1 or BS EN 61558-2-16 and		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	BS EN 61558-2-6; and BS EN 62680-1-1		
H.3.1.1	Power rating and identification markings		—
	The input voltage rating of the USB circuit: not marked on the adaptor and not less than the rated voltage of the adaptor		N/A
	The following marking shall be visible after the adaptor has been installed as in normal use:		—
	• symbol for nature of supply, for d.c. only;		N/A
	• rated current, in milliamperes or amperes;		N/A
	• rated output voltage.		N/A
H.3.2	Overcurrent and earth fault protection in primary circuits		—
	Overcurrent protection shall be provided on the primary side of the USB circuit.		N/A
	If overcurrent protection not provided within the USB circuit itself, the appropriate protection shall be made within the adaptor.		N/A
	The USB circuit shall not rely on the building or installation protection device for overcurrent protection.		N/A
H.3.2.1	Number and location of protective devices		—
	A single overcurrent protection device shall be located in the line circuit, either within the USB circuit or in the supply to the USB circuit within the adaptor.		N/A
H.3.2.2	Electrical insulation		—
	Double or reinforced insulation shall be provided between the primary and secondary circuits of the USB circuit		N/A
	The output of the USB circuit shall be SELV		N/A
	When installed in the adaptor, double or		N/A

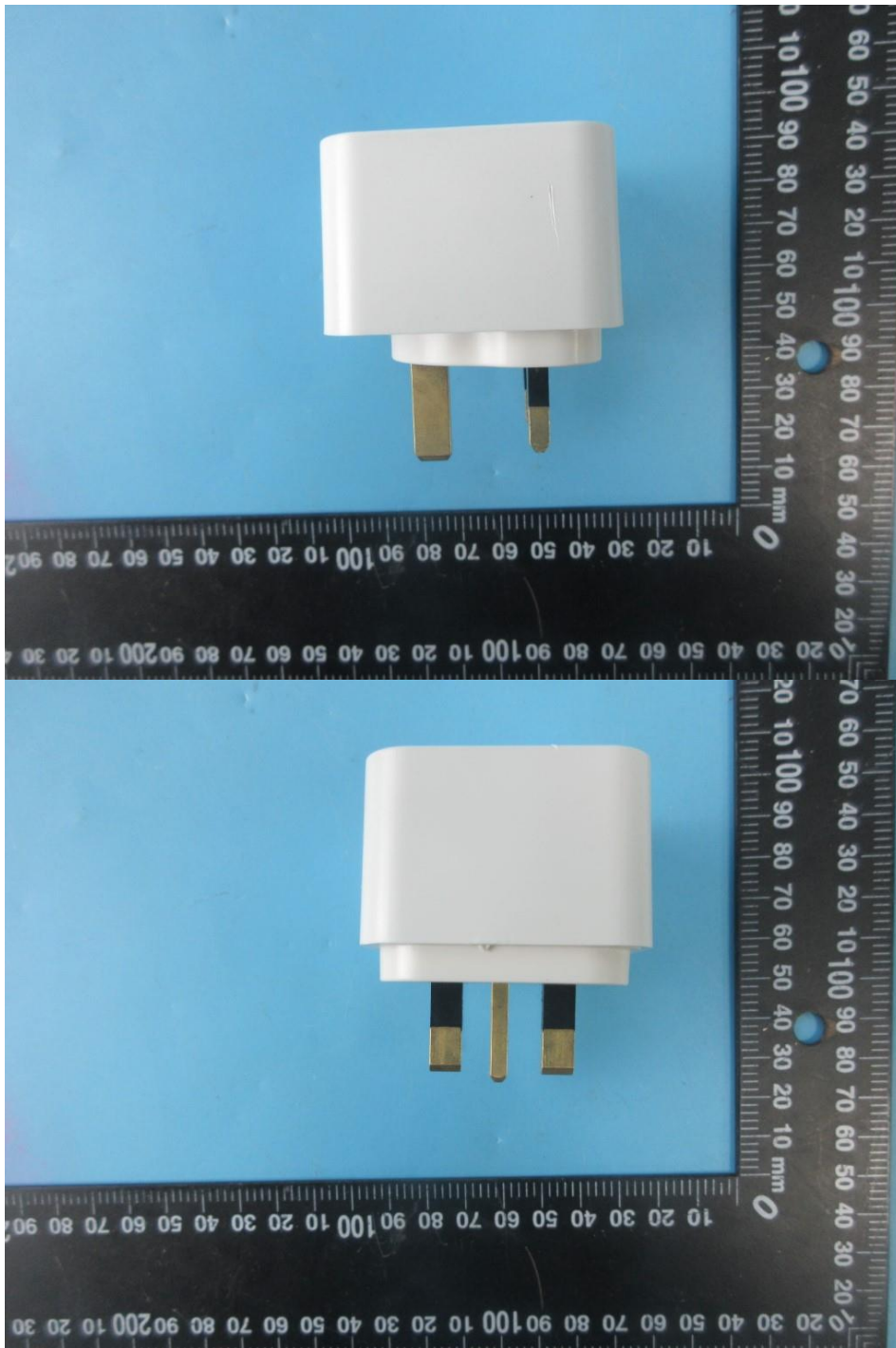
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict
	reinforced insulation shall be provided between the primary circuit and accessible parts of the adaptor.		
H.3.2.3	Clearances, creepage distances and distances through insulation		—
	The USB circuit shall be designed and constructed to conform to the requirements of Overvoltage Category III.		N/A
	USB circuits of Overvoltage Category II can be used where additional overvoltage protection is provided within the adaptor		N/A
H.3.3	Disconnection from the mains supply		N/A
H.3.4	Mechanical strength		N/A
	The requirements of BS 1363-2, Clause 20 shall be applied to the USB circuit when incorporated in the adaptor.		N/A
H.3.4.1	Reducing the risk of ignition and spread of flame		—
	Method 1: A fire enclosure shall be provided which meets the requirements of BS EN 60950-1:2006+A2:2013; or		N/A
	Method 2: Assessment and testing of all possible single fault tests shall be applied.		N/A
	Whichever method is selected, the material requirements of BS 1363-3, Clauses 22 and 23 are also applicable.		N/A
H.3.4.2	Performance requirements		N/A
	USB circuits intended for charging portable devices shall conform to the requirements for dedicated charging ports (DCP) of BS EN 62680-1-1		N/A
H.3.5	Conformity shall be verified by inspection of		N/A

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	compliance evidence or by test.		
H.4	Surge protective devices		—
H.4.1	Surge protective devices incorporated in BS 1363-3:2016 adaptor shall conform to the requirements in H.4.2.		N/A
H.4.2	The following types of SPD of the appropriate category shall be considered:		—
	• metal oxide varistors conforming to BS EN 61643-331;		N/A
	• gas discharge tubes conforming to BS EN 61643-311;		N/A
	• avalanche breakdown diodes conforming to BS EN 61643-321		N/A
	VDRs conforming to BS IEC 61051-2 are acceptable		N/A
H.4.3	Conformity shall be checked by inspection of component conformity evidence.		N/A
H.4.4	Incorporation of VDRs in adaptors		—
	The following methods of VDR incorporation are permitted:		—
	1) Between L and N		N/A
	2) Between L and E		N/A
H.5	Electronic switches		—
	Electronic switches incorporated in adaptors shall conform to BS EN 60669-2-1		P
	Conformity checked by inspection of conformity evidence or by test.		P

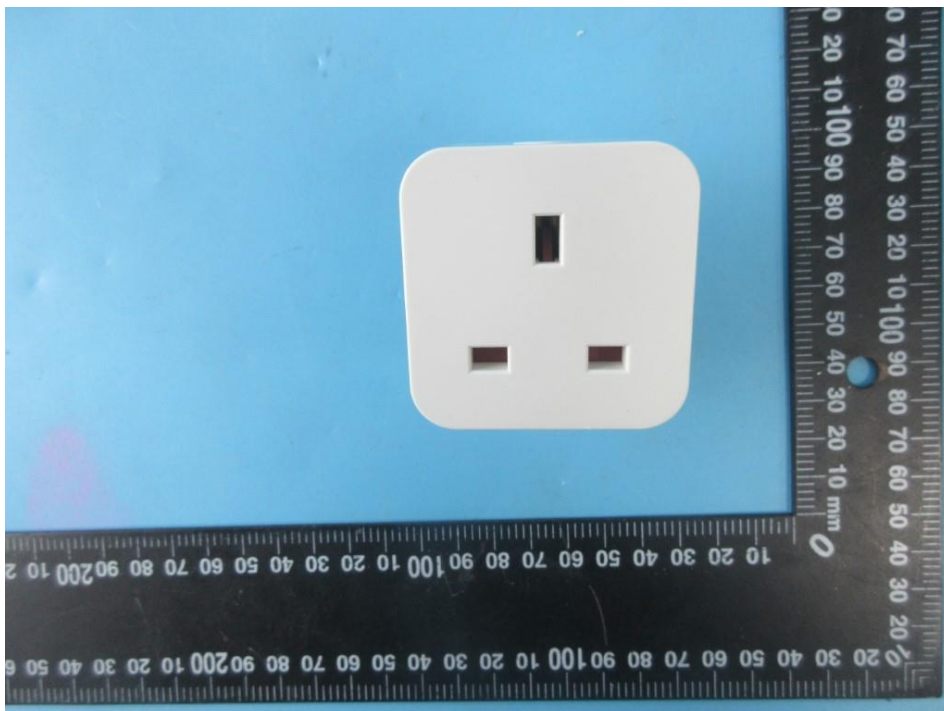
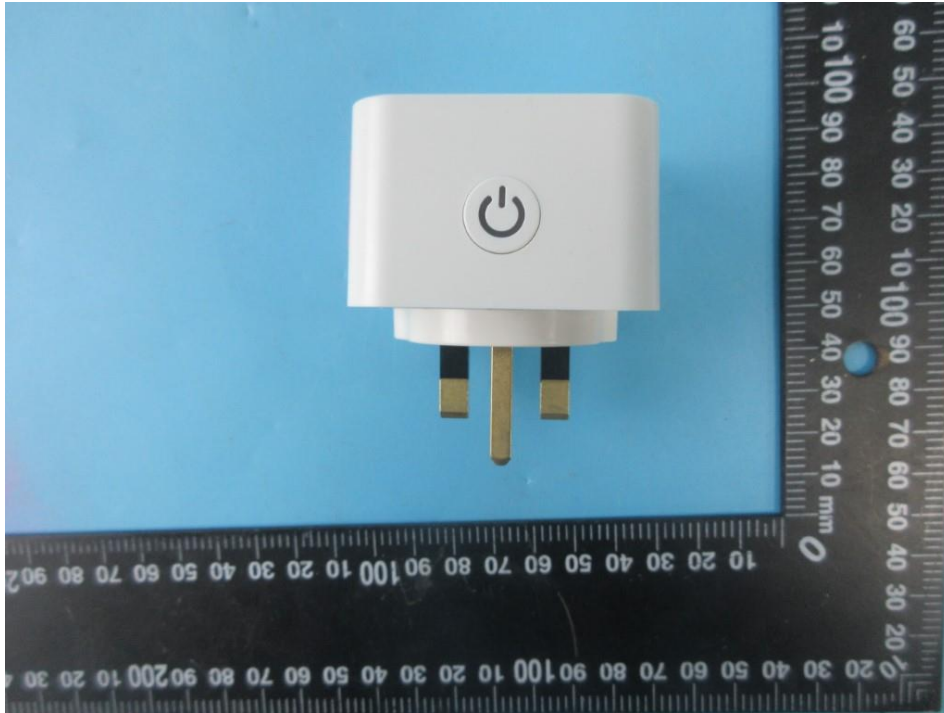
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

Appendix 1: Photos

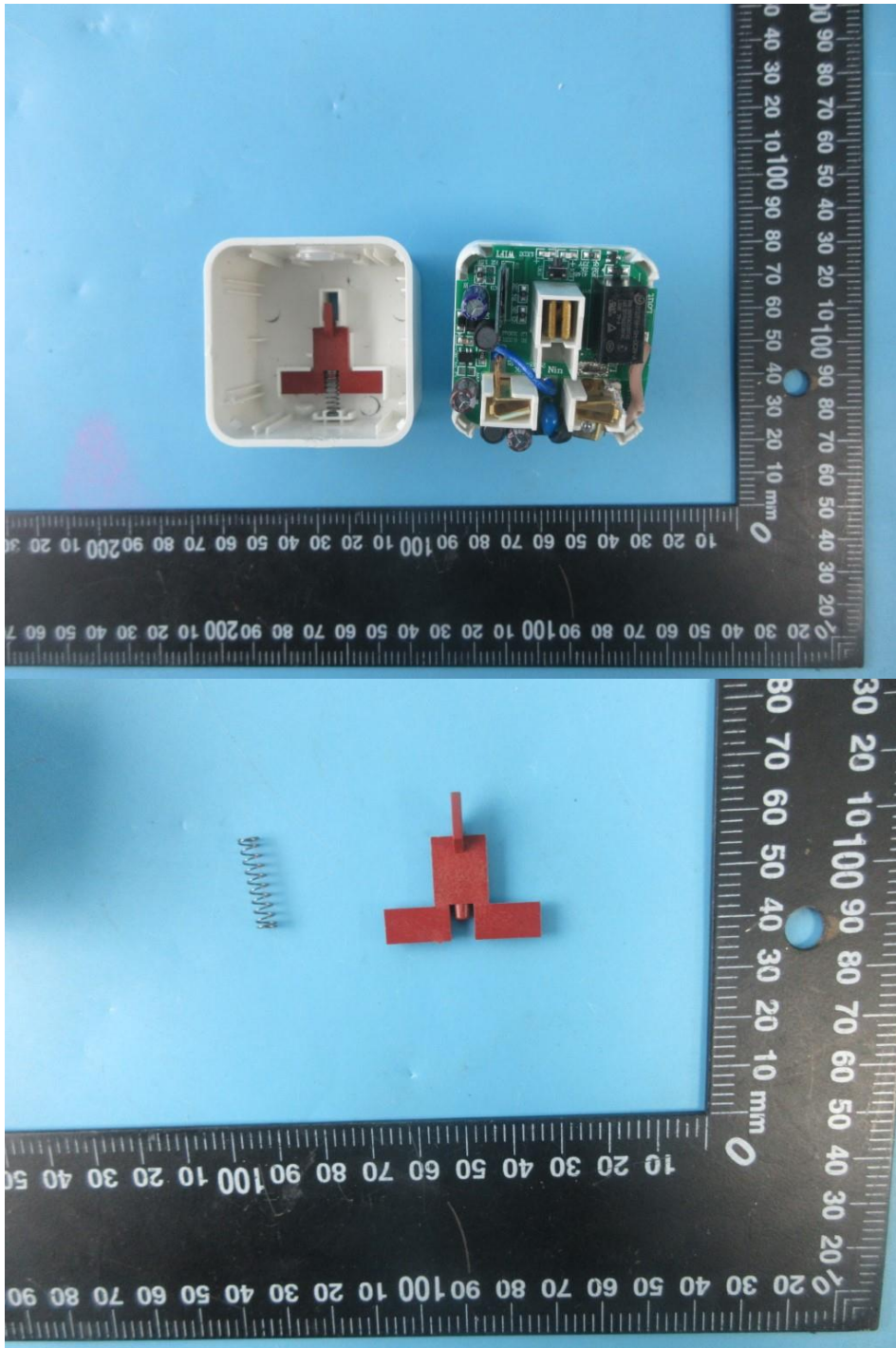
SPL-W-TY-UK-RY



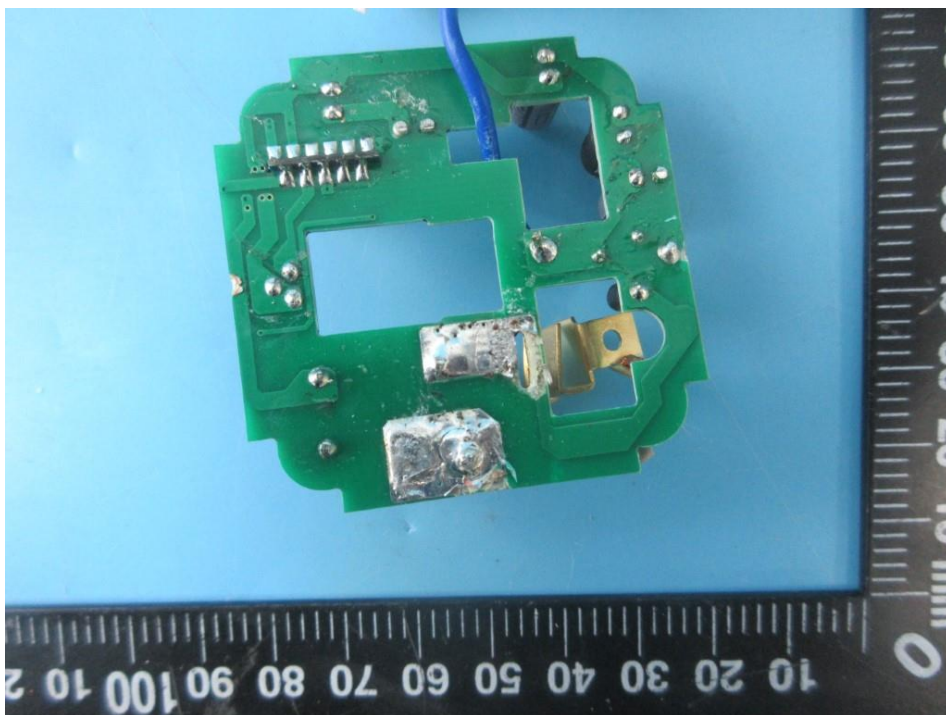
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



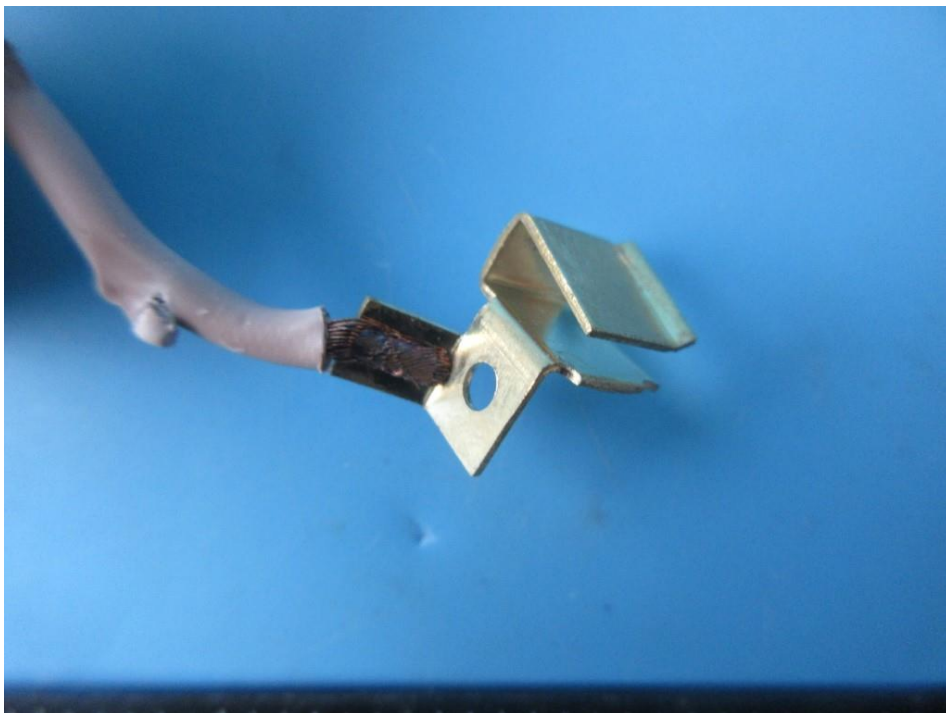
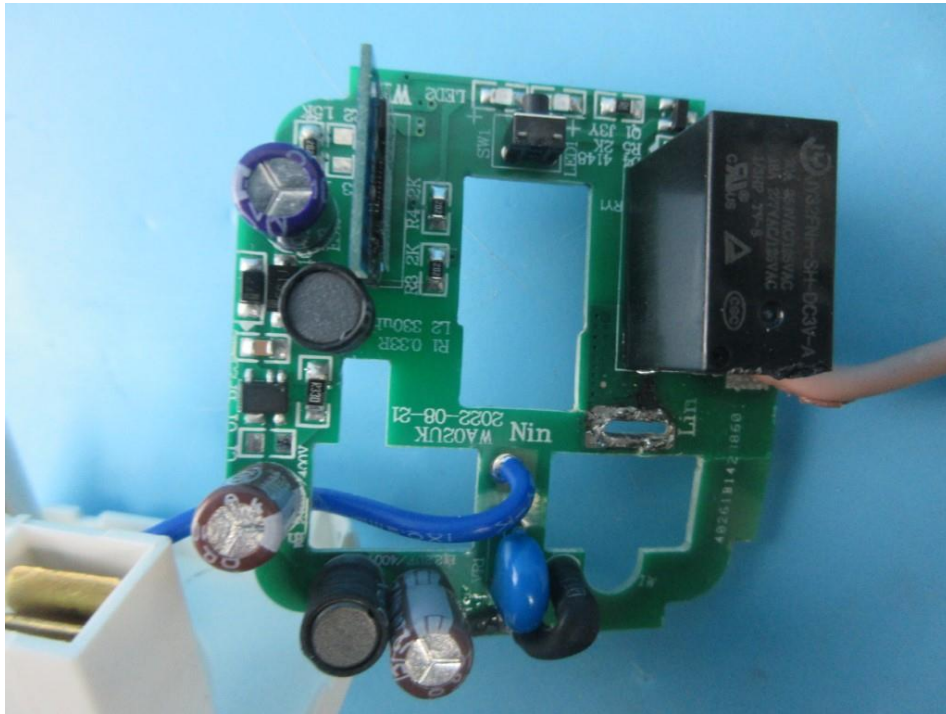
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



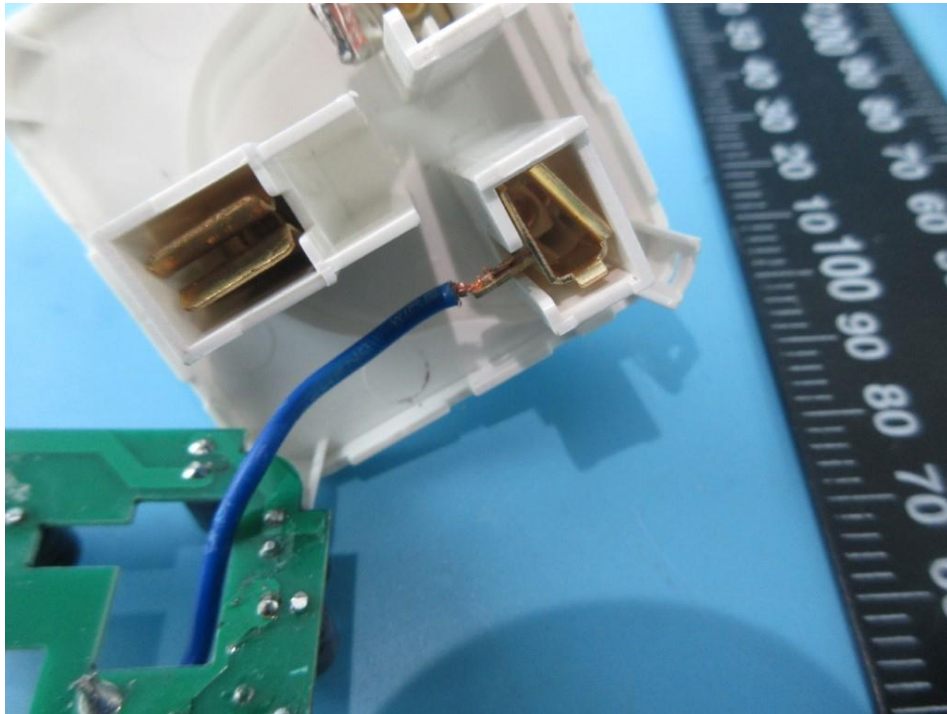
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



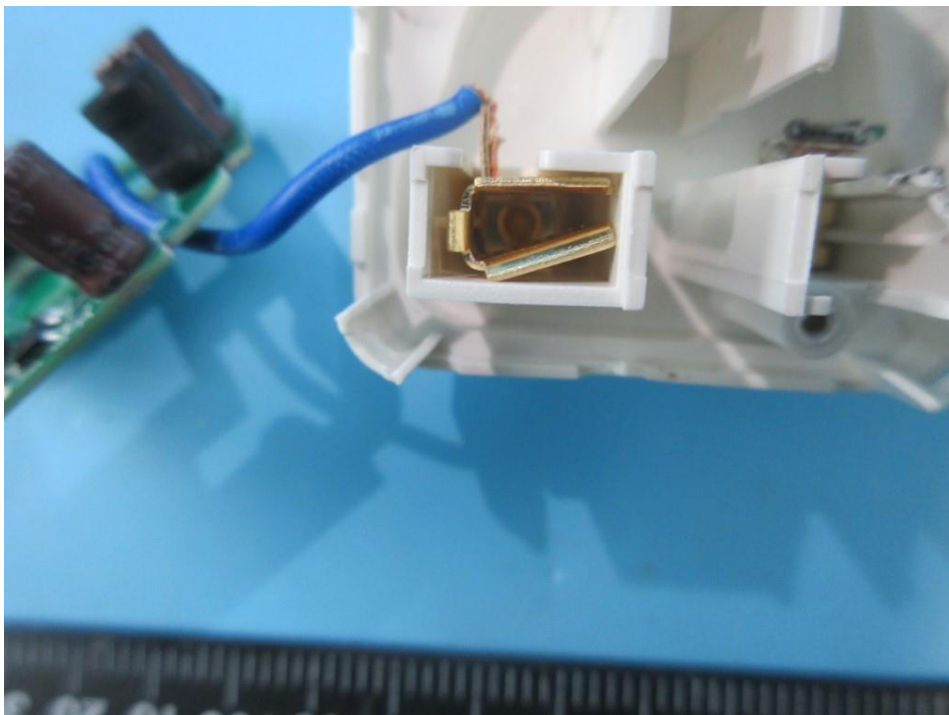
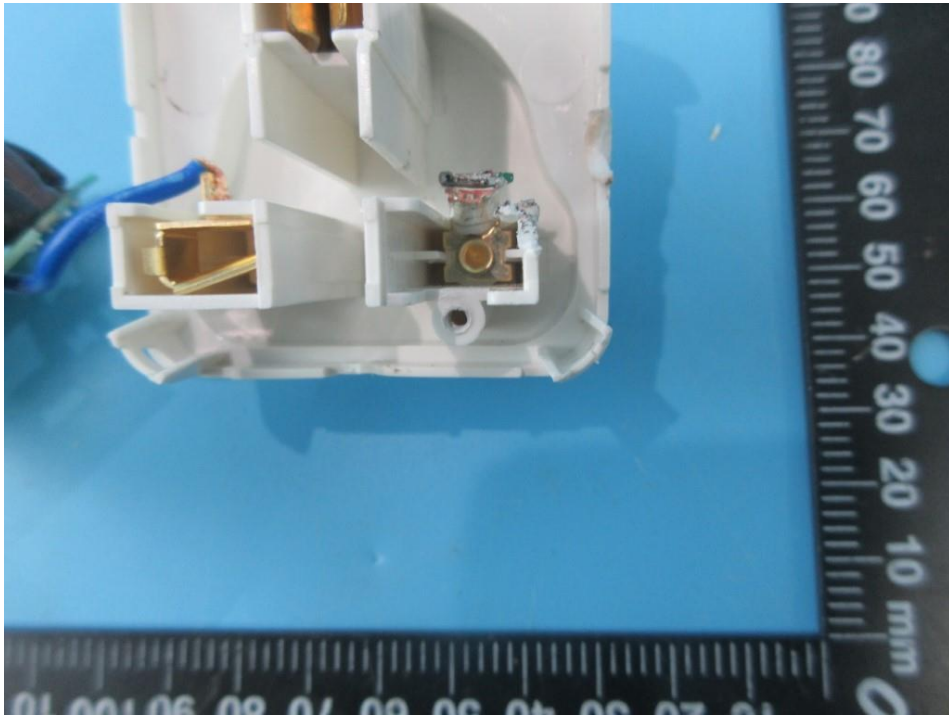
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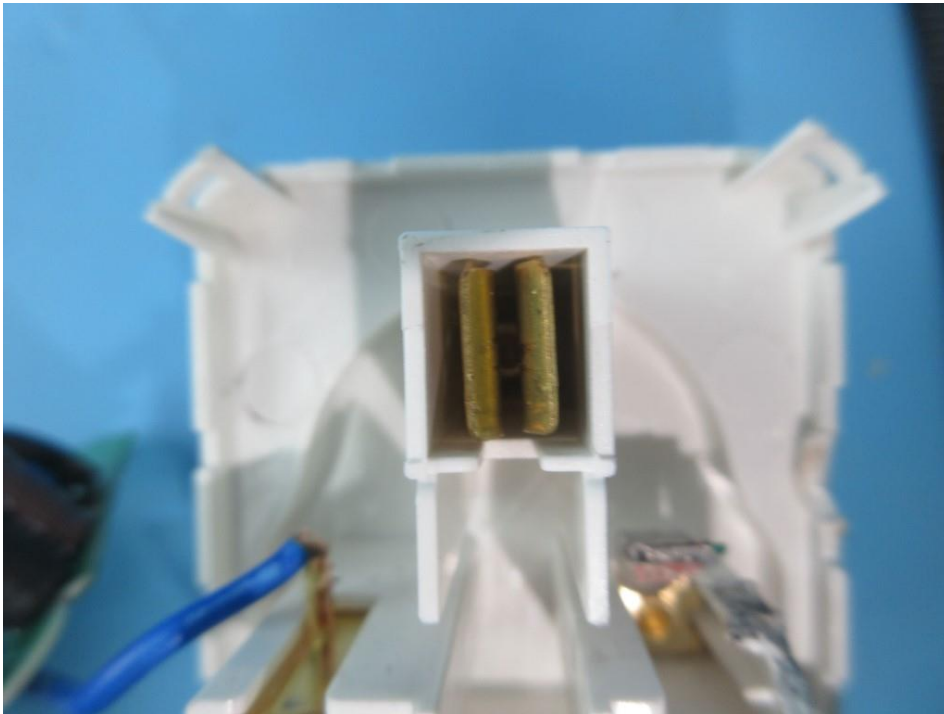
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



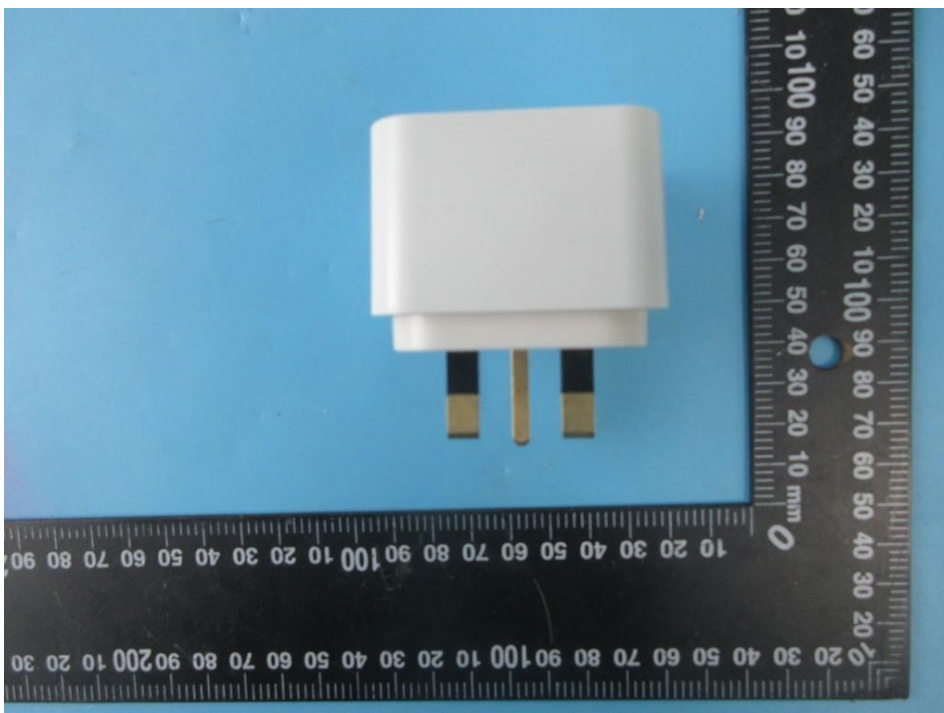
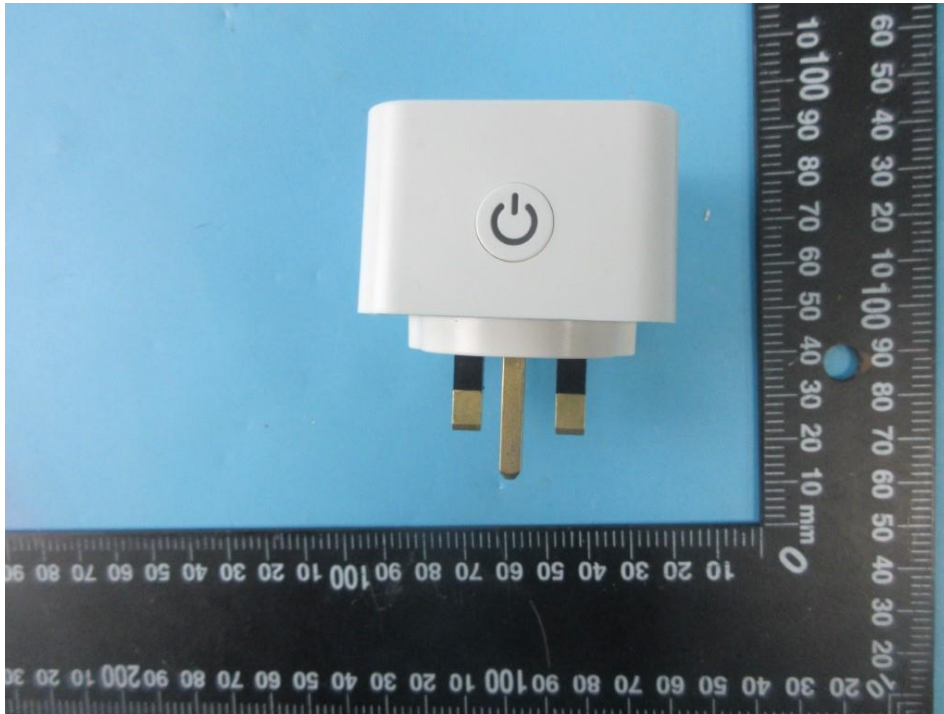
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



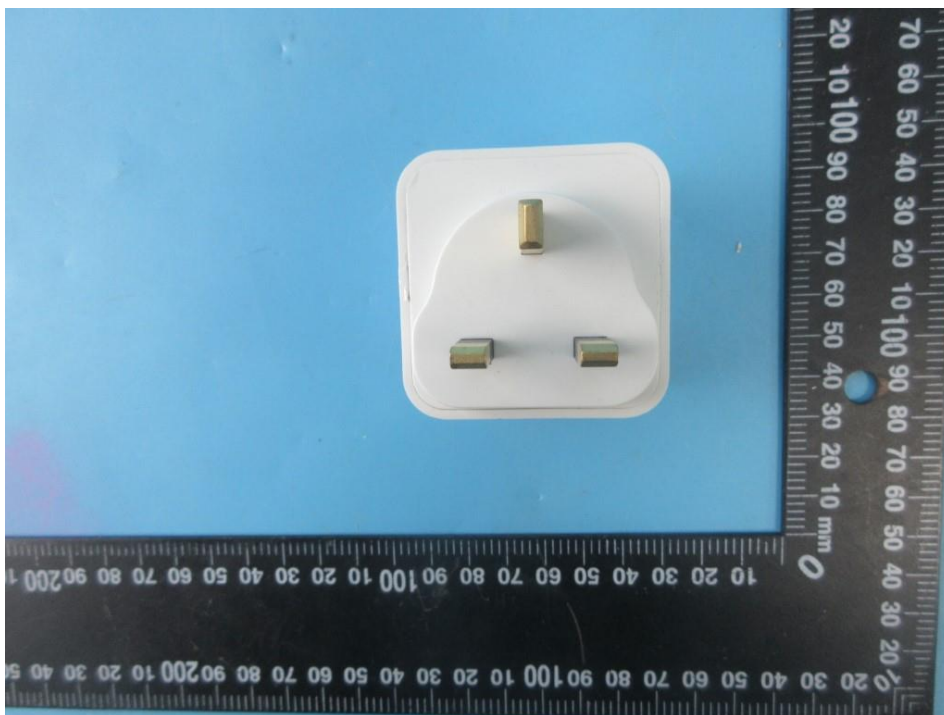
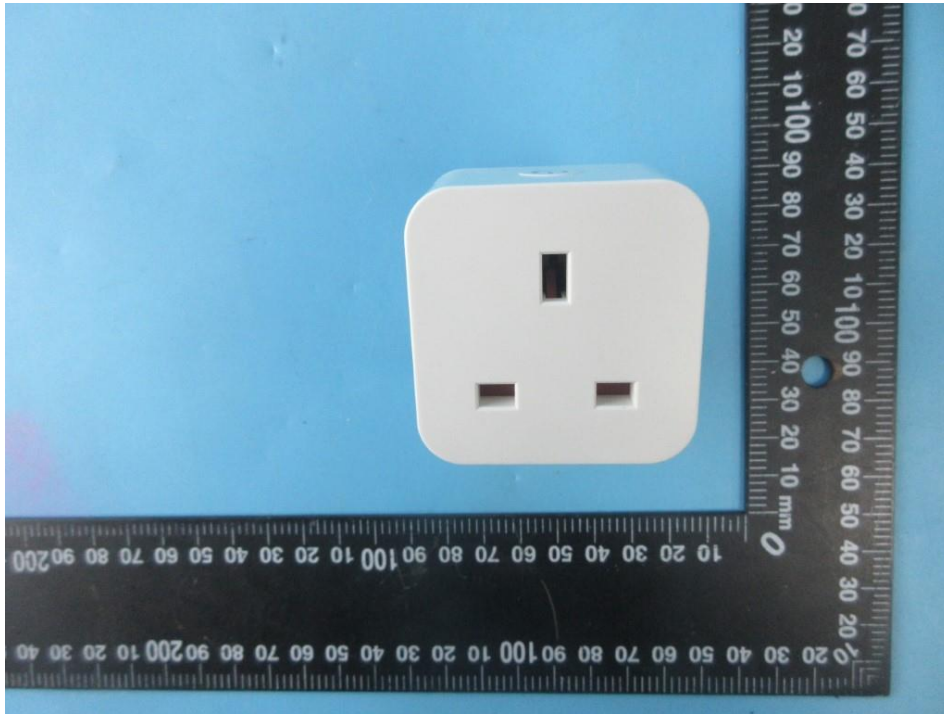
SPL-W-TY-PM-UK-RY-Fu



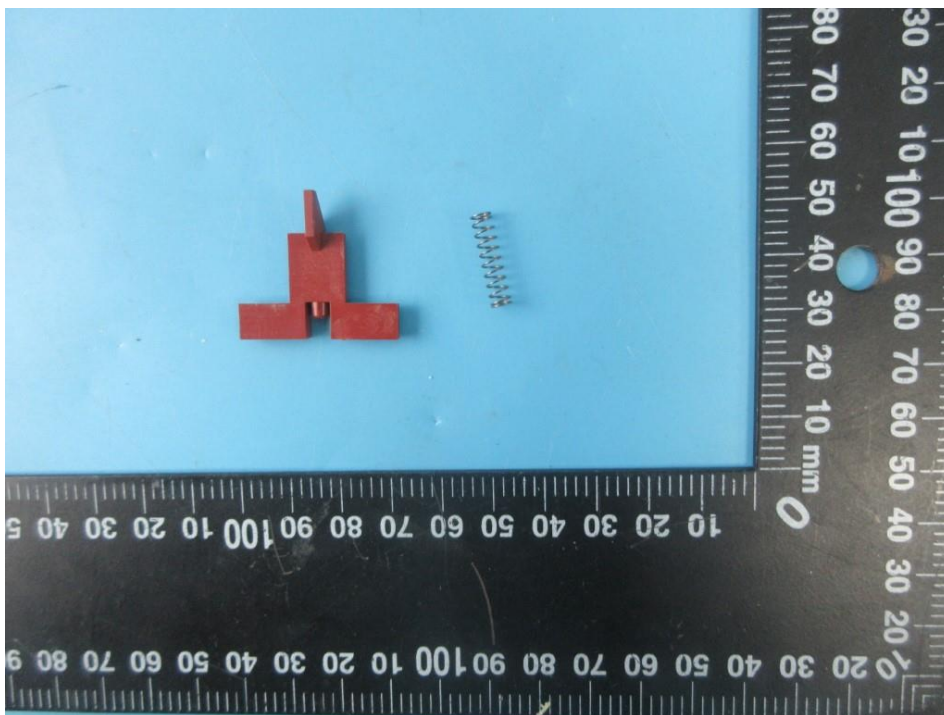
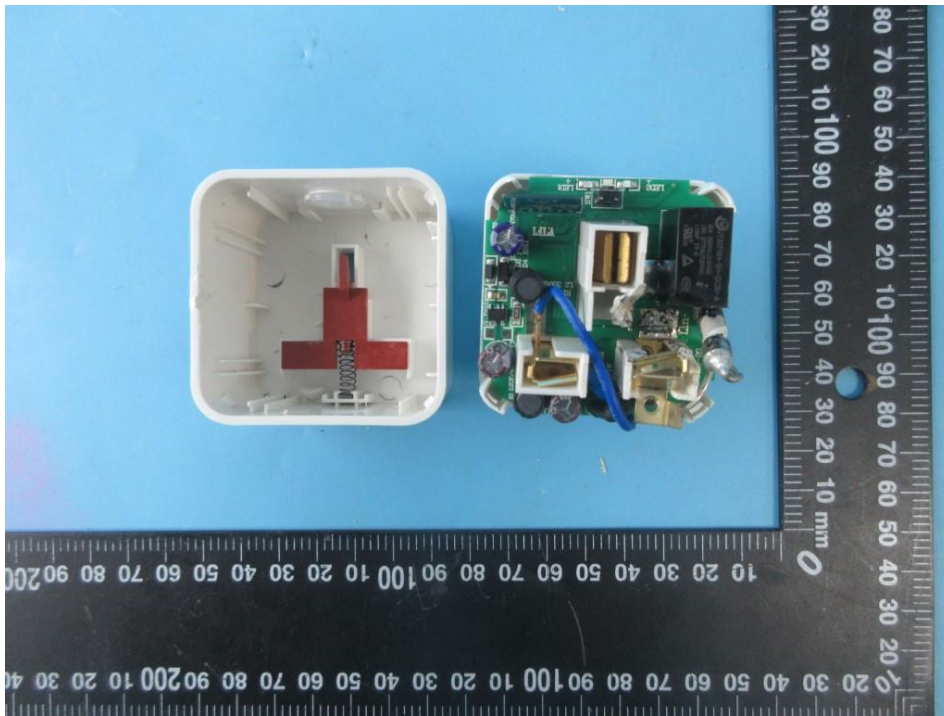
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



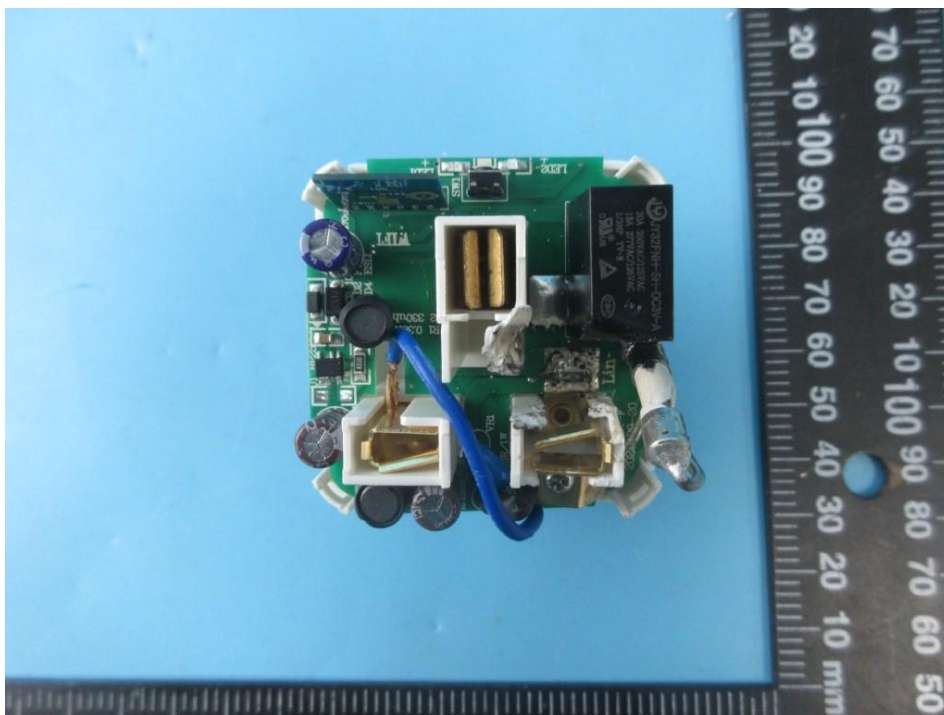
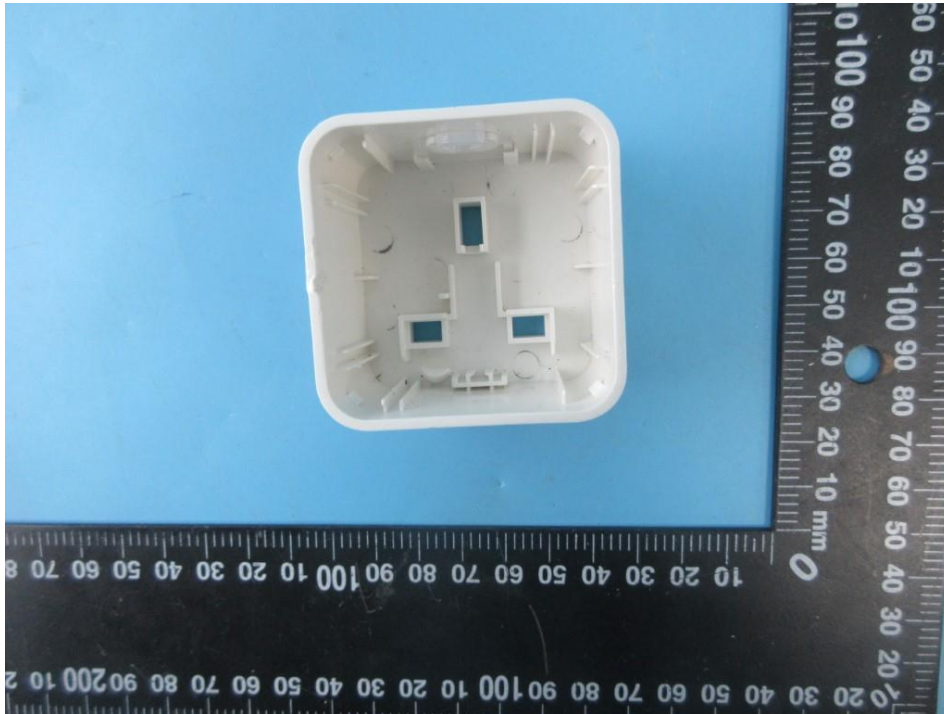
BS 1363-3			
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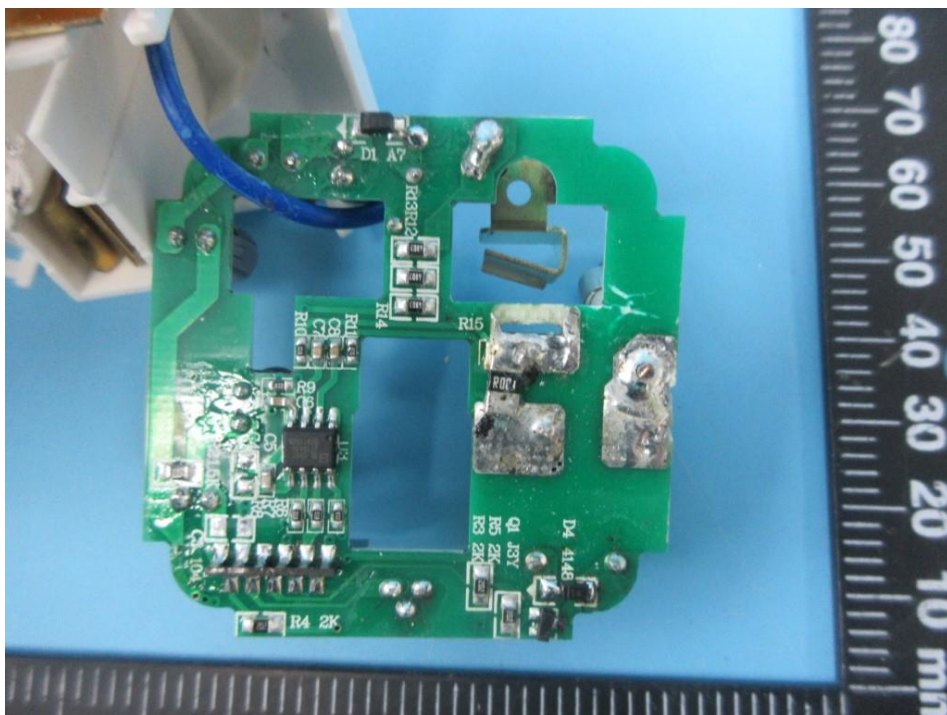
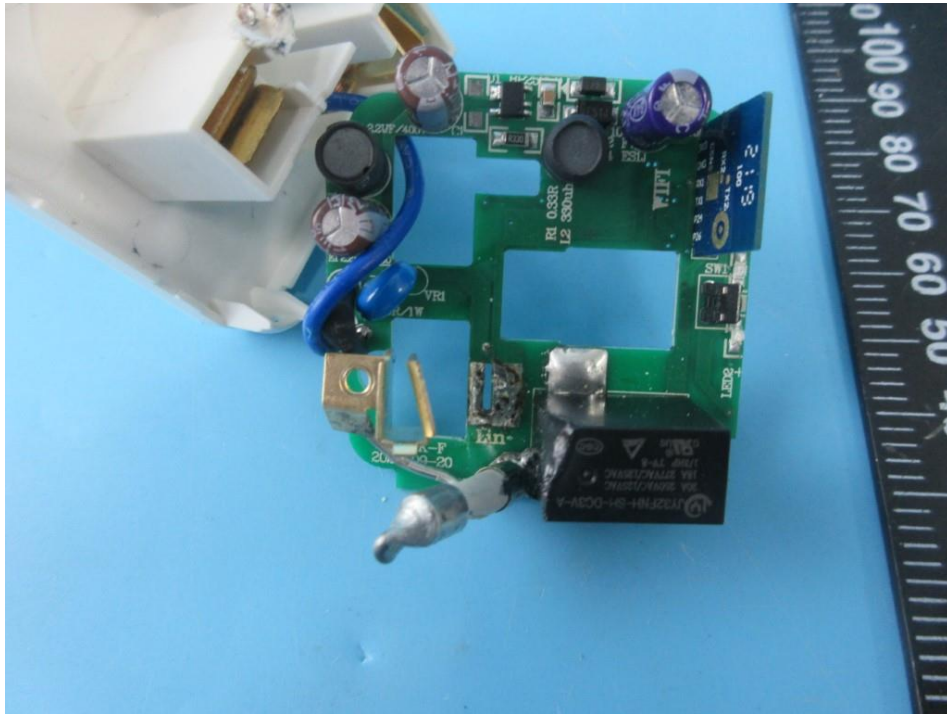
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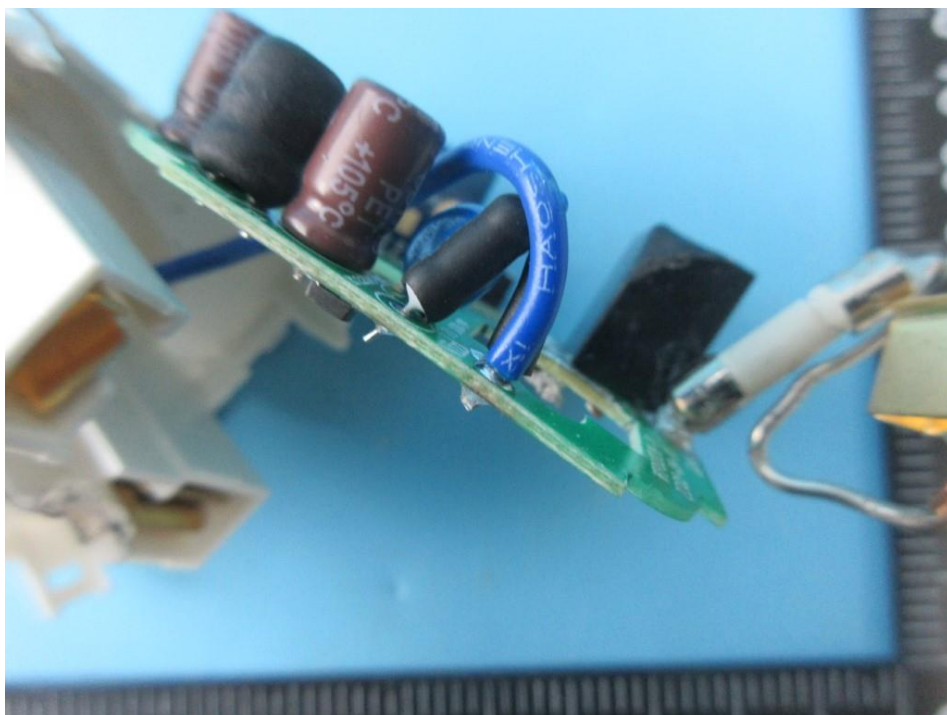
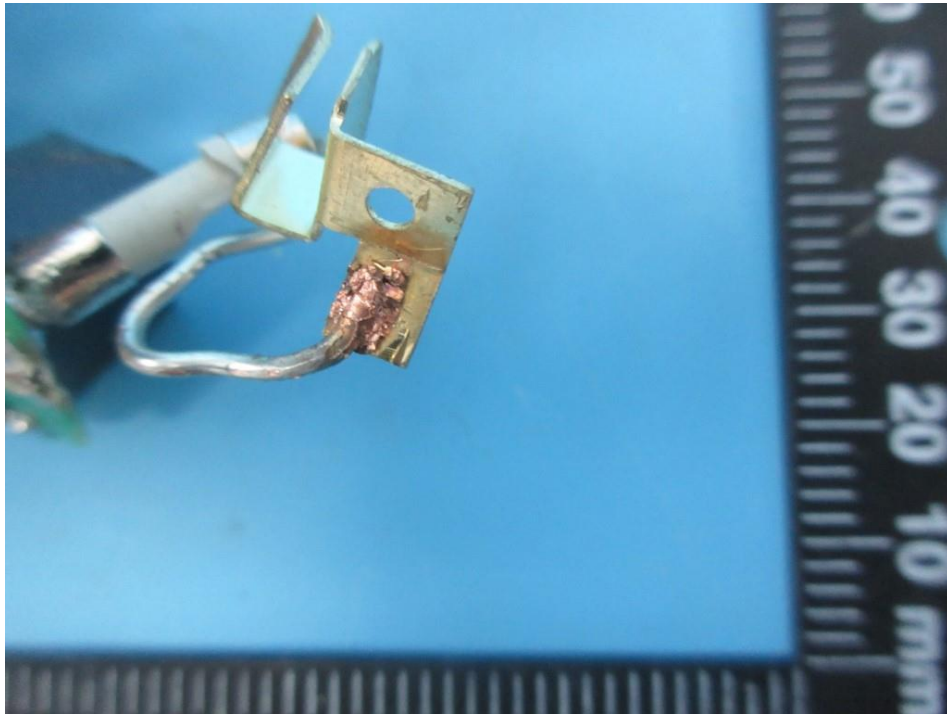
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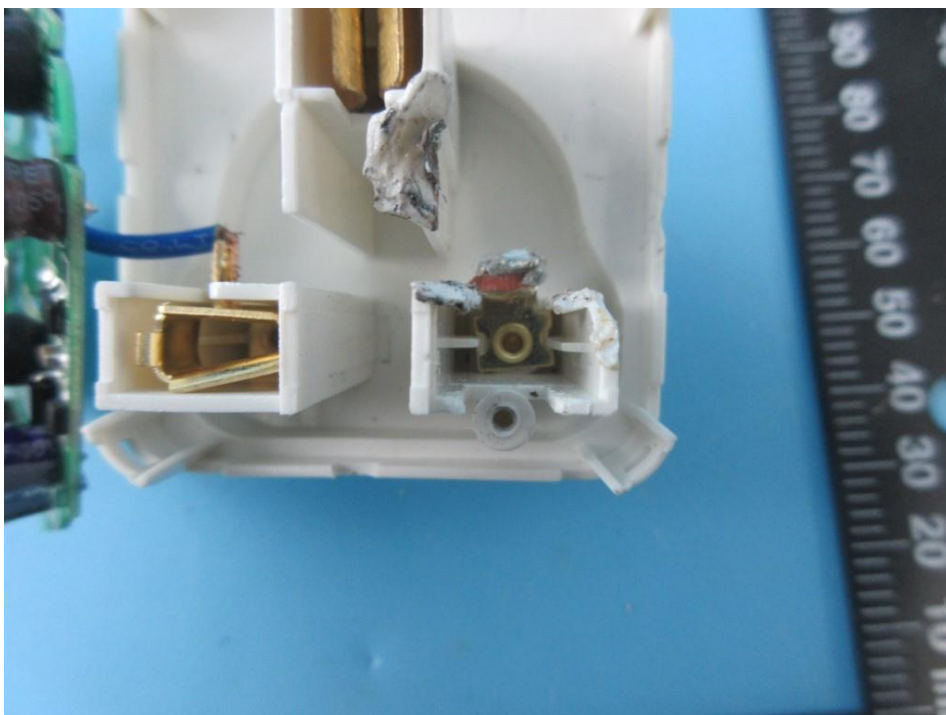
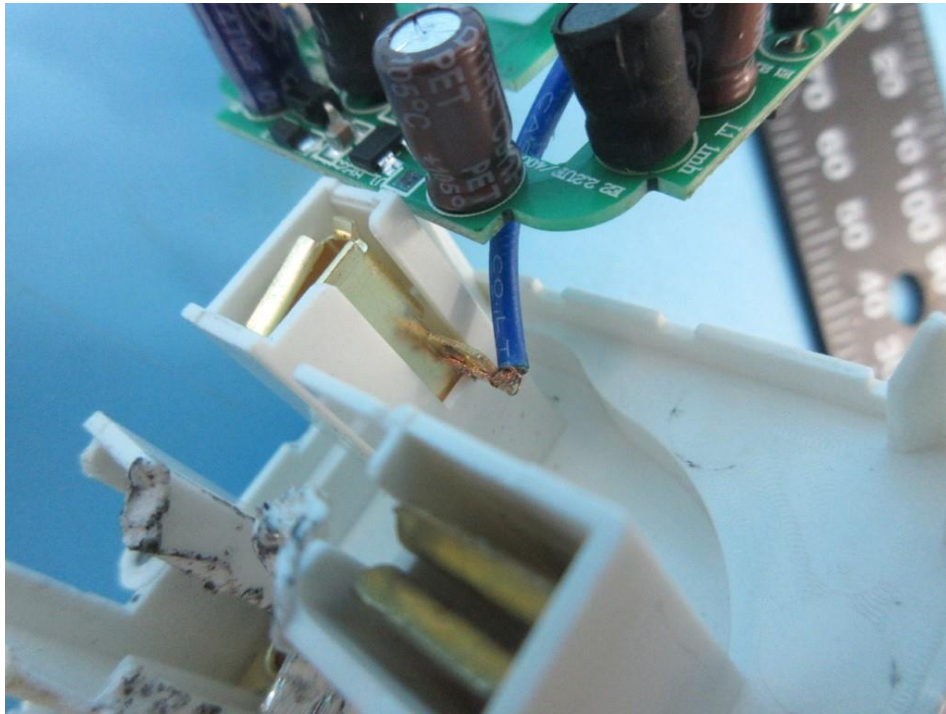
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Clause	Requirement – Test	Result - Remark	Verdict



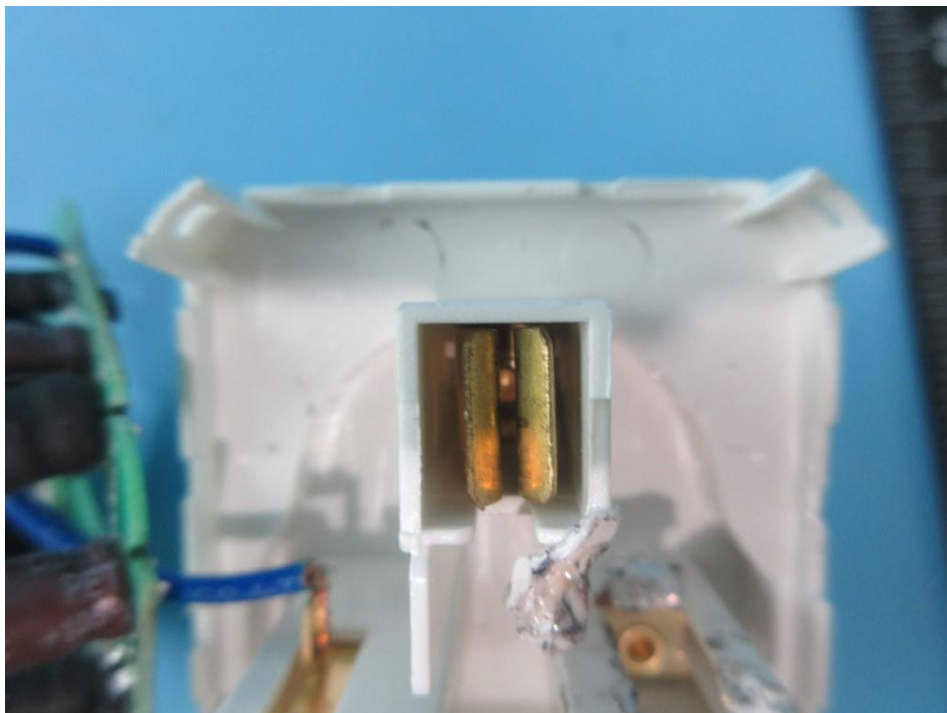
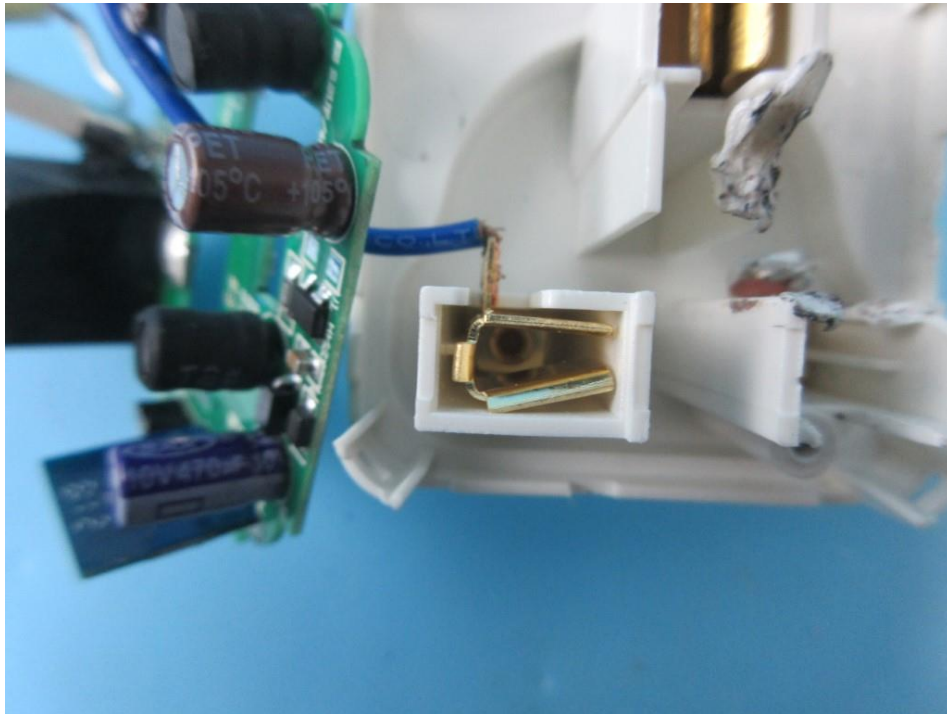
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

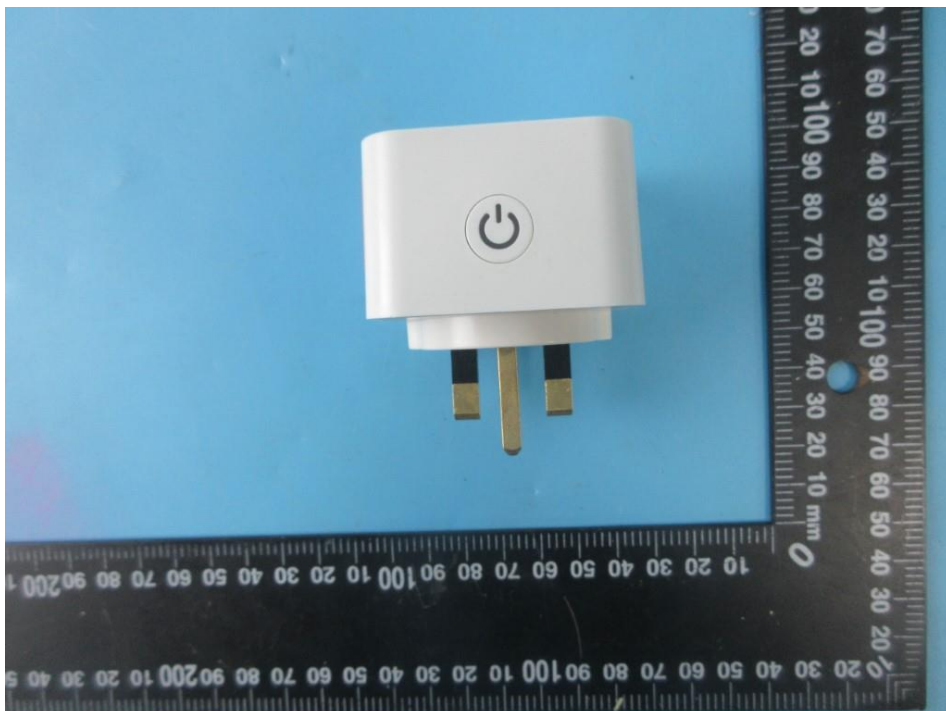
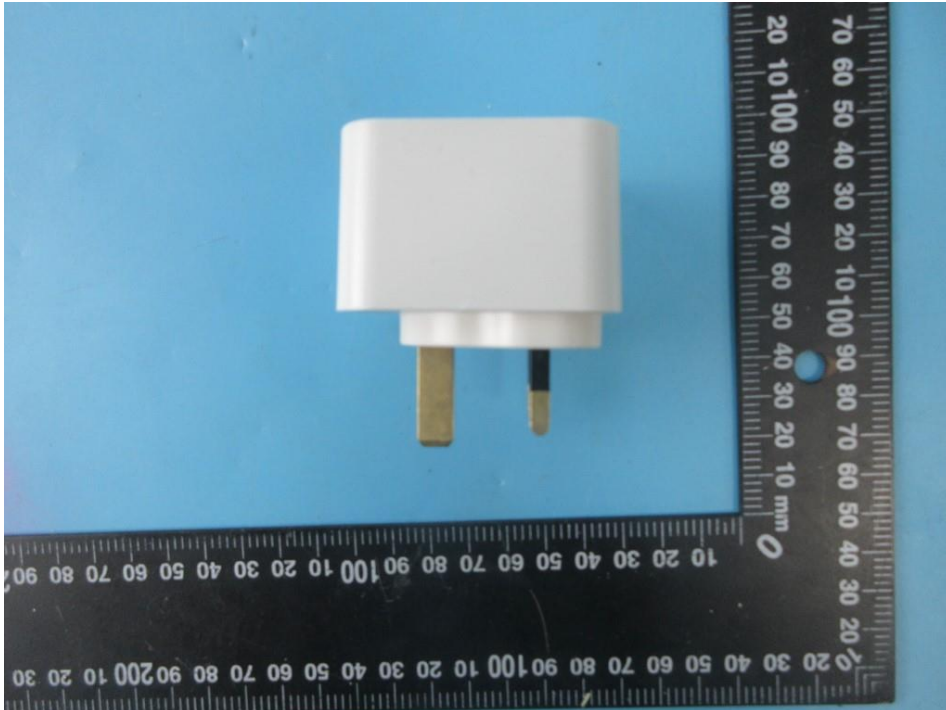


BS 1363-3			
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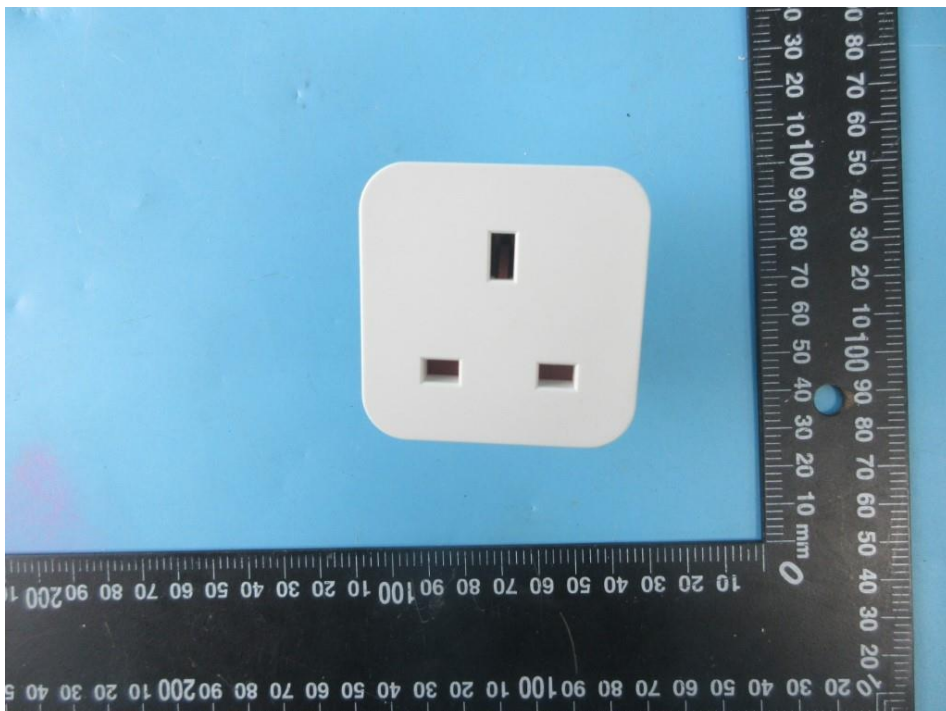
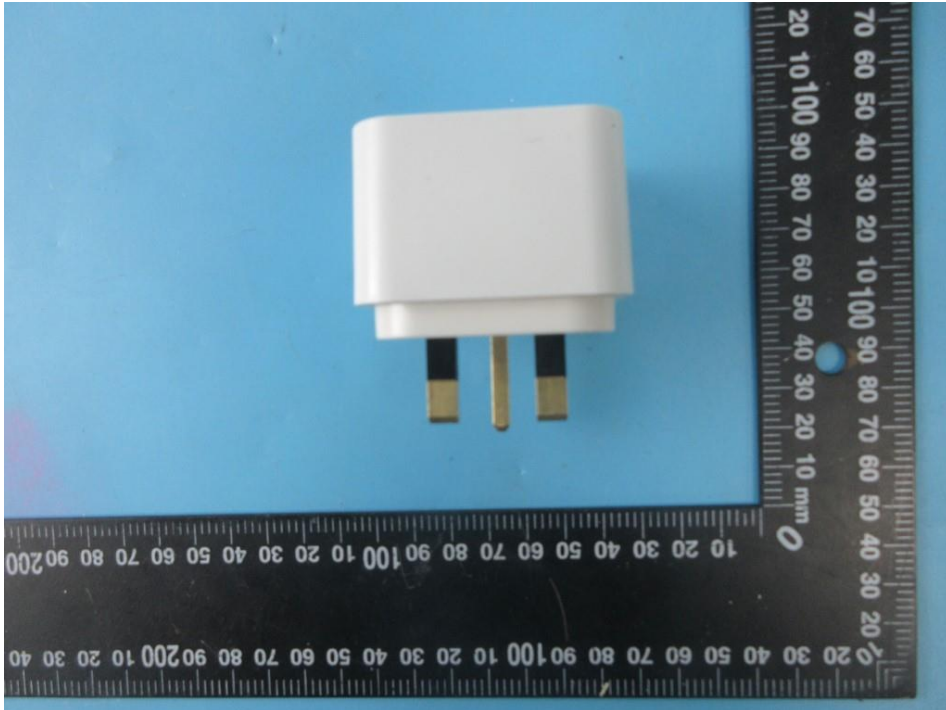


BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict

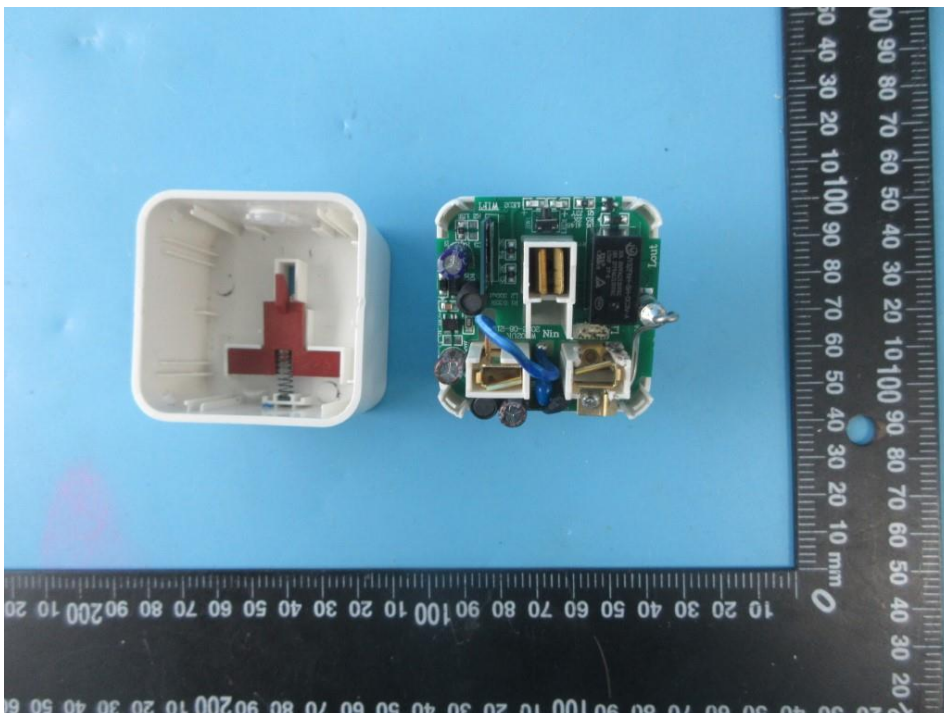
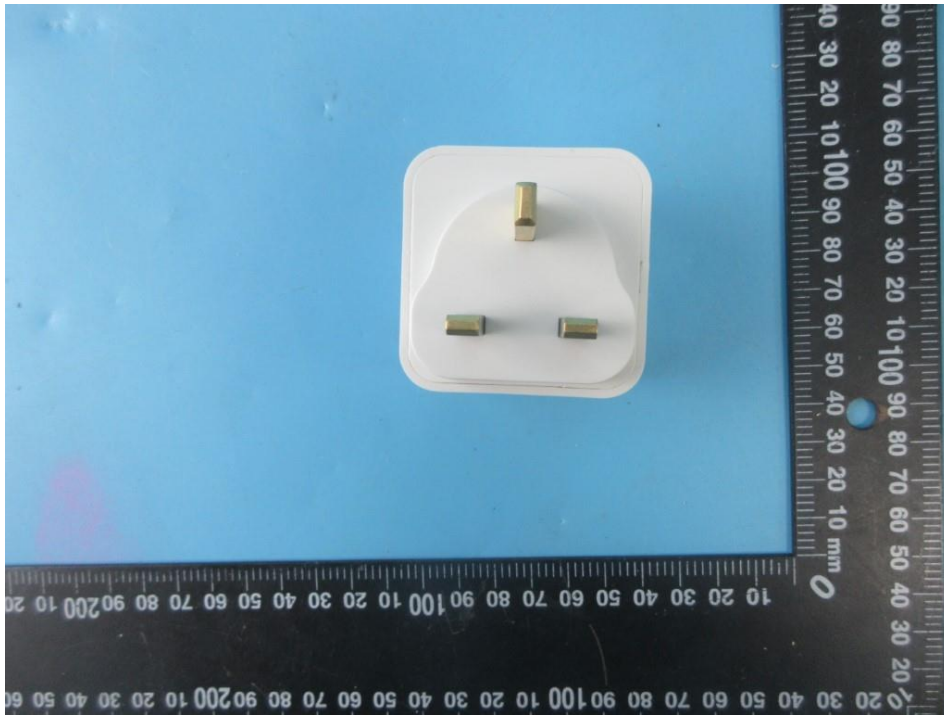
SPL-W-TY-UK-RY-Fu



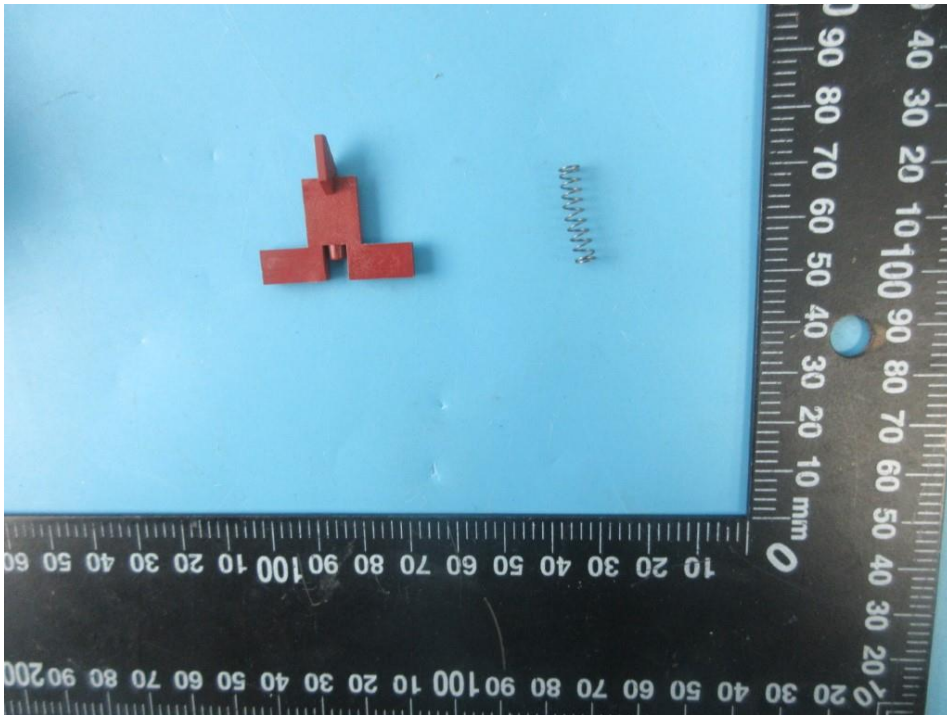
BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



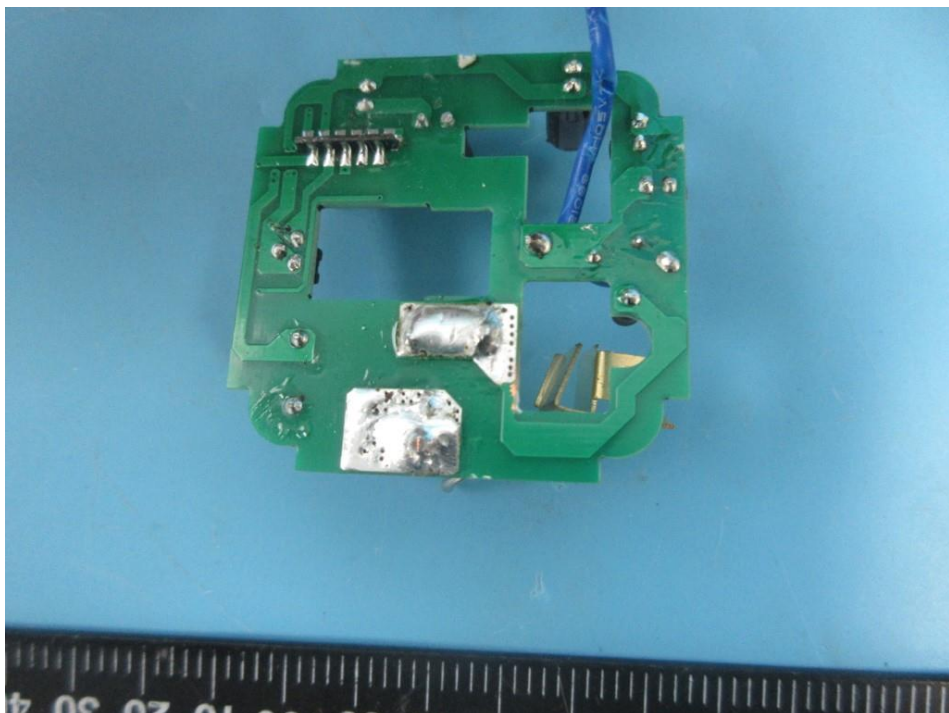
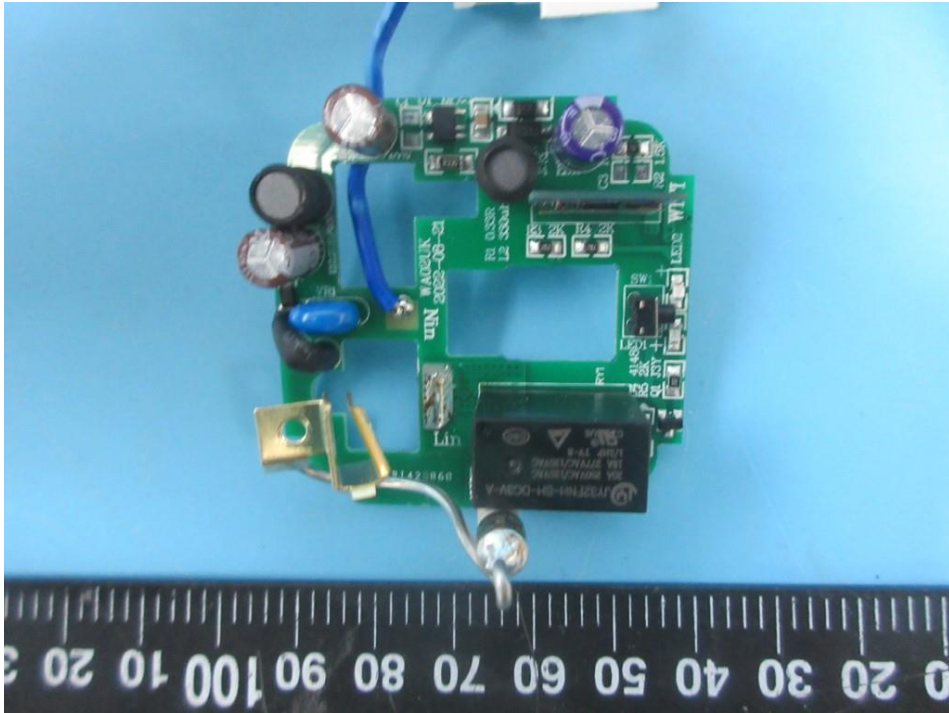
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Clause	Requirement – Test	Result - Remark	Verdict



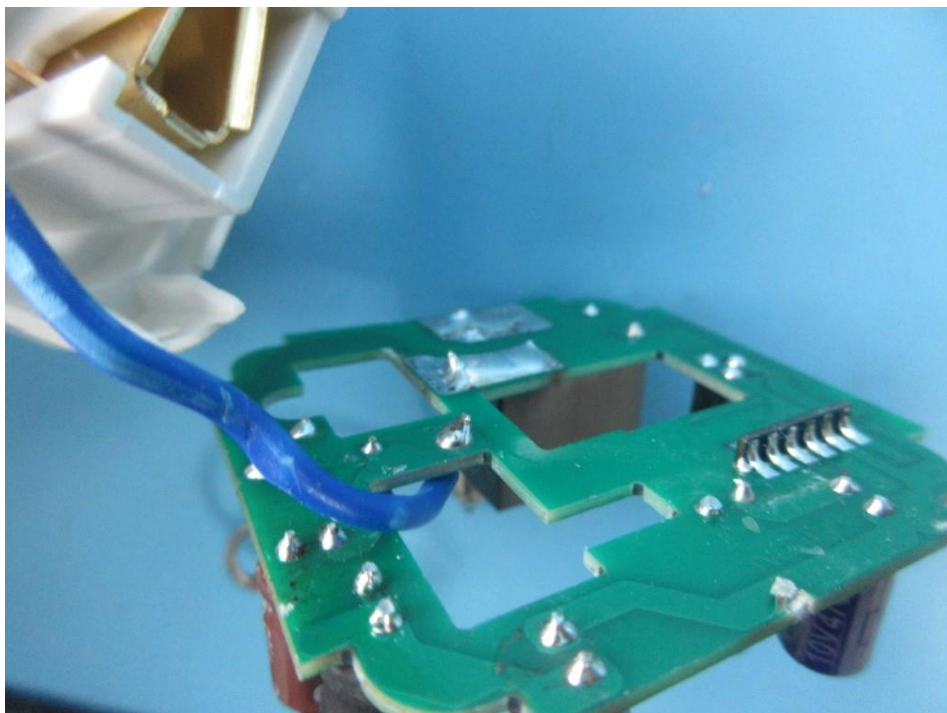
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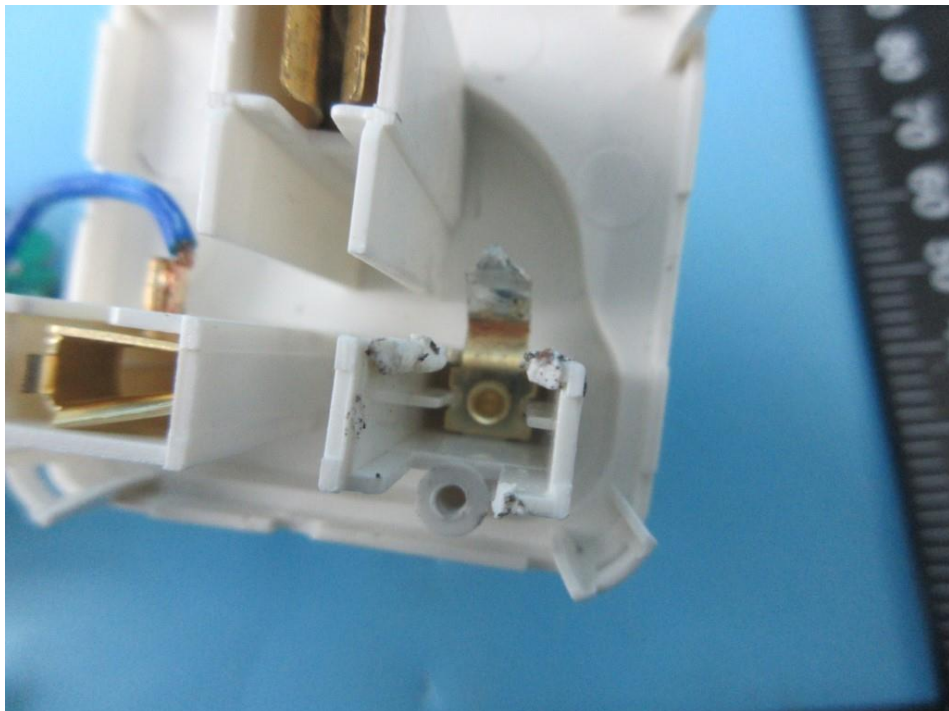
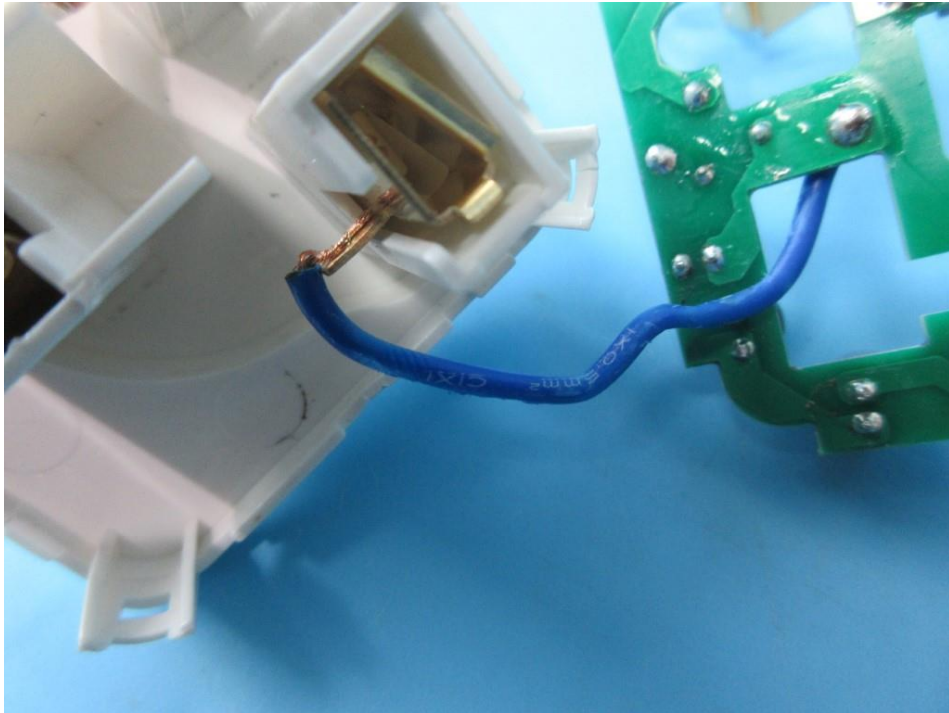
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Clause	Requirement – Test	Result - Remark	Verdict



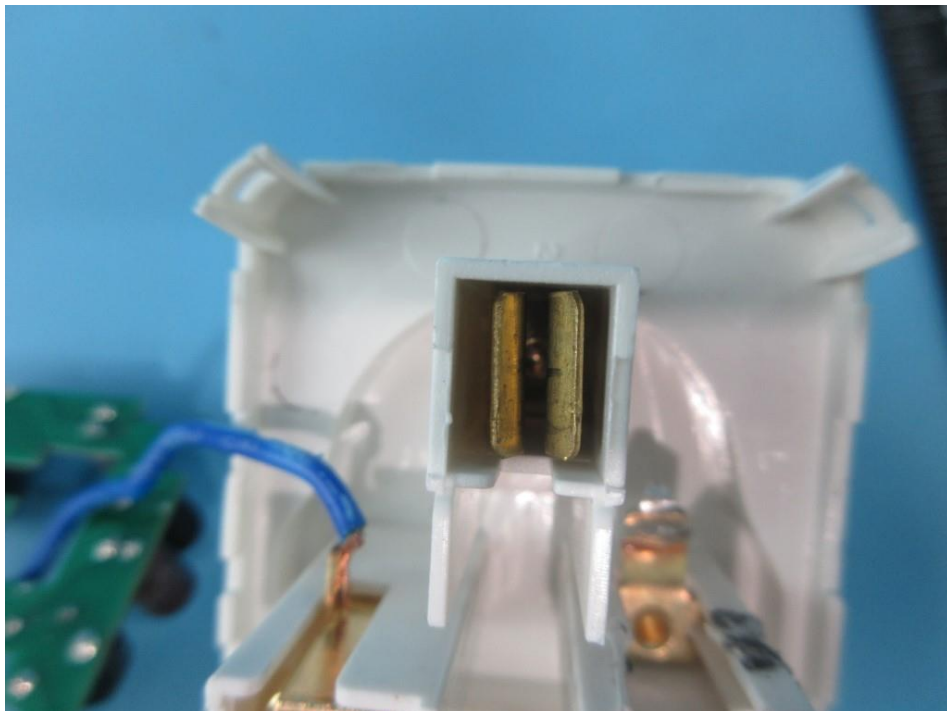
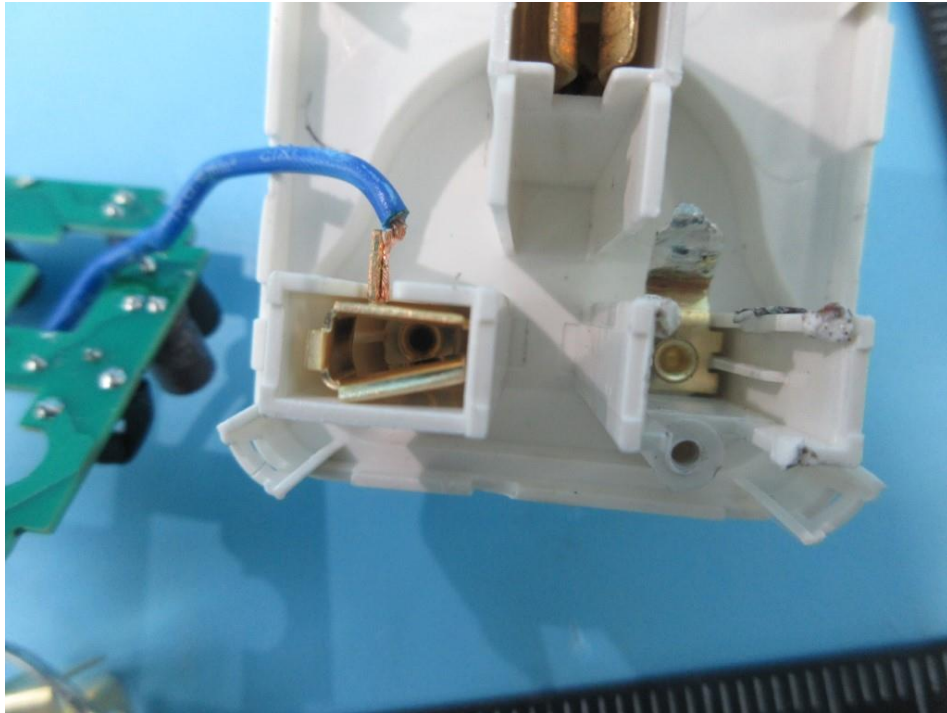
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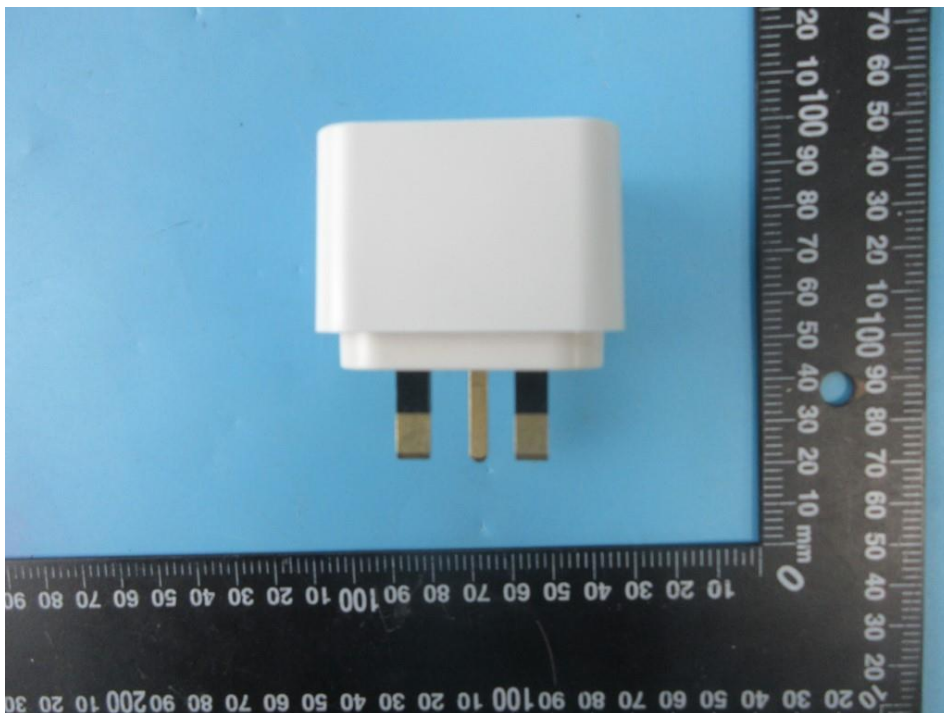
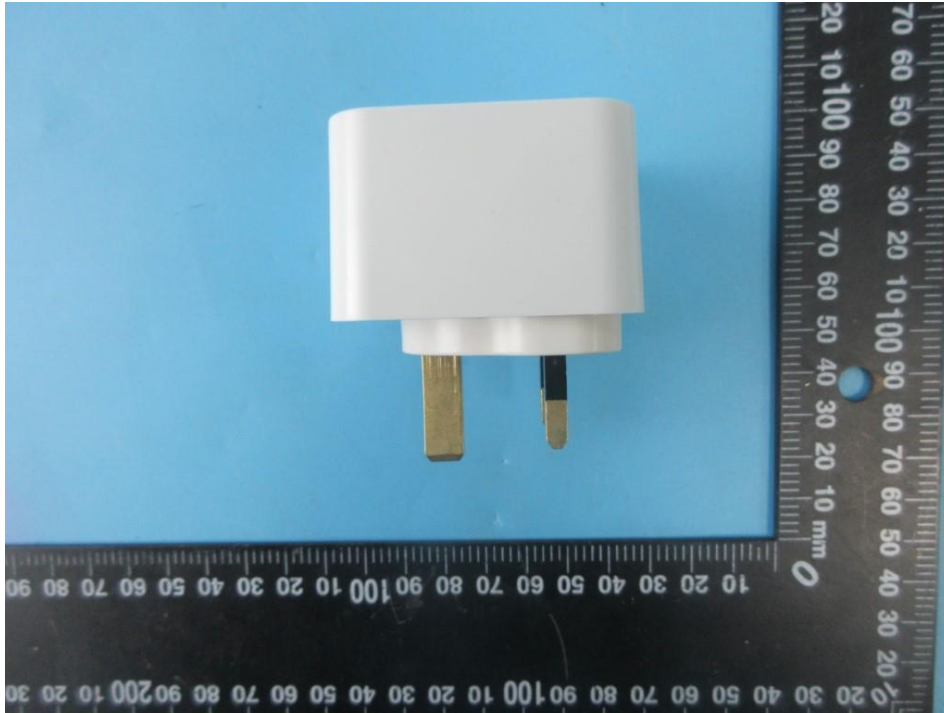


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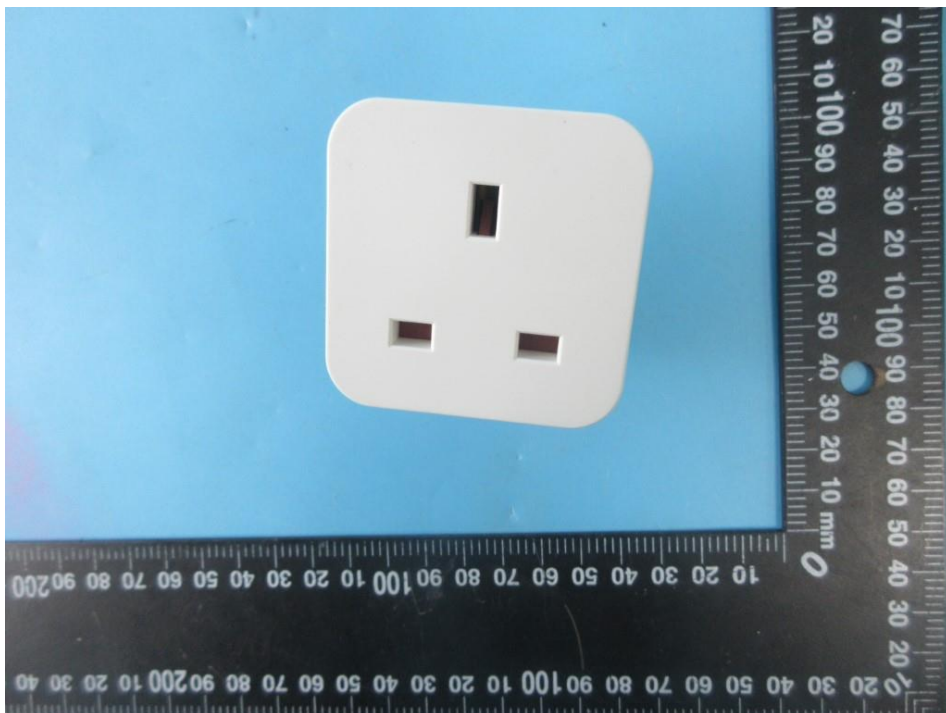
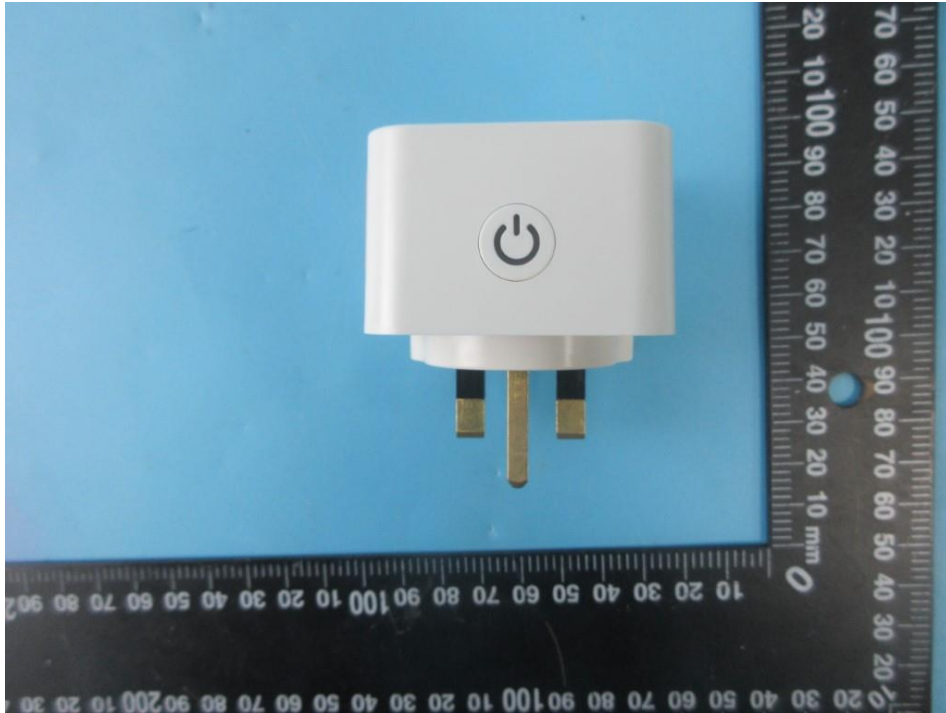


BS 1363-3			
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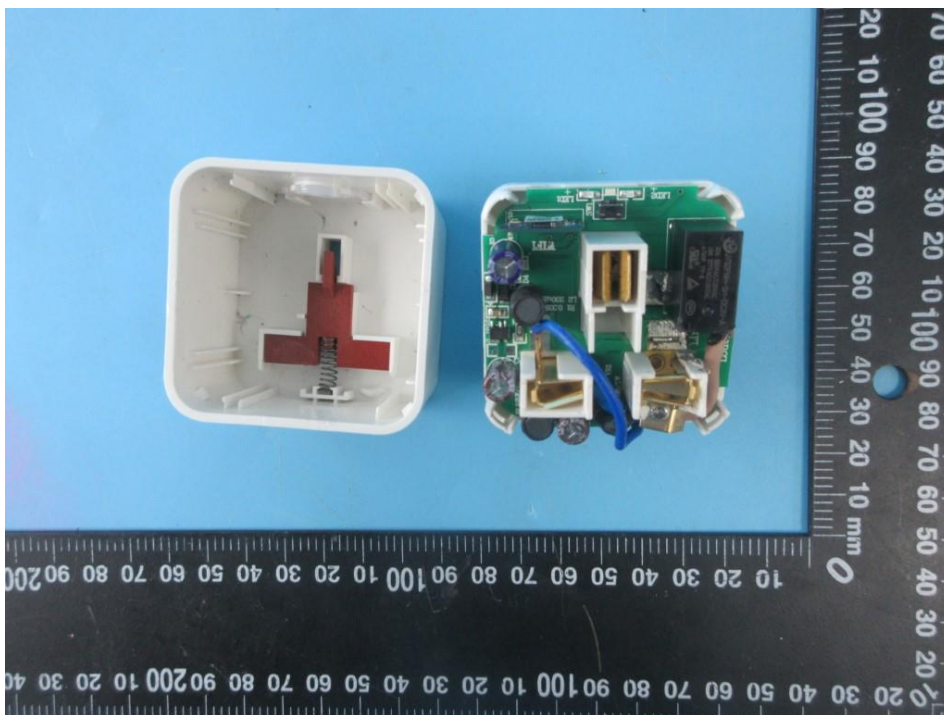
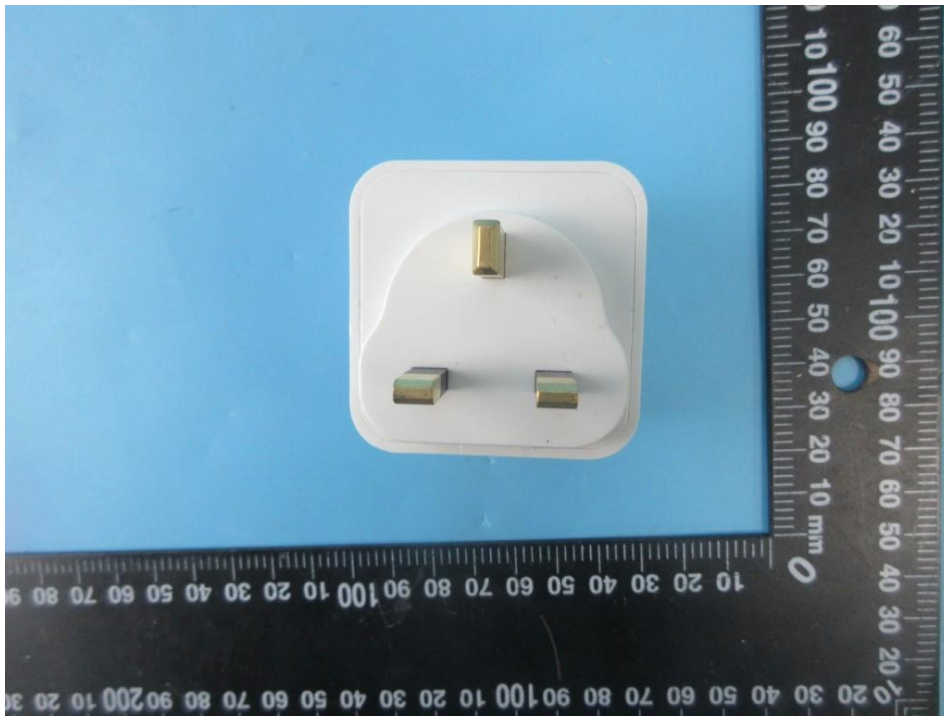
SPL-W-TY-PM-UK-RY



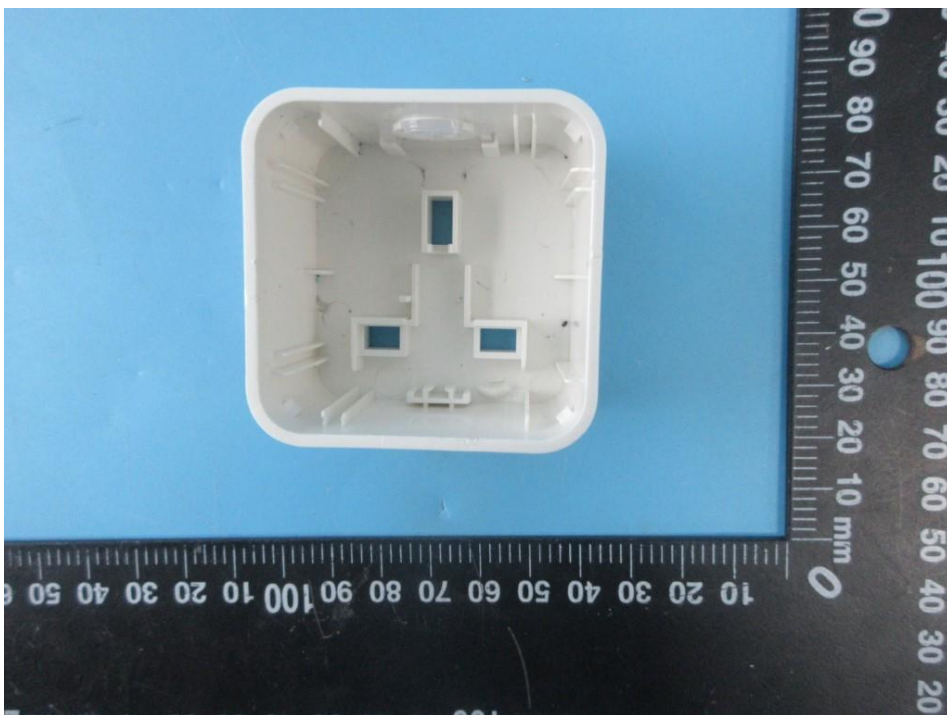
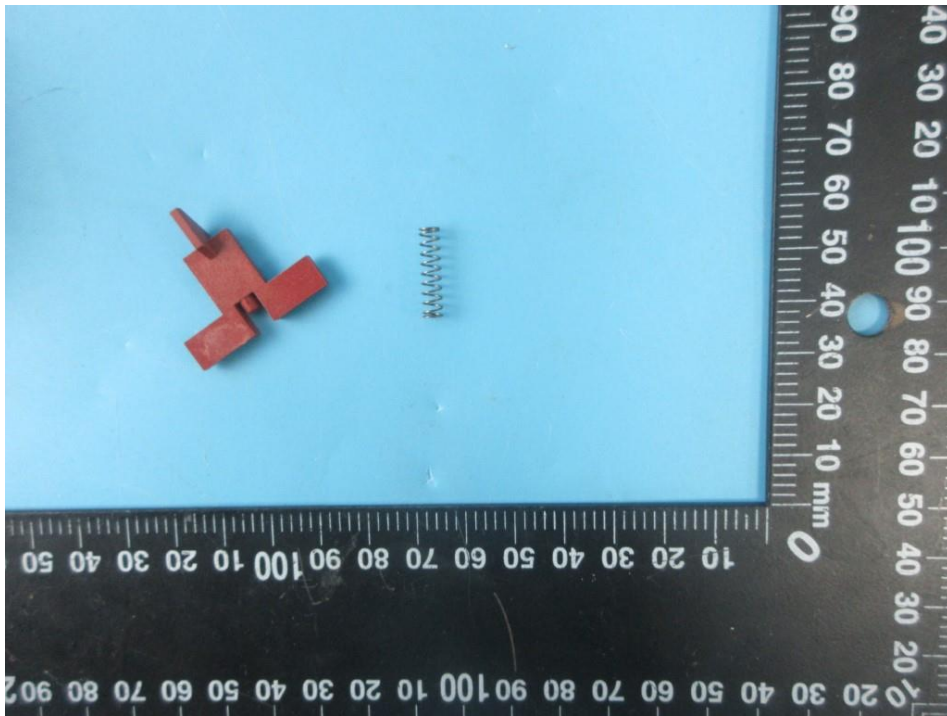
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Clause	Requirement – Test	Result - Remark	Verdict



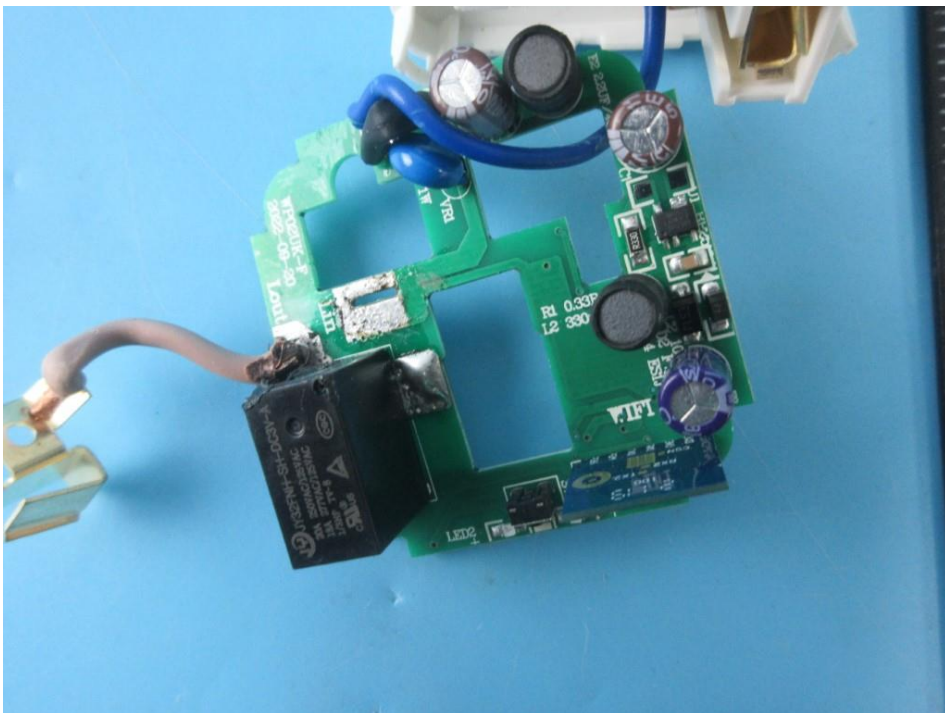
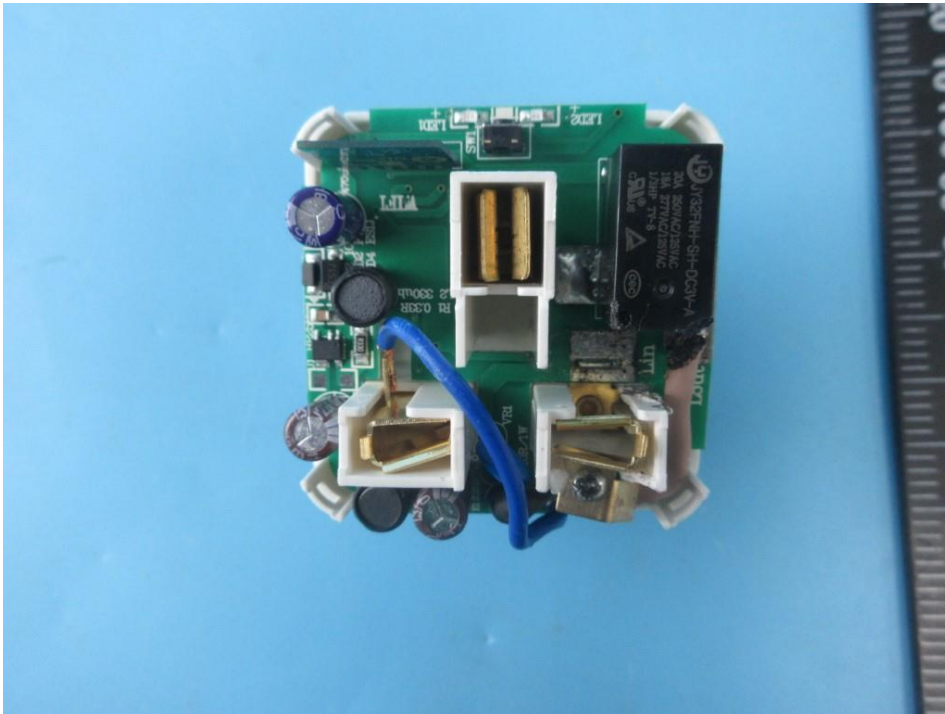
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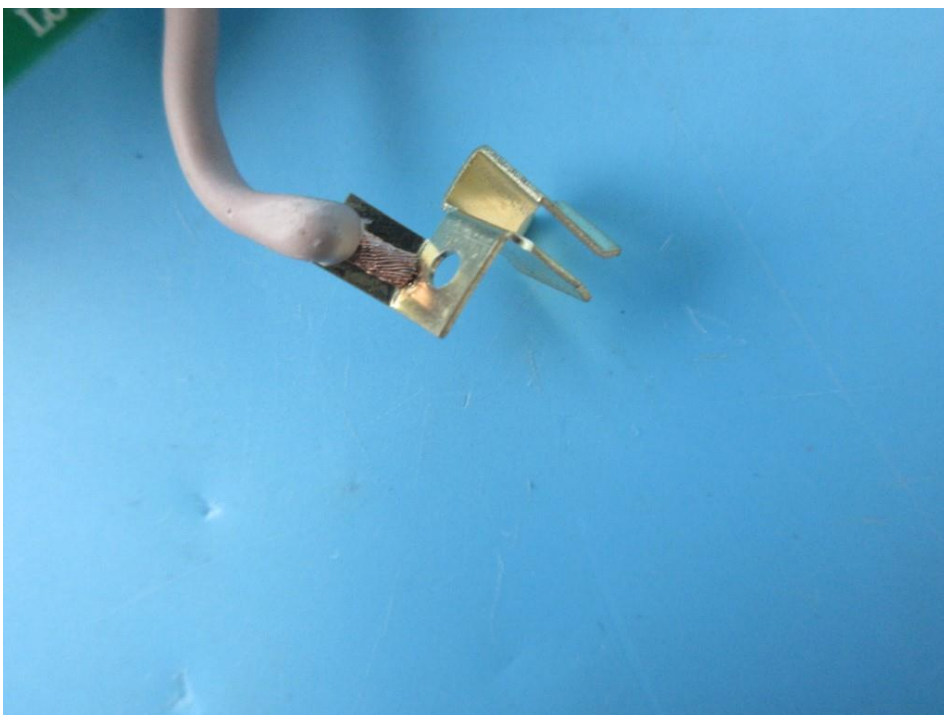
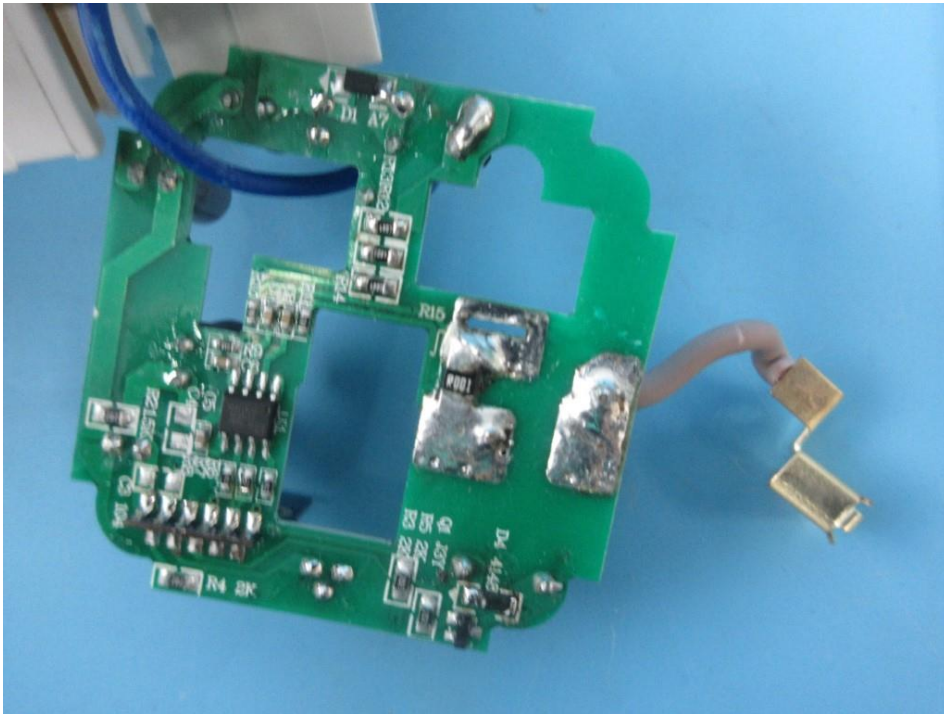
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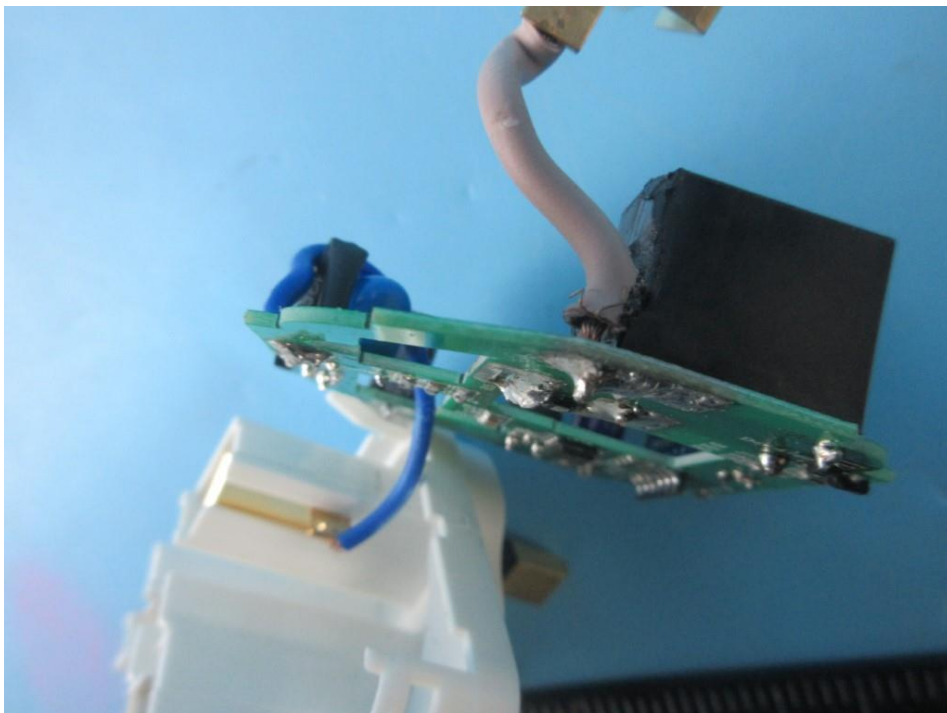
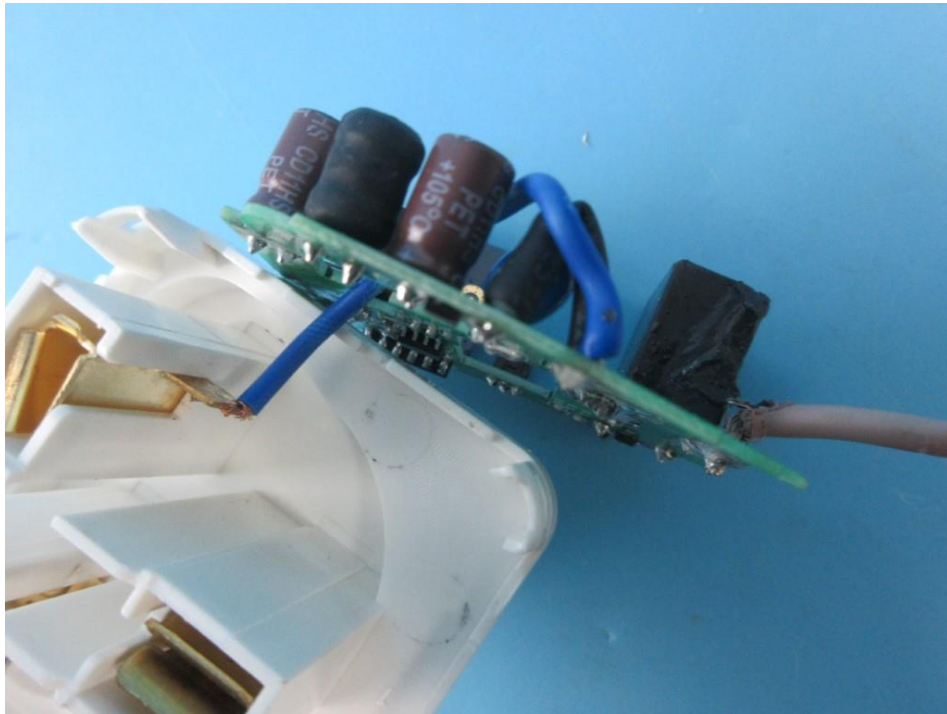
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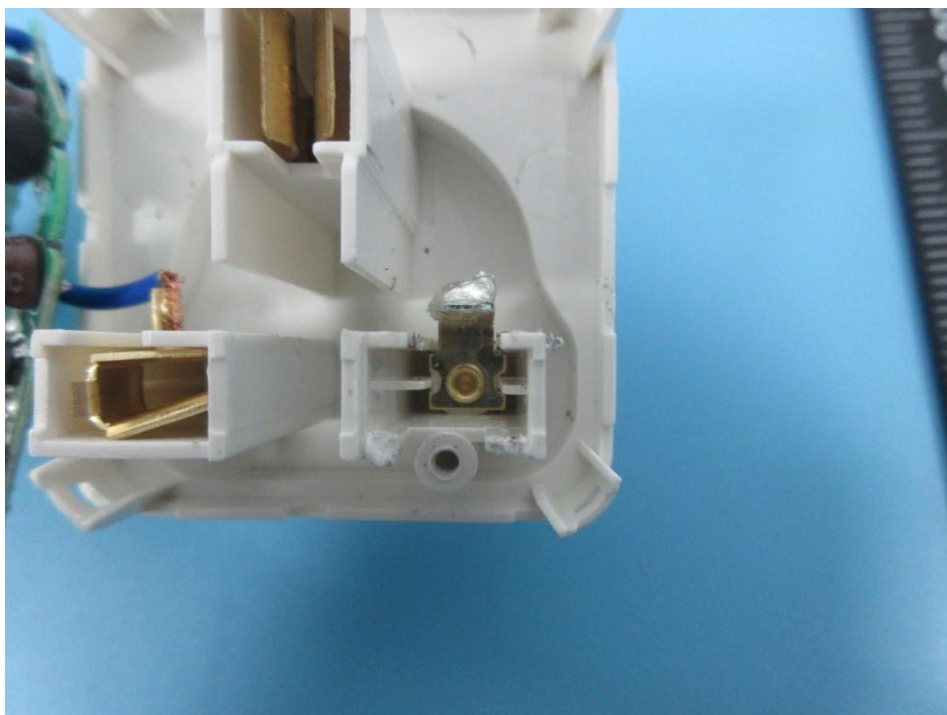
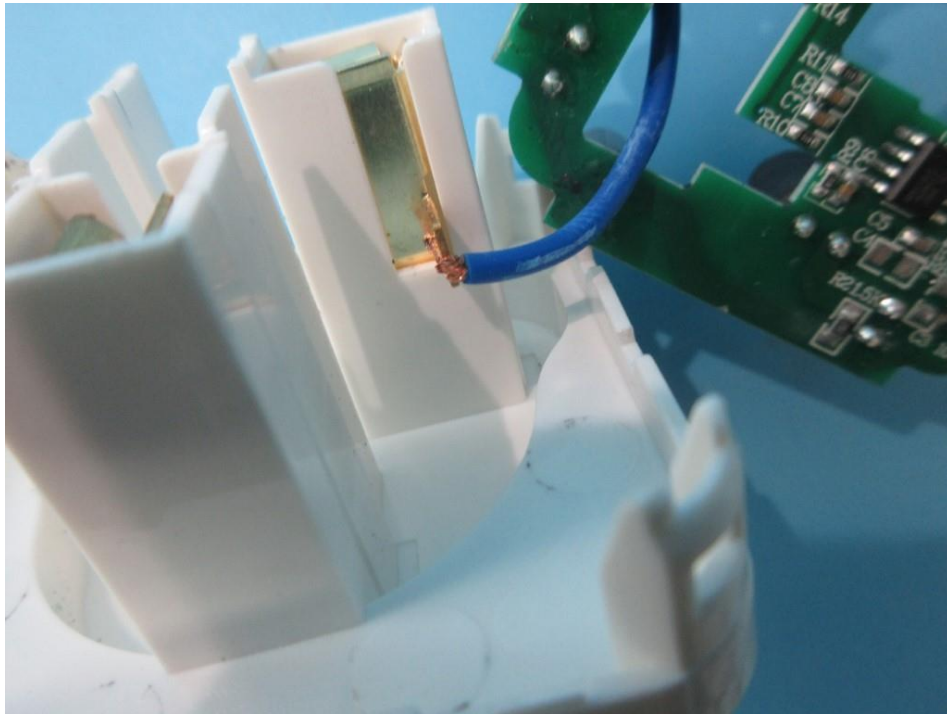
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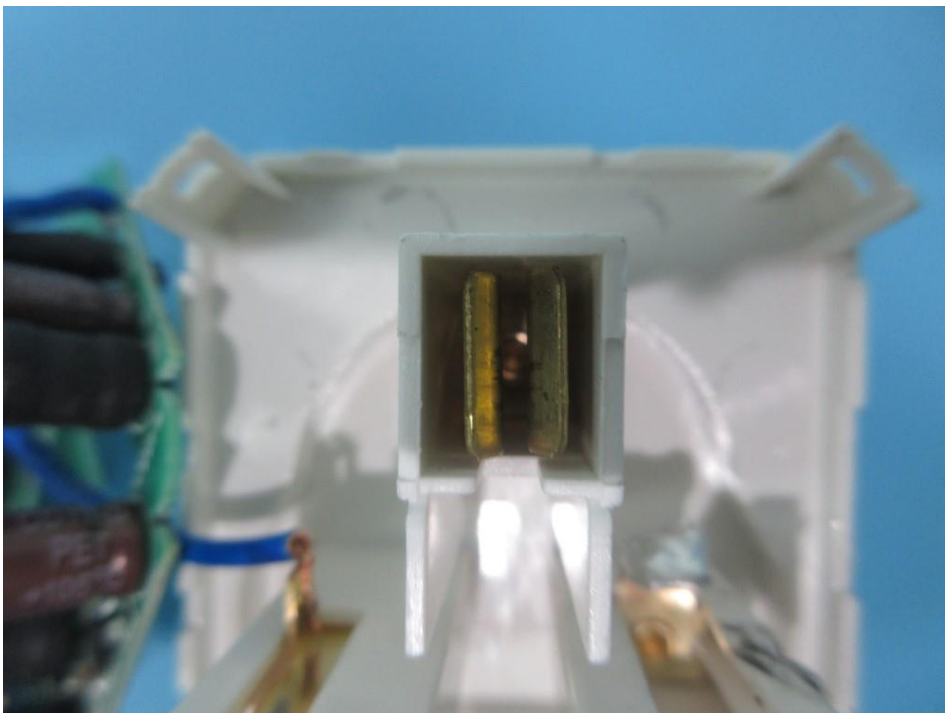
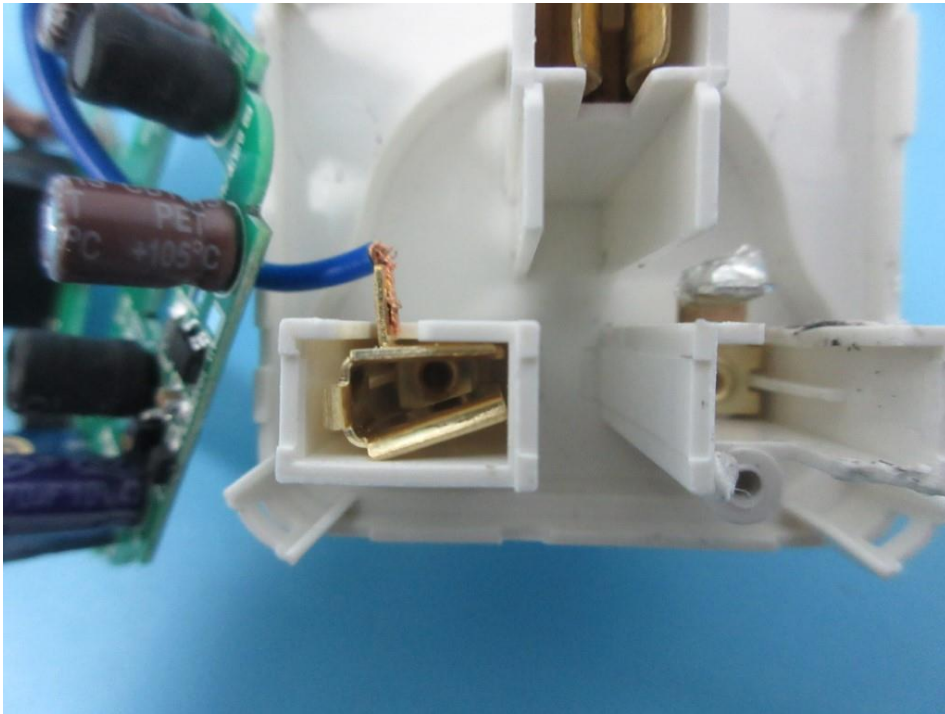
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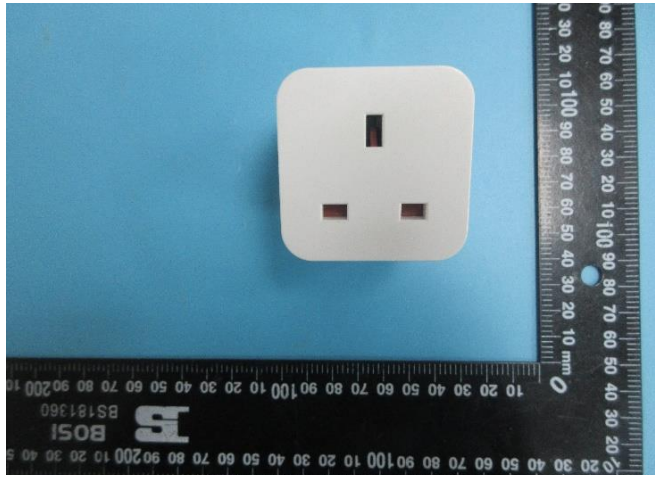


BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



BS 1363-3			
Clause	Requirement – Test	Result - Remark	Verdict



Test report no.: <i>Prüfbericht-Nr.:</i>	CN22DQGU 001 part 2 of 2	Order No.: <i>Auftragsnr.:</i>	180246649	Page 1 of 77 <i>Seite 1 von 77</i>
Client reference no.: <i>Kunden-Referenz-Nr.:</i>	N/A	Order date: <i>Auftragsdatum:</i>	2022-11-11	
Client: <i>Auftraggeber:</i>	ZHEJIANG AMAN LIGHTING CO., LTD. No. 171 North Star-Bridge Road, Yuhang District, Hangzhou, 311100 Zhejiang P.R. China			
Test item: <i>Prüfgegenstand:</i>	Smart Plug			
Identification / Type no.: <i>Bezeichnung / Typ-Nr.:</i>	SPL-W-TY-UK-RY; SPL-W-TY-PM-UK-RY; SPL-W-TY-UK-RY-Fu; SPL-W-TY-PM-UK-RY-Fu			
Order content: <i>Auftrags-Inhalt:</i>	Type test			
Test specification <i>Prüfgrundlage:</i>	EN 60669-2-1:2004+A1+A12 EN 60669-1:2018			
Date of sample receipt: <i>Wareneingangsdatum:</i>	2022-10-11			
Test sample no.: <i>Prüfmuster-Nr.:</i>	A003308646			
Testing period: <i>Prüfzeitraum:</i>	2023-10-10 - 2023-11-09			
Place of testing: <i>Ort der Prüfung:</i>	TÜV Rheinland/CCIC (Ningbo) Co., Ltd.			
Testing laboratory: <i>Prüflaboratorium:</i>	TÜV Rheinland/CCIC (Ningbo) Co., Ltd.			
Test result*: <i>Prüfergebnis*:</i>	Pass			
tested by: <i>geprüft von:</i>	<u>Fan Xu</u>	authorized by: <i>genehmigt von:</i>	<u>Jie Zheng</u>	
Date: 2023-05-22 <i>Datum:</i>	Signed by: Fan Xu	Issue date: 2023-05-22 <i>Ausstellungsdatum:</i>	Signed by: Jie Zheng	
Position / Stellung:	Project Engineer	Position / Stellung:	Report Authorizer	
Other: <i>Sonstiges:</i>	This report was created for the type test of Smart Plug.			
Condition of the test item at delivery: <i>Zustand des Prüfgegenstandes bei Anlieferung:</i>	Test item complete and undamaged Prüfmuster vollständig und unbeschädigt			
* Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark. <i>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</i>				

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Prüfbericht-Nr.:

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Remarks
Anmerkungen

1	<p>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</p> <p><i>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</i></p> <p><i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i></p>
2	<p>As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.</p> <p><i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i></p>
3	<p>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</p> <p><i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i></p>
4	<p>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</p> <p><i>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</i></p>
5	



TEST REPORT IEC 60669-2-1 Switches for household and similar fixed-electrical installations Part 2-1: Particular requirements - Electronic switches	
Report Reference No.	CN22DQGU 001 Part 2 of 2
Date of issue	See cover page
Total number of pages	See cover page
Testing Laboratory	TÜV Rheinland / CCIC (Ningbo) Co., Ltd
Address	3F Building C13, R&D Park, No.32 , Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo, 315048, P.R. China
Applicant's name	ZHEJIANG AMAN LIGHTING CO., LTD.
Address	No. 171 North Star-Bridge Road, Yuhang District, Hangzhou, 311100 Zhejiang P.R. China
Test specification:	
Standard	IEC 60669-2-1:2002 (Fourth edition) + A1:2008 used in conjunction with IEC 60669-1:1998 (Third edition) + A1:1999 + A2:2006
Test procedure	Type test
Non-standard test method	N/A
Test Report Form No.	IEC60669_2_1F
Test Report Form(s) Originator	IMQ S.p.A.
Master TRF	Dated 2010-12
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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
Test item description	Smart Plug
Trade Mark	SKYING
Manufacturer	Same as applicant
Model and/or type reference	SPL-W-TY-UK-RY; SPL-W-TY-PM-UK-RY; SPL-W-TY-UK-RY-Fu; SPL-W-TY-PM-UK-RY-Fu
Rating(s)	13A 240V~, Max. 3120W

Testing procedure and testing location:
 Testing Laboratory:

Testing location/ address : TÜV Rheinland / CCIC (Ningbo) Co., Ltd.
 3F Building C13, R&D Park, No.32 , Lane 299 Guanghua
 Road, National Hi-Tech Zone, Ningbo, 315048, P.R. China

 Associated Test Laboratory:

Testing location/ address :
 Tested by (name + signature) : See cover page
 Approved by (+ signature) : See cover page

 Testing procedure: TMP

Tested by (name + signature) :
 Approved by (+ signature) :
 Testing location/ address :

 Testing procedure: WMT

Tested by (name + signature) :
 Witnessed by (+ signature) :
 Approved by (+ signature) :
 Testing location/ address :

 Testing procedure: SMT

Tested by (name + signature) :
 Approved by (+ signature) :
 Supervised by (+ signature) :
 Testing location/ address :

 Testing procedure: RMT

Tested by (name + signature) :
 Approved by (+ signature) :
 Supervised by (+ signature) :
 Testing location/ address :

Summary of testing:	
Tests performed (name of test and test clause): Clause 101.3 Short-circuit test All the other tests This test report only refers to the tests of electronic switch portion; it should be used in conjunction with the test report CN22DQGU 001 Part 1 of 2 for adaptor portion. Appendix 1: additional tests according to EN 60669-2-1:2004 + A1: 2009 + A12:2010. Appendix 2: additional tests according to EN 60669-1:2018.	Testing location: Zhejiang Testing & Inspection Institute for Mechanical and Electrical Products Quality No.125, Miaohouwang Road, Binjiang District, Hangzhou, Zhejiang 310051, P.R.China TÜV Rheinland / CCIC (Ningbo) Co., Ltd. 3F Building C13, R&D Park, No.32 , Lane 299 Guanghua Road, National Hi-Tech Zone, Ningbo, 315048, P.R. China
Summary of compliance with National Differences: N/A	
Copy of marking plate Refer to part 1	

Test item particulars:

Type of electronic switch and its function (examples given in Annex AA)	Remote-controlled switch / electronically operated mechanical switching device
Pattern number	1
Contact opening (gap) and switch performance	normal-gap / mini-gap / micro-gap / without contact gap (semiconductor switching device)
Degree of protection against access to hazardous parts and against harmful effects due to the ingress of solid foreign objects	IP2X / IP4X / IP5X
Degree of protection against harmful effects due to the ingress of water	IPX0 / IPX4 / IPX5
Method of actuating	rotary / tumbler / rocker / push-button / cord-operated / momentary contact / touch / proximity / optical / acoustic / Electronic RCS / Electronic TDS / other external influences: remote control function
Method of mounting	surface-type / flush-type / semi flush-type / panel-type / architrave-type / height > 1,7 m
Method of installation	design A / design B
Type of terminals	screw-type / screwless (rigid) / screwless (rigid and flexible)
Flexible cable outlet	without / with
Rated current (A) / Rated load (VA or W)	13A / Max. 3120W
Minimum current (A) / Minimum load (VA or W)	N/A
Kind of load controlled by the switch	incandescent lamp / fluorescent lamps / motors / declared load: Resistive load
Type of switching mechanism	directly operated / sequentially operated / bistable / monostable (only for RCS)
Kind of energization of the control circuit	Electronic RCS energized by impulses / Electronics RCS permanently energized
Type of control mechanism	mechanical / thermal / pneumatic / hydraulic / electrical / combination(s) of the previous (only TDS)
Rated control voltage (V)	a.c. / d.c.
Rated control current (A)	a.c. / d.c.
Rated voltage (V)	110 V / 120 V / 130 V / 220 V / 230 V / 240 V
Rated frequency (Hz)	50Hz
Characteristic of fuses	N/A
Electronics RCS or TDS having	SELV parts / PELV parts

Possible test case verdicts:

- test case does not apply to the test object
- test object does meet the requirement
- test object does not meet the requirement

Testing:

- Date of receipt of test item
- Date (s) of performance of tests

General remarks:

The test results presented in this report relate only to the object tested.

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"(see appended table)" refers to a table appended to the report.

Throughout this report a comma (~~point~~) is used as the decimal separator.

The decision rule for statements of conformity in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report.

General product information:

Remote controlled adaptor, 13A 220-240V~, Max. 3120W, IP20, with BS 1363 plug and shuttered outlet, with solid plug pins, with mechanical switch with electric circuits which can be either switched on/off by integrated button or be remote controlled through App.

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
8	MARKING		P
8.1	Switches marked with:		P
	- rated voltage (V)	220-240V	P
	- rated control voltage, if different from rated voltage (V)		N/A
	- rated current (A) or rated load (VA or W)	13A Max. 3120W	P
	- symbol for nature of supply	~	P
	- manufacturer's or responsible vendor's name, trade mark or identification mark	SKYING	P
	- type reference	See "copy of marking plate on page 4"	P
	- symbol for mini-gap construction (m)		N/A
	- symbol for micro-gap construction (μ)	μ	P
	- symbol for semiconductor switching device (ϵ)		N/A
	- first IP characteristic numeral, if declared higher than 2, in which case the second characteristic numeral is also marked	IP20	N/A
	- second IP characteristic numeral, if declared higher than 0, in which case the first characteristic numeral is also marked	IP20	N/A
	- rated frequency (Hz)	50Hz	P
	- rating and type of any fuse incorporated	Fuse 15A, 250V for SPL-W-TY-UK-RY-Fu and SPL-W-TY-PM-UK-RY-Fu	P
	- symbol for kind of load (see 8.2)		N/A
	- the term "extension unit", if applicable, followed by the identifying reference		N/A
	- the minimum height for mounting the switch indicated in the installation instruction if there is a restriction (see 10.1)		N/A
	Switches with screwless terminals: marked with an indication of the suitability to accept rigid conductors only (if any)		N/A
	General purpose electronic switches with included automatic function, number of operations shall be stated in the accompanying instruction sheet when number of operation is higher than the indicated in sub clause 19.101, 19.102 and 19.104.		N/A
	- symbol for the adjustment of the delay time, if applicable		N/A
	- symbol for the positions "Permanent on" and "Permanent off", if applicable		N/A
	- symbol for "Delay time"		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.2	Symbols used: as required in the standard		P
	Marking for the nature of supply placed next to the marking for rated current and rated voltage		P
	Other particular symbols used are explained in the installation instructions		P
8.3	Marking of electronic switch placed on the main part:		N/A
	- rated current or rated load, rated voltage, symbol for nature of supply, rated frequency (if any), type of load, rating and type of any incorporated fuse (marked on the fuse-holder or in proximity of the fuse)		N/A
	- either the name, trade mark, or identification mark of the manufacturer or of the responsible vendor		N/A
	- length of insulation to be removed, if any		N/A
	- symbol for mini-gap construction, micro-gap construction or semiconductor switching device, if applicable		N/A
	- type reference		N/A
	Information concerning more than one type of load not already marked on the electronic switch are stated in the accompanying instruction sheet		N/A
	Minimum and maximum current/load are stated for each type of load		N/A
	Information of the iron core transformer intended to be used with the electronic switch are given in the instruction sheet		N/A
	Cover plates necessary for safety purposes and intended to be sold separately: marked with the manufacturer's or responsible vendor's name, trade mark or identification mark and type reference		N/A
	IP code, when applicable, marked so as to be easily discernible when the switch is mounted and wired as in normal use		N/A
	Marking clearly visible and easily legible		N/A
	Markings are placed on parts which cannot be removed without the use of a tool		N/A
8.4	Terminals for phase conductors (supply conductors): identified unless method of connection is of no importance, self-evident or indicated on a wiring diagram	Integrated with plug and socket	N/A
	Indications not placed on screws or other easily removable part		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Terminals associated with any one pole for switches of pattern number 2, 3, 03 and 6/2: similar identification differing from that of terminals associated with other poles		N/A
	Switches with more than two terminals: load terminal marked with an arrow pointing away from the terminal or with one of the symbol mentioned in 8.2		N/A
	Other terminals marked corresponding to the installation instructions		N/A
	Installation not made clear by the markings: a wiring diagram is provided with each electronic switch		N/A
	Terminals for the control circuit of a priority RCS with a current sensitive coil or voltage sensitive coil are marked with the appropriate symbol indicated in 8.2		N/A
	Terminals for the control circuit: marked according to IEC 60445 and/or with the symbols according to 8.2		N/A
8.5	Neutral terminals: N		N/A
	Earthing terminals: [earth symbol]		N/A
	Markings not placed on screws or other easily removable parts		N/A
	Terminals for conductors not forming part of the main function of the switch:		N/A
	- clearly identified unless their purpose is self-evident, or		N/A
	- indicated in a wiring diagram fixed to the accessory		N/A
	Identification of equipment terminals may be achieved by:		N/A
	- their marking with graphical symbols according to IEC 60417 or colours and/or alphanumeric system, or		N/A
	- their physical dimension or relative location		N/A
8.6	Switches marked to indicate the switch position: they are so marked that the direction of movement of the actuating member to its different positions or the actual position is clearly indicated.....		N/A
	Switches having more than one actuating member: marking indicates the effect achieved by the operation		N/A
	Marking clearly visible on the front of the switch		N/A
	Not possible to fix cover, cover plate, or removable actuating members in an incorrect position		N/A
	Symbols for "on" and "off" not used for indication of switch positions unless clearly indicate the direction of movement of the actuating members		N/A
	Off-state not marked with an "O" if the circuit on the load side is considered as live		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
8.6.101	Actual state of electronic switches intended to control the brightness of lamps is indicated		N/A
	- marking on the on-/off-state position		N/A
	- indicator lamp		N/A
	- adjusting the lamp dimmer in the lowest control state and at rated voltage minus 10%: light still visible		N/A
	When the indication of the electronic switch state is given only by the lamp, adjustment of the lamp at the lowest control state is made as specified in the following:		N/A
	- for incandescent lamps:		N/A
	the adjustment of lamp dimmers is made by the manufacturer		N/A
	not possible to reduce the lowest setting without a tool		N/A
	- for fluorescent lamps:		N/A
	the adjustment of lamp dimmers is made by the manufacturer		N/A
	it is possible for the installer to alter the lowest setting if indicated in an installation instruction		N/A
8.7	Red colour only for push-button to open the circuit		N/A
8.8	Special precautions necessary to take when installing the switch: details of these and clear information given in an instruction sheet which accompanies the switch		N/A
	Electronic switch containing a viewing window (lens) intended to be mounted at a height greater 1.7 m: information stated in the instruction sheet		N/A
8.9	Marking durable and easily legible. Test: 15 s with water and 15 s with petroleum spirit		P
9	CHECKING OF DIMENSIONS		N/A
	Switches and boxes comply with the appropriate standard sheets, if any		N/A
	Electronic switches with dimensions other than those specified in the standard sheets (if any) if they are supplied with suitable boxes		N/A
10	PROTECTION AGAINST ELECTRIC SHOCK		P
10.1	Switches: live parts not accessible		P
	Switches designed to be fitted with pilot lights supplied at voltages other than ELV have means to prevent direct contact with the lamp		P

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with standard test finger shown in figure 1 of IEC 60529		P
	Switches with thermoplastic or elastomeric material: additional test carried out at 35 °C ± 2 °C with the test probe 11 of IEC 61032 (75 N for 1 min)		P
	Test probe applied to:		N/A
	- thin-walled knock-outs with a force of 10 N		N/A
	- viewing windows or the like on electronic switches intended to be mounted at a height > 1,7 m with a force of 30 N		N/A
	During the test: switches not deform and no live parts accessible		P
10.2	Knobs, operating levers, push buttons, rockers and the like: of insulating material, unless:		P
	- accessible metal parts separated from metal parts of mechanism by double or reinforced insulation, or		N/A
	- reliably connected to earth		N/A
	For touch sensitive electronic switches the associated protective impedance does not have to comply with the requirements of clauses 16 and 23		N/A
	Accessible parts (for example, sensing surface) of electronic switches with IPX0 are connected to live parts by means of a protective impedance that:		N/A
	- consists of at least two independent resistors or independent capacitors in series of the same nominal value, or a combination of both		N/A
	- resistors comply with 102.3		N/A
	- capacitors comply with 102.2		N/A
	The removal of protective impedance is only possible by destruction of the electronic switch or by rendering it unusable		N/A
	Test carried out between accessible metal parts and earth, through a non-inductive resistor of 2 kΩ:		N/A
	current measured: ≤ 0,7 mA (peak value), for a.c. up to 1 kHz		N/A
	current measured: ≤ 0,7 mA multiplied by the value of frequency in kHz, but not exceed 70 mA, for a.c. above 1 kHz		N/A
	current measured: ≤ 2 mA, for d.c.		N/A
10.3	Accessible parts of switches with $I_n \leq 16$ A: made of insulating material		P

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.3.1	Metal covers or cover plates protected by supplementary insulation made by insulating linings or insulating barriers		N/A
	Insulating linings or insulating barriers:		N/A
	- cannot be removed without being permanently damaged, or designed that		N/A
	- cannot be replaced in an incorrect position; if they are omitted, accessories are rendered inoperable or manifestly incomplete; there is no risk of accidental contact between live parts and metal covers or cover plates; precautions are taken to prevent creepage distances or clearances becoming less than the values specified in clause 23		N/A
10.3.2	Earthing of metal covers or cover plates: connection of low resistance		N/A
10.4	Metal parts of mechanism not insulated from live parts: not protrude from enclosure		N/A
	Switches operated by means of a removable key or similar device: metal parts of mechanism insulated from live parts		N/A
10.5	Metal parts of mechanism not accessible and insulated from accessible metal parts, unless		N/A
	- separated from live parts (creepage distances and clearances have at least twice the value specified in clause 23), or		N/A
	- reliably connected to earth		N/A
10.6	Switches operated by means of a removable key or an intermediate part: key or an intermediate part can only touch parts insulated from live parts		N/A
	key or intermediate part: insulated from metal parts of mechanism, unless		N/A
	creepage distances and clearances between live parts and metal parts of mechanism have at least twice the values specified in clause 23		N/A
10.7	Cord-operated switches: impossible to touch live parts when fitting or replacing the pull cord		N/A
10.101	If a cover or cover-plate or a fuse can be removed without a tool or if the installation instructions for the user indicate that, for the purpose of maintenance, when replacing the fuse, covers and cover plates fastened by means of a tool have to be removed, the protection against contact with live parts is assured even after removal of cover or cover-plate (this requirement does not apply when the electronic switch must be dismantled from its supporting means for the replacement of the fuse-link)		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked with the test probe B of IEC 61032 (10 N); test probe does not touch live parts		N/A
10.102	Hole in electronic switches for adjusting the setting:		N/A
	The adjustment does not involve the risk of an electric shock		N/A
	Compliance is checked by applying a test pin according to figure 101 through the hole; test pin does not touch live parts		N/A
10.103	Ventilation openings over live parts:		N/A
	A foreign body introduced into these openings do not come into contact with any live parts		N/A
	Compliance is checked by applying the test probe 13 of IEC 61032 through the openings; pin of test probe does not touch live parts		N/A

11	PROVISION FOR EARTHING		N/A
	Clause not applicable to SELV electronic switches		N/A
11.1	Accessible metal parts: provided with, or permanently and reliably connected to, an earthing terminal		N/A
11.2	Earthing terminals: with screw clamping or screwless terminals and comply with clause 12		N/A
	Capacity of earthing terminals of the same size as the corresponding terminals for the supply conductors		N/A
	Any additional external earthing terminal has a size suitable for conductors of at least 6 mm ² (mm ²)		N/A
11.3	Surface-type switches with an enclosure of insulating material, with IP > X0 and more than one cable inlet, are provided for the continuity of the earthing circuit with:		N/A
	- an internal fixed earthing terminal, or		N/A
	- adequate space for a floating terminal allowing the connection of an incoming and outgoing conductor		N/A
11.4	Connection between earthing terminal and accessible metal parts: of low resistance		N/A
	Test current equal to 1,5 I _n or 25 A (A)		—
	Resistance ≤ 0,05 Ω (Ω)		N/A

12	TERMINALS		N/A
12.1	General		N/A
	Switches provided with screw-type terminals or with screwless terminals		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Clamping means of terminals: not serve to fix any other components		N/A
	All the test on terminals, with the exception of the test of 12.3 11, made after the test of 15.1		N/A
	Terminals having screw clamping complying with IEC 60998-2-1 are considered to be in compliance with the requirements and the tests of Subclause 12.2, except those of 12.2.6 and 12.2.7 and 12.2.8, provided they are chosen according Table 2.		N/A
12.2	Terminals with screw clamping for external copper conductors		N/A
12.2.1	Switches provided with terminals which allows the proper connection of copper conductors as shows in table 2		N/A
	Rated current (A)		—
	Type of conductor (rigid / flexible)		—
	Smallest / largest cross-sectional area (mm ²)		—
	Diameter of largest conductor (mm)		—
	Figure of terminal	1 / 2 / 3 / 4 / 5	—
	Minimum diameter D (minimum dimensions) of conductor space: required (mm); measured (mm) ...:		N/A
12.2.2	Terminals allow the conductor to be connected without special preparation		N/A
12.2.3	Terminals have adequate mechanical strength		N/A
	Screws and nut for clamping the conductors have metric ISO thread or a comparable thread		N/A
	Screws not of soft metal such as zinc or aluminium		N/A
12.2.4	Terminals resistant to corrosion		N/A
12.2.5	Screw-type terminals clamp the conductor(s) without undue damage	See appended table 12.2.5	N/A
	During the test: conductor not slip out, no break near clamping unit and no damage		N/A
12.2.6	Terminals clamp the conductor reliably between metal surfaces	See appended table 12.2.6	N/A
	During the test: conductor not move noticeably		N/A
12.2.7	Terminals designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened	See appended table 12.2.7	N/A
	After the test: no wire of the conductor escaped outside the clamping unit thus reducing creepage distances and clearances to values lower than those indicated in clause 23		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
12.2.8	Terminals not work loose from their fixing to the switch		N/A
	Torque test:		N/A
	- rated current (A)		—
	- solid rigid copper conductor of the largest cross-sectional area (mm ²) (table 2)		—
	- torque (Nm) (table 3 or appropriate figures 1, 2, 3, 4)		—
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no damage		N/A
12.2.9	Clamping screws or nuts of earthing terminals: adequately locked against accidental loosening, not possible to loosen them without the aid of a tool		N/A
12.2.10	Earthing terminals: no risk of corrosion		N/A
	Body of brass or other metal no less resistant to corrosion		N/A
	If the body is a part of a frame or enclosure of aluminium alloy, precautions are taken to avoid the risk of corrosion		N/A
12.2.11	Pillar terminals: distance g no less than the value specified in figure 1: required (mm); measured (mm)		N/A
	Mantle terminals: distance g no less than the value specified in figure 5: required (mm); measured (mm)		N/A
12.2.12	Lug terminals:		N/A
	- used only for switches having rated current ≥ 40 A		N/A
	- fitted with spring washers or equally effective locking means		N/A
12.3	Screwless terminals for external copper conductors		N/A
12.3.1	Screwless terminals of the type suitable for:		N/A
	- for rigid copper conductors only, or		N/A
	- for both rigid and flexible copper conductors (tests carried out with rigid and then repeated with flexible conductors)		N/A
12.3.2	Screwless terminals provided with clamping units which allow the proper connection of rigid or of rigid and flexible conductors having nominal cross-sectional areas as shown in table 7		N/A
	Rated current (A)		—
	Type of conductor (rigid / flexible)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Smallest / largest cross-sectional area (mm ²)		—
	Diameter of largest rigid conductor (mm)		—
	Diameter of largest flexible conductor (mm)		—
12.3.3	Screwless terminals allow the conductor to be connected without special preparation		N/A
12.3.4	Parts of screwless terminals intended for carrying current of materials as specified in 22.5		N/A
12.3.5	Screwless terminals clamp specified conductors with sufficient contact pressure without undue damage to the conductor		N/A
	Conductor clamped between metal surfaces		N/A
12.3.6	It is clear how the connection and disconnection of the conductors is to be made		N/A
	Disconnection of a conductor require an operation, other than a pull, so that can be made manually with or without a general-purpose tool		N/A
	It is not possible to confuse the opening for the use of a tool with the opening intended for the conductor		N/A
12.3.7	Screwless terminals intended for the interconnection of two or more conductors:		N/A
	- during insertion, operation of clamping means of one of the conductors is independent of operation of that for the other conductor(s);		N/A
	- during disconnection, conductors can be disconnected either at the same time or separately;		N/A
	- each conductor introduced in a separate clamping unit.		N/A
	It is possible clamp securely any number of conductors up to the maximum as designed. Number of conductors; Nominal cross-sectional area (mm ²)		N/A
12.3.8	Screwless terminals: adequate insertion obvious and over-insertion prevented		N/A
	Screwless terminals of switches: undue insertion of the conductor prevented by a stop if further insertion is liable to reduce creepage distances and/or clearances required in table 20 or to influence the mechanism		N/A
12.3.9	Screwless terminals properly fixed to the switch		N/A
	Not work loose when conductors are connected or disconnected		N/A
	Self-hardening resins used to fix terminals not subject to mechanical stress		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
12.3.10	Screwless terminals withstand mechanical stresses occurring in normal use		N/A
	During application of the pull conductor not come out of the terminal		N/A
	Test with apparatus shown in figure 10		N/A
	During the test conductors not move noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
12.3.11	Screwless terminals withstand electrical and thermal stresses occurring in normal use		N/A
	After the test: inspection show no changes		N/A
	Repetition of test according to 12.3.10: screwless terminals withstand mechanical stresses occurring in normal use		N/A
	During application of the pull conductor not come out of the terminal		N/A
	Test with apparatus shown in figure 10		N/A
	During the test conductors not move noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
12.3.12	Screwless terminals: connected rigid solid conductor remains clamped, even when deflected during normal installation		N/A

13	CONSTRUCTIONAL REQUIREMENTS		P
13.1	Insulating lining, barriers and like: adequate mechanical strength and secured in a reliable manner		P
13.2	Switches constructed so as to permit:		N/A
	- easy introduction and connection of the conductors in the terminals;		N/A
	- correct positioning of the conductors		N/A
	- easy fixing of the switch to a wall or in a box		N/A
	- adequate space between underside of the base and the surface on which the base is mounted or between the sides of the base and the enclosure (cover or box)		N/A
	Surface-type switches: fixing means do not damage insulation of the cable		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Switches classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors		N/A
13.3	Covers, cover-plates and actuating members or parts of them intended to ensure protection against electric shock:		P
	- held in place at two or more points by effective fixings		P
	- fixed by means of a single fixing, for example by a screw, provided that they are located by another means (for example by a shoulder)		N/A
	Fixings of covers, cover-plates or actuating members of switches of design A serves to fix the base: there is means to maintain the base in position, even after removal of the covers, cover-plates or actuating members		N/A
13.3.1	Covers, cover plates or actuating members whose fixing is of the screw-type:		N/A
	Compliance checked by inspection only		N/A
13.3.2	Covers, cover plates or actuating members whose fixing is not dependent on screws and whose removal is obtained by applying a force in a direction approximately perpendicular to the mounting/supporting surface:		N/A
	Compliance checked, when their removal may give access, with the standard test finger:		N/A
	to live parts: by the test of 20.4 (verification of the non-removal and the removal)		N/A
	to non-earthed metal parts separated from live parts by creepage distances and clearances according to table 20: by the test of 20.5 (verification of the non-removal and the removal)		N/A
	only to insulating parts, or earthed metal parts, or metal parts separated from live parts by creepage distances and clearances twice those according to table 20, or live parts of SELV circuits not greater than 25 V a.c.: by the test of 20.6 (verification of the non-removal and the removal)		N/A
13.3.3	Covers, cover-plates or actuating members whose fixing is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's information given in an instruction sheet or in a catalogue:		N/A
	Compliance checked, when their removal may give access, with the standard test finger:		N/A
	to live parts: by the test of 20.4 (verification of the non-removal only)		N/A
	to non-earthed metal parts separated from live parts by creepage distances and clearances according to table 20: by the test of 20.5 (verification of the non-removal only)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	only to insulating parts, or earthed metal parts, or metal parts separated from live parts by creepage distances and clearances twice those according to table 20, or live parts of SELV circuits not greater than 25 V a.c.: by the test of 20.6 (verification of the non-removal only)		N/A
13.4	Switches: no free openings in their enclosures according to their IP classification		P
	Free openings according to 10.102 and 10.103 are accepted		N/A
13.5	Knobs of electronic switches are securely fixed in a reliable manner		N/A
	knobs used to indicate the position of switches: not possible to fix them in a wrong position, if this may result in a hazard		N/A
	Pull and push tests:		N/A
	- axial pull is likely to be applied: 30 N for 1 min		N/A
	- axial pull is unlikely to be applied: 15 N for 1 min		N/A
	- axial push: 30 N for 1 min		N/A
	During and after these tests:		N/A
	- the electronic switch shows no damage		N/A
	- an knob have not moved so as to impair compliance with this standard		N/A
13.6	Screws or other means for mounting the switch on a surface or in a box or enclosure: easily accessible from the front.		N/A
	Fixing means not serve any other fixing purpose		N/A
13.7	Combinations of switches, or of switches and socket-outlets, comprising separate bases: correct position of each base ensured		N/A
	Fixing of each base independent of the fixing of the combination to the mounting surface		N/A
13.8	Accessories combined with switches: comply with their standard		P
13.9	Surface-type switches with IP > 20 are in according to their classification when fitted with conduits or with sheathed cables		N/A
	Surface-type switches with IPX4 or IPX5 have provisions for opening a drain hole		N/A
	Switches provided with a drain hole: it is not less than 5 mm in diameter, or 20 mm ² in area with a width and a length not less than 3 mm	∅ mm / mm ²	N/A
	Drain hole: effective		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
13.10	Switches to be installed in a box: conductor ends can be prepared after the box is mounted in position, but before the switch is fitted in the box		N/A
	Base have adequate stability when mounted in the box		N/A
13.11	Surface-type switches with IP > X0, pattern numbers 1, 5 and 6, with more than one inlet opening, provided with:		N/A
	- fixed additional terminal complying with the requirements of clause 12, or		N/A
	- adequate space for a floating terminal		N/A
13.12	Inlet openings: allow the introduction of the conduit or the sheath of the cable		N/A
	Surface-type switches: intended conduit or protective covering can enter at least 1 mm into the enclosure		N/A
	Inlet openings for conduit entries of surface-type switches: capable of accepting conduit sizes of 16, 20, 25 or 32 or a combination of at least two of these sizes not excluding two of the same size		N/A
	Inlet openings for cable entries of surface-type switches: capable of accepting cables having the dimensions specified in table 12 or be as specified by the manufacturer: rated current (A); limits of external diameter of cables min/max (mm)		N/A
13.13	Surface-type switches: provision for back entry (if are intended)		N/A
13.14	Membranes or the like (if provided): replaceable		N/A
13.15	Requirements for membranes in inlet openings		N/A
13.15.1	Membranes, lenses and the like reliably fixed and not displaced by the mechanical and thermal stresses occurring in normal use		N/A
	Test on electronic switches fitted with membranes, lenses and the like subjected to the ageing treatment specified in 15.1:		N/A
	Electronic switches placed at 40 °C ± 2 °C for 2 h; force of 30 N applied for 5 s by means of the tip of test probe 11 of IEC 61032. During these tests: membranes, lenses and the like are not deformed, live parts not accessible		N/A
	Membranes, lenses and the like likely to be subjected to an axial pull: axial pull of 30 N applied for 5 s. During this test: membranes, lenses and the like not come out		N/A
	Test repeated on membranes, lenses and the like not subjected to any treatment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
13.15.2	Membranes in inlet openings: introduction of the cables into the accessory permitted when the ambient temperature is low		N/A
	Test on membranes not subjected to the ageing treatment specified in 15.1 and fitted with the switches		N/A
	Switches kept at -5 °C for 2 h: possibility to introduce cables of the heaviest type through the membranes		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.16	Flexible cable outlet switches: flexible cable (60245 IEC 66 or 60227 IEC 53, or as specified by the manufacturer) may enter the switch through a suitable hole, groove or gland		N/A
	Maximum dimension of flexible cable having conductors specified in table B.1 accepted by the entry:		N/A
	- rated current (A)		—
	- cross-sectional area (mm ²) (min 1,5 mm ²)		—
	Entry shaped to prevent damage to the flexible cable		N/A
	Switches intended to be connected via a flexible cable to an electronic extension unit having a rated current equal to the rated current of the electronic switch: flexible cable complies with 60245 IEC 66 or 60227 IEC 53 with a minimum cross sectional area of 0,75 mm ²		N/A
	Switches intended to be connected via a flexible cable to an electronic extension unit having a rated current lower than the rated current of the electronic switch: flexible cable complies with the requirements of 13.103		N/A
	Switches with flexible cable outlet: provided with cable anchorage		N/A
	Cable anchorage: contains the sheath, of insulating material or provided with an insulating lining fixed to the metal parts		N/A
	Cable anchorage: anchor the flexible cable securely to the switch		N/A
	Cable anchorage cannot be released from the outside		N/A
	Use of a special purpose tool not required		N/A
	Screws: not serve to fix any other component, unless		N/A
	- switch is rendered manifestly incomplete if component omitted or replaced in an incorrect position, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- component cannot be removed without further use of a tool		N/A
	Pull test (30 N, 25 times): cable 60227 IEC 53, cross-sectional area 1,5 mm ² ; torque (Nm) (2/3 table 3)		N/A
	Torque test: torque 0,15 Nm for 1 min, cable not displaced > 2 mm		N/A
	Pull test (60 N, 25 times): cable 60245 IEC 66, diameter (mm) of cable; torque (Nm) (2/3 table 3) ...:		N/A
	Torque test: torque 0,35 Nm for 1 min, cable not displaced > 2 mm		N/A
	Test voltage of 2000 V a.c. applied for 1 min between the conductors and the cord anchorage:		N/A
	During the test: insulation of flexible cable not damaged (no breakdown or flashover)		N/A
13.101	Automatic protective devices incorporated in electronic switches for lamp circuits have at least micro-disconnection		N/A
	Cut-outs in electronic switches for motor speed control circuits: non-self-resetting		N/A
13.102	Electronic switches for the control of the voltage of iron core transformers for extra low-voltage incandescent lamps (for example, halogen): maximum tolerance of the phase-control angle between the positive and negative half-wave of $\pm 2^\circ$:		N/A
13.103	TDS shall be of the resetting type		N/A
14	MECHANISM		P
	Clause only applicable to electronic switches provided with mechanical switching devices		P
14.1	Actuating member of a switch, when released, automatically take up the position corresponding to that of moving contacts		P
14.2	Moving contact of switches can come to rest only in "on" and "off" positions		N/A
	Intermediate position permissible if:		N/A
	- it corresponds to the intermediate position of the actuating member, and		N/A
	- the insulation between fixed and moving contacts is adequate. Electric strength test as specified in 16.2: test voltage a.c. for 1 min (V)	500 V / 750 V / 1250 V / 2000 V	N/A
14.3	No undue arcing in slowly operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test carried out at the end of the test of clause 19.1: breaking of the circuit 10 times, actuating member moved over a period of 2 s. During the test: no sustained arcing		N/A
14.4	Switches of pattern numbers 2, 3, 03 and 6/2 make and break all poles substantially simultaneously		N/A
	Neutral pole of switches of pattern numbers 03 not make after or break before the other poles		N/A
14.5	Action of the mechanism: independent of the presence of cover or cover plate. Test: no flicker		N/A
14.6	Cord-operated switches: effecting a change by application and removal a pull not exceeding:		N/A
	- 45 N applied vertically, and		N/A
	- 65 N applied at 45° ± 5°		N/A
14.101	Position indicator used in RCS equipped with an incorporated hand-operated device indicates the position of the switching circuit clearly and without ambiguity		N/A
	TDS equipped with an incorporated hand-operated device and a position indicator is used indicates the position of the switching circuit clearly and without ambiguity		N/A

15	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES OF SWITCHES, AND RESISTANCE TO HUMIDITY		P
15.1	Resistance to ageing		P
	Switches and boxes placed for 7 days (168 h) in a heating cabinet at 70 °C ± 2 °C		P
	- no crack visible after test with normal or corrected vision without additional magnification		P
	- no sticky or greasy material as a result of heat		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no other damage as a result of heat		P
15.2	Protection provided by enclosures of switches		P
15.2.1	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		P
	Enclosure of the switch provides a degree of protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects in accordance with the IP classification of the switch		P
	Glands: torque (Nm) (2/3 of torque applied in 20.3) :		—
	Screws of the enclosure: torque (Nm) (2/3 table 3)		—

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Clause	Requirement + Test	Result - Remark	Verdict
15.2.1.1	Protection against access to hazardous parts		P
	Appropriate test according to IEC 60529: IP20		P
15.2.1.2	Protection against harmful effects due to ingress of solid foreign objects		P
	Appropriate test according to IEC 60529: IP20		P
	Dust not penetrate in quantity to interfere with satisfactory operation or to impair safety		P
15.2.2	Protection against harmful effects due to ingress of water		N/A
	Enclosure of switches provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification		N/A
	Appropriate test according to IEC 60529: IP		N/A
	Flush-type and semi-flush-type switches fixed:		N/A
	- in a test wall using an appropriate box in accordance with the manufacturer's instructions		N/A
	- in a test wall according to figure 27		N/A
	Screws of the enclosure: torque (Nm) (2/3 table 3): —		—
	Glands: torque (Nm) (2/3 of torque applied in table 19): —		—
	Specimens withstand an electric strength test specified in 16.2 which is started within 5 min of completion of the test		N/A
15.3	Resistance to humidity		P
	Switches proof against humidity which may occur in normal use		P
	Compliance checked by a humidity treatment carried out in a humidity cabinet containing air with relative humidity maintained between 91 % and 95 %. Specimens kept in the cabinet for:		P
	- 2 days (48 h) for switches with IPX0		P
	- 7 days (168 h) for switches with IP>X0		N/A
	After this treatment: specimens show no damage		P
16	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
16.1	The insulation resistance measured 1 min after application of 500 V d.c.	See appended table 16.1	P
16.2	Electric strength: a.c. test voltage applied for 1 min	See appended table 16.2	P
17	TEMPERATURE RISE		P
17.1	Switches so constructed that the temperature rise in normal use is not excessive		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No oxidation or any other deterioration of contacts, if any		P
	Material and components of electronic switch are not adversely effected by the temperature rise in normal use		P
	During the test:		P
	- electronic switch state not change		P
	- fuses and other protective devices not operate		N/A
	- permissible temperature rises determined in table 102, column concerning clause 17, not exceeded	See appended table 17	P
	After the test, electronic switch is in operating condition		P
	Sealing compounds, if any, have not flowed		N/A

18	MAKING AND BREAKING CAPACITY		P
	Electronic switches have adequate making and breaking capacity		P
	Test carried out only on electronic switches provided with mechanically or electromechanically operated contact mechanisms		P
	Contact mechanisms have adequate making and breaking capacity		P
	Test made on three new specimens of the complete contact mechanism		P
	Model/type reference	SPL-W-TY-UK-RY-Fu	—
	Pattern number	1	—
	Rated current (A) / Rated load (W or VA)	13A Max. 3120W	—
	Rated voltage (V)	220-240V	—
	Test for electronics switches for the control of:		P
	- fluorescent lamp loads, as specified in 18.1 of part 1;		N/A
	- motor speed control circuits, as specified in 18.1 of part 1 and, additionally, in 18.101;		N/A
	- voltage of iron core transformers for extra low-voltage incandescent lamps, as specified in 18.1, 18.2 of part 1 and, additionally, in 18.102;		N/A
	- voltage of electronic step-down converters for extra low-voltage incandescent lamps, as specified in 18.2 of part 1;		N/A
	- other types of load, as specified in 18.1 and 18.2 of part 1.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Rate of operation (operation per minute)	15	—
	Electronic switches whose cycle of operation limited by their application: rate of operation specified by the manufacturer (operation per minute)		—
	Electronic switches fitted with conductors having nominal cross-sectional area as for the test of clause 17 (mm ²)		—
18.1	Test with $\cos \varphi$ 0,3 alternating current		P
	- test voltage (1,1 V _n) (V)	264V	—
	- test current (1,25 I _n) ($\cos \varphi$ 0,3) (A)	16,25A	—
	- 200 operations; rate (operations per minute)	15	—
	- electronic switches whose rate of operation is limited by their application (for example, heat and light sensors): electronic switch is set to the shortest cycle time possible and re-activated at the end of each cycle within a time of (2 ± 0,5) s		—
	- samples number	1-3	—
	During the test: no sustained arcing		P
	After the test: specimens show no damage		P
	Test with $\cos \varphi$ 0,3 alternating current for electronics TDS		N/A
	- test voltage (1,1 V _n) (V)		—
	- test current (1,25 I _n) ($\cos \varphi$ 0,3) (A)		—
	- 200 operations; rate (operations per minute)		—
	- electronic TDS whose rate of operation is limited by their application (for example, heat and light sensors): electronic TDS is set to the shortest cycle time possible and re-activated at the end of each cycle within a time of (2 ± 0,5) s		—
	- samples number		—
	During the test: no sustained arcing		N/A
	After the test: specimens show no damage		N/A
18.2	Test with tungsten filament lamps load (switches with I _n ≤ 16 A / V _n ≤ 250 V and switches of pattern numbers 3 and 03 with V _n > 250 V)		P
	- test voltage (V _n) (V)	240	—
	- test current (≥ 1,2 I _n) (A)	15,6	—
	- number of 200 W tungsten filament lamps	19	—
	- 200 operations; rate (operations per minute)	15	—
	- samples number	1-3	—

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Clause	Requirement + Test	Result - Remark	Verdict
	During the test: no sustained arcing nor welding of the contacts		P
	After the test: specimens show no damage		P
18.101	Additional test for electronic switches for the control of motor speed control circuits:		N/A
	Rated current I_n (A) of electronic switch ($\cos\phi$ 0.6) :		—
	Making: 50 cycles with: test current: $9 I_n$ (A); test voltage: V_n (V); $\cos\phi$ 0.8 ± 0.05		N/A
	Breaking: 50 cycles with: test current: $6 I_n$ (A); test voltage: V_n (V); $\cos\phi$ 0.6 ± 0.05		N/A
	During the test: no sustained arcing		N/A
	After the test: specimens show no damage		N/A
18.102	Additional test for electronic switches for the control of the voltage of iron core transformers for extra low-voltage incandescent lamps (for example, halogen):		N/A
	- test voltage (V_n) (V)		—
	- 50 making operations in a test circuit adjusted to a test current 10 times I_n (A) for one half-cycle of the power supply frequency		—
	During the test: no sustained arcing		N/A
	After the test: specimens show no damage		N/A
19	NORMAL OPERATION		P
	Electronic switches withstand the mechanical, electrical and thermal stresses occurring in normal use		P
	Electronic switches whose cycle of operation is limited by their application: rate of operation specified by the manufacturer (operation per minute)		—
	For general purpose electronic switches with included automatic function the number of operations for tests of subclauses 19.101, 19.102 and 19.104 is that specified in the relevant subclause.		—
	If a manufacturer declares a number of operation higher than those indicated in the relevant subclause, the tests shall be made according to declared value.		—
	Electronic RCS withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		N/A
	- model/type reference		—
	- pattern number		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- nominal cross-sectional area per clause 18 (mm ²):		—
	- test voltage (Vn) (V)		—
	- test current (In) (cos φ 0,6) (A)		—
	- number of operations per table 17		—
	- rate (operations per minute)		—
	- samples number		—
	Reduced electric strength per clause 16	See appended table 19.1	N/A
	Temperature rise test per clause 17 after normal operation	See appended table 19.1	N/A
	After the tests the specimens not show:		N/A
	- wear impairing their further use;		N/A
	- discrepancy between the position of the actuating member (if indicated) and that of the moving contacts		N/A
	- deterioration of enclosures, insulating lining or barriers;		N/A
	- seepage of sealing compound		N/A
	- loosening of electrical or mechanical connections;		N/A
	- displacement of moving contacts of switches pattern number 2, 3, 03 or 6/2		N/A
	No sustained arcing in slowly operation (sub-clause 14.3)		N/A
	RCS equipped with an incorporated hand-operated device acting directly on the switching circuit:		N/A
	- 10 % of operations indicated in table 17 made by hand or in an equivalent manner		N/A
	- no sustained arcing in slowly operation (sub-clause 14.3 for a.c. only)		N/A
	- control circuit supplied as specified in clause 18 for the remaining 90 % of the operations		N/A
	During normal operation test: failures allowed within 1 %; no more than three consecutive failures allowed		N/A
	Electronics TDS withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		N/A
	- model/type reference		—
	- pattern number		—
	- nominal cross-sectional area per clause 18 (mm ²):		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- test voltage (Vn) (V)		—
	- test voltage applied to control circuit (rated control voltage) (V)		—
	- test current (In) (cos φ 0,6) (A)		—
	- adjustable TDS: adjusted delay time (s)		—
	- adjusted switching time interval between off and on (s)		—
	- number of operations indicated in table 17 (maximum test duration for adjustable and non-adjustable TDS: 1000 h)	40000 / 20000 / 10000 / 5000	—
	TDS equipped with an incorporated hand-operated device acting directly on the switching circuit:		N/A
	- 10 % of operations indicated in table 17 made by hand or in an equivalent manner		N/A
	- no sustained arcing in slowly operation (sub-clause 14.3 for a.c. only)		N/A
	During normal operation test: failures allowed within 1 %; no more than three consecutive failures allowed		N/A
	- samples number		—
	Reduced electric strength per clause 16	See appended table 19.1	N/A
	Temperature rise test per clause 17 after normal operation	See appended table 19.1	N/A
	After the tests the specimens not show:		N/A
	- wear impairing their further use;		N/A
	- discrepancy between the position of the actuating member (if indicated) and that of the moving contacts		N/A
	- deterioration of enclosures, insulating lining or barriers;		N/A
	- seepage of sealing compound		N/A
	- loosening of electrical or mechanical connections;		N/A
	- displacement of moving contacts of switches pattern number 2, 3, 03 or 6/2		N/A
	No sustained arcing in slowly operation (sub-clause 14.3)		N/A
19.101	Contact mechanisms intended for incandescent lamp circuits and dimmers for step-down converter; number of operations 40.000:		P
	Rate of operation (operation per minute)	15	—
	Rated current (A) / Rated load (W or VA)	13	—
	Rated voltage (V)	240	—

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Clause	Requirement + Test	Result - Remark	Verdict
	During the test: specimens function correctly	Tested with declared load: Resistive load	P
	No sustained arcing in slowly operation (sub-clause 14.3)		P
	Contact mechanism intended for motor speed control circuits; number of operations 40000:		N/A
	Making: test current: 6 I _n (A); test voltage: V _n (V); cosφ 0.65 ± 0.05		N/A
	Breaking: test current I _n (A); test voltage V _n (V); cosφ 0.65 ± 0.05		N/A
	During the test: specimens function correctly		N/A
19.102	Contact mechanisms incorporated in electronic switches, intended for fluorescent lamp circuits or other capacitive loads (for example, electronic ballast) tested according to modified sub-clause 19.2 of part 1, not applicable to dimmers for step-down converter tested according 19.101:		N/A
	- rate of operation (operation per minute)		—
	- test voltage (V _n); test current (I _n) (cos φ 0,9); number of operations with load A		N/A
	- test voltage (V _n); 100 operations with load B		N/A
	During the test: copper wire F not melt, specimens function correctly, no sustained arcing or welding of contacts		N/A
19.103	Semiconductor switching devices and/or electronic regulating units incorporated in electronic switches:		N/A
	Rated current (A) / Rated load (W or VA)		—
	Rated voltage (V)		—
	Test voltage: 1.1 V _n (V)		—
	Switch state changed 10 times by means of the sensing surface or unit, or/and		N/A
	Setting value altered 10 times from min to max and back to min by means of the sensing surface or unit		N/A
	Additional test, where appropriate:		N/A
	Switch state changed 10 times by means of an electronic extension unit, and/or		N/A
	Setting value altered 10 times from min to max and back to min by means of an electronic extension unit		N/A
	During the test: specimens operate correctly		N/A
19.104	Mechanical control units incorporate in electronic switches:		N/A
	Type of mechanical control unit	push button / potentiometer / other requiring manual operation	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A) / Rated load (W or VA)		—
	Rated voltage (V)		—
	Test voltage: 1.1 Vn (V)		—
	Setting altered 10000 times from min to max and back to min by means of its control unit; rate of operation between 10 and 15 operations per minute		—
	During the test: specimens function correctly		N/A
19.105	Electronic switches for which a minimum load or current is specified by the manufacturer:		N/A
	Test current: rated minimum current (A) / rated minimum load (W or VA)		—
	Test voltage: 0,9 Vn (V)		—
	Switch state changed 10 times over the whole range from min to max and back to min, and/or		N/A
	Setting value altered 10 times over the whole range from min to max and back to min		N/A
	Additional test, where appropriate:		N/A
	Switch state changed 10 times over the whole range from min to max and back to min by means of an electronic extension unit, and/or		N/A
	Setting value altered 10 times over the whole range from min to max and back to min by means of an electronic extension unit		N/A
	During the test: electronic switch functions correctly		N/A
	Reduced electric strength per clause 16	See appended table 19	N/A
	Temperature rise test after normal operation per clause 17:		N/A
	- electronic switch state not change		N/A
	- fuses and other protective devices not operate		N/A
	- permissible temperature rises determined in table 102, column concerning clause 17, not exceeded	See appended table 19	N/A
	After the test, electronic switch is in operating condition		N/A
	Sealing compounds, if any, have not flowed		N/A
	Evaluation of compliance after the normal operation: after the tests the specimens shall not show:		N/A
	- wear impairing their further use;		N/A
	- discrepancy between the position of the actuating member (if indicated) and that of the moving contacts;		N/A
	- deterioration of enclosures, insulating lining or barriers;		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- loosening of electrical or mechanical connections;		N/A
	- seepage of sealing compound;		N/A
	- displacement of the moving contacts of electronic switches of pattern number 2		N/A
19.106	Test for electronic RCS energized by impulses (under no-load conditions):		N/A
	RCS operate as intended at a control voltage between 0,9 and 1,1 times the rated value	See appended table 19.106	N/A
	Electronic TDS operate as intended at the control voltage between 0,9 and 1,1 times the rated value		N/A
	Test (under no-load conditions):		N/A
	- rated control voltage (V)		—
	- 20 operations with a control voltage of 0,9 times the rated value (V)		—
	- 20 operations with a control voltage of 1,1 times the rated value (V)		—
	TDS operated as intended (differences in delay time permitted according to 19.102)		N/A
19.107	Electronic TDS have an adequate repetitive accuracy of delay time		N/A
	Test (under no-load conditions):		N/A
	- rated control voltage (applied ten times) (V)		—
	- adjustable TDS: delay time set 2,5 min approximately if possible, otherwise, test made with the delay time specified by the manufacturer (s)		—
	Mean value of delay times measured (s)	- s	—
	Maximum / minimum values of delay time measured (s)	- s / - s	—
	Maximum / minimum values of delay time do not deviate by more than 15 % from the mean value	- % / - %	—
19.108	Electronic TDS revert to the full delay time when the operating means is actuated during the delay time period		N/A
	Adjustable TDS: three specimens initiated at rated control voltage and after 1 min initiated again at rated control voltage:		N/A
	- rated control voltage (V)		—
	- delay time adjusted between 2 min and 3 min (s) (V)		—
	Total delay time resulting for each specimens is between 3 min and 4 min (min)		N/A
	Non-adjustable TDS: three specimens initiated at rated control voltage and after 1 min initiated again at rated control voltage:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	- rated control voltage (V)		—
	- delay time (declared by the manufacturer) (min) ...:		—
	Total delay time is the delay time (declared by the manufacturer) $\pm 5\%$ plus 1 min (min)		N/A
	Non-adjustable TDS when the delay time is less than 1 min: three specimens initiated at rated control voltage and after half the delay time declared by the manufacturer initiated again at rated control voltage:		N/A
	- rated control voltage (V)		—
	- delay time (declared by the manufacturer) (min) ...:		—
	Total delay time is 1,5 times the delay time (declared by the manufacturer) $\pm 5\%$ (min)		N/A

20	MECHANICAL STRENGTH		P
	Switches, boxes and screwed glands have adequate mechanical strength	See Part 1	P
20.1	For all types of switches and for boxes: impact test (9 blows)	See appended table 20.1	N/A
	After the test: no damage, live parts no become accessible		N/A
20.2	Bases of surface-type switches first fixed to a cylinder of rigid steel sheet of radius equal to 4,5 times the distance between fixing holes (mm)		N/A
	Bases then fixed to a flat steel sheet		N/A
	Torque applied to fixing screws (Nm)	0,5 Nm / 1,2 Nm	—
	During and after the test: bases show no damage		N/A
20.3	Screwed glands of switches other than ordinary: torque test		N/A
	- diameter of cylindrical metal test rod (mm)		—
	- type of material	metal / moulded material	—
	- torque for 1 min (table 19) (Nm)		—
	After the test: no damage of glands and enclosure of the specimens		N/A
20.4	Force necessary for covers, cover-plates or actuating members to come off or not to come off (accessibility with the test finger to live parts)		N/A
20.4.1	Verification of the non-removal of covers, cover-plates or actuating member		N/A
	Force applied for 1 min in direction perpendicular to the mounting surface		—
	Covers, cover-plates or actuating members not come off		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 19)		N/A
	Covers, cover-plates or actuating members not come off		N/A
	After the test: no damage		N/A
20.4.2	Verification of the removal of covers, cover-plates or actuating members		N/A
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers, cover-plates or actuating members come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 19)		N/A
	Covers, cover-plates or actuating members come off		N/A
	After the test: no damage		N/A
20.5	Force necessary for covers, cover-plates or actuating members to come off or not to come off (accessibility with the test finger to non-earthed metal parts separated from live parts by creepage distances and clearances according to table 20)		N/A
20.4.1	Verification of the non-removal of covers, cover-plates or actuating members		N/A
	Force applied for 1 min in direction perpendicular to the mounting surface		—
	Covers or cover-plates not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 19)		N/A
	Covers, cover-plates or actuating members not come off		N/A
	After the test: no damage		N/A
20.4.2	Verification of the removal of covers, cover-plates or actuating members		N/A
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers, cover-plates or actuating members come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 19)		N/A
	Covers, cover-plates or actuating members come off		N/A
	After the test: no damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
20.6	Force necessary for covers, cover-plates or actuating members to come off or not to come off (accessibility to insulating parts, earthed metal parts, live parts of SELV ≤ 25 V a.c. or metal parts separated from live parts by creepage distances twice those according to table 20)		N/A
20.4.1	Verification of the non-removal of covers, cover-plates or actuating members		N/A
	Force 10 N applied for 1 min in direction perpendicular to the mounting surface: covers, cover-plates or actuating members not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 19)		N/A
	Covers, cover-plates or actuating members not come off		N/A
	After the test: no damage		N/A
20.4.2	Verification of the removal of covers, cover-plates or actuating members		N/A
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers, cover-plates or actuating members come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 19)		N/A
	Covers, cover-plates or actuating members come off		N/A
	After the test: no damage		N/A
20.7	Test with gauge of figure 20 applied according to figure 21 for verification of the outline of covers, cover-plates or actuating members: distances between face C of gauge and outline of side under test, not decrease	complying / not complying	—
20.8	Test with gauge according to figure 23 applied as shown in figure 24 (1 N): gauge not enter more than 1mm	complying / not complying	—
20.9	Operating members of cord-operated switch have adequate strength		N/A
	Pull test: pull 100 N for 1 min (normal use); pull of 50 N for 1 min (unfavourable direction). After the test:		N/A
	- switch show no damage		N/A
	- operating member not broken and cord-operated switch still operate		N/A
21	RESISTANCE TO HEAT		P
21.1	Switches kept for 1 h in a heating cabinet at a temperature of 100 °C ± 2 °C		P

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Clause	Requirement + Test	Result - Remark	Verdict
	During the test: no change impairing their further use and sealing compound, if any, not flow		P
	After the test: no access to live parts, markings still legible		P
21.2	Parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position: ball-pressure test (1 h, 125 °C)	See appended table 21.2	P
21.3	Parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: ball-pressure test (1 h)	See appended table 21.3	P

22	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
22.1	Connections withstand mechanical stresses		P
	Thread-forming or thread-cutting screws used only if supplied together with the piece in which they are intended to be inserted		N/A
	Screws and nuts which transmit contact pressure: in engagement with a metal thread		N/A
	Threaded part torque test	See appended table 22.1	N/A
22.2	Screws in engagement with a thread of insulating material: correct introduction into the screw hole or nut ensured		N/A
22.3	Contact pressure: not transmitted through insulating material other than ceramic, pure mica or other material no less suitable unless there is sufficient resiliency in metallic parts		P
22.4	Screws and rivets locked against loosening or turning		P
22.5	Current-carrying parts of metal having mechanical strength, electrical conductivity and resistance to corrosion adequate:		P
	- copper;		N/A
	- alloy with at least 58 % copper for parts made from cold-rolled sheet or with at least 50 % copper for other parts;		P
	- stainless steel with at least 13 % chromium and not more than 0,12 % carbon		N/A
	- steel with electroplated coating of zinc (ISO 2081): service condition ISO no. (1/2/3); IP (X0/X4/X5); thickness (µm)		N/A
	- steel with electroplated coating of nickel and chromium (ISO 1456): service condition ISO no. (2/3/4); IP (X0/X4/X5); thickness (µm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- steel with electroplated coating of tin (ISO 2093): service condition ISO no. (2/3/4); IP (X0/X4/X5); thickness (µm)		N/A
	Current-carrying parts subjected to mechanical wear: not of steel with electroplated coating		N/A
	Metals having a great difference of electrochemical potential: not used in contact with each other		N/A
22.6	Contacts subjected to sliding action: of metal resistant to corrosion		N/A
22.7	Thread-forming screws and thread-cutting screws not used for the connection of current-carrying parts		N/A
	Thread-forming screws and thread-cutting screws used to provide earthing continuity: not necessary to disturb the connection and at least two screws are used for each connection		N/A

23	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		P
	Values of items 1, 2, 6 and 7 of table 20 applied to terminals for external wiring and not applied to other live parts which are protected by a directly associated fuse with adequate breaking capacity or other current-limiting means, under the provision that the requirements of 101 are fulfilled		P
	Electronic switches without directly associated fuse or other current-limiting means: comply with table 20		P
23.1	Creepage distances, clearances and distances through sealing compound no less than the values shown in table 20	See appended table 23.1	P
23.2	Insulating compound: not protrude above the edge of the cavity in which it is contained		N/A
23.101	Electronic switches having control circuit suitable for connection to a SELV supply, the switching circuit being supplied with a voltage greater than the SELV: creepage distances and clearances between the control and switching circuits are not less than 5,5 mm (mm)		N/A
	In case of electronic RCS and electronic TDS classified according to 7.103, see the relevant requirements in IEC 60669-2-2 and IEC 60669-2-3 for clearance and creepage between SELV and mains. (mm)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
23.102	Wire enamel at least grade 1 according to IEC 60317: clearances between the wire of the control coil, live parts of different polarity and exposed conductive parts may be reduced to a value equal to two-thirds the clearances required in absence of enamel		N/A
24	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING		P
24.1	Parts of insulating material which might be exposed to thermal stresses due to electric effects and the deterioration of which might impair the safety are not unduly affected by abnormal heat and fire		P
24.1.1	Glow-wire test according to IEC 60695-2-1	See appended table 24.1.1	P
24.2	Parts of insulating material retaining live parts in position of switches with IP>X0: of material resistant to tracking		N/A
	Tracking test with solution A of IEC 60112	See appended table 24.2	N/A
25	RESISTANCE TO RUSTING		P
	Ferrous parts protected against rusting		P
	Test: 10 min in carbontetrachloride, trichloroethane or equivalent degreasing agent, 10 min 10 % solution of ammonium chloride, 10 min in a box with air saturated with moisture and 10 min at 100 °C ± 5 °C:		P
	No signs of rust		P
26	EMC REQUIREMENTS		P
	Electronic switches designed to operate correctly under the conditions of electromagnetic environment in which they are intended to be used		P
26.1	Immunity		P
	Electronic switches designed so that the switch state (ON or OFF) and/or the setting value are protected against interference		P
	Type of load	Incandescent lamp and an adjustable load box	—
	Test current: In (A) / Rated load (W or VA)	13A	—
	Test voltage: Vn (V)	240V~	—
	Variation of less than ± 10 % of the value of the output power (rms) is not considered to be a change of setting		P
	Electronic switches tested, if applicable, in the following states (test parameters referred to table 104):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	a) in the ON state, highest setting		N/A
	b) in the ON state, lowest setting		N/A
	c) in the OFF state		N/A
26.1.1	Voltage dips and short interruptions		P
	Electronic switch tested using the equipment specified in IEC 61000-4-11 in accordance with table 105: sequence: 3 dips/interruptions (duration: 10 cycles at rated frequency) with interval of 10 s minimum between each test event:		P
	Test level: 0 % U_T		P
	Test level: 40 % U_T		P
	Test level: 70 % U_T		P
	After the test: electronic switch is in the original state and the setting is unchanged		P
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		P
26.1.2	Surge immunity test for 1,2/50 μ s wave impulses		P
	Test carried out according to IEC 61000-4-5 applying two positive discharges and two negative discharges at each of the following angles 0°, 90°, 270°, at a repetition rate of (60 \pm 5) s, with an open-circuit test voltage of 1 kV (level 2)		P
	After the test: electronic switch is in the original state and the setting is unchanged		P
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		P
26.1.3	Electrical fast transient/burst test		P
	Test carried out according to IEC 61000-4-4 in accordance with table 106, duration of the test 1 min +5/0 s for each positive and negative polarities: open-circuit output test voltage (\pm 10 %):		P
	Supply terminals/terminations: 1 kV		P
	Control terminals/terminations: 0,5 kV		N/A
	After the test: electronic switch is in the original state and the setting is unchanged		P
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		P
26.1.4	Electrostatic discharge test		P
	Electronic switch not intended to operate incandescent lamp: test carried out with only one load of the loads specified within the manufacturer's instructions		N/A
	Test carried out according to EN 61000-4-2 applying 10 positive and 10 negative discharge:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- contact discharge to the conductive surface and to coupling planes (test voltage: 4 kV)		P
	- air discharge at insulating surfaces (test voltage: 8 kV)		P
	After the test: electronic switch is in the original switch state and the setting is unchanged		P
	Alter in the state and/or setting of electronic switches with a sensing surface intended to be operated by touch: possibility to operate the electronic switch as intended		N/A
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		P
26.1.5	Radiated electromagnetic field test		P
	Test applicable only to electronic switches containing infra-red (IR) receivers, radio frequency receivers, passive infra-red (PIR) devices, devices containing microprocessors or similar		P
	Test carried out according to IEC 61000-4-3 applying a field strength of 3 V/m in the frequency range 80 MHz to 1000 MHz:		P
	During the test: state of electronic switch is not changed		P
	Flickering of lamps or irregular running of motors due to the switching transient caused by frequency changes of the test equipment during the test procedure is neglected.		P
	After the test: electronic switch is in the original state and the setting is unchanged		P
	Time delay switches (TDS): switch is in the original state after the time delay		N/A
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		P
26.1.6	Radio-frequency voltage test		P
	Test applicable only to electronic switches containing infra-red (IR) receivers, radio frequency receivers, passive infra-red (PIR) devices, devices containing microprocessors or similar		P
	Test carried out according to IEC 61000-4-6 applying a conducted radio-frequency voltage of 3 V r.m.s. on supply lines and control lines:		P
	During the test: state of electronic switch is not changed		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Flickering of lamps or irregular running of motors due to the switching transient caused by frequency changes of the test equipment during the test procedure is neglected.		P
	After the test: electronic switch is in the original state and the setting is unchanged		P
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		P
26.1.7	Power-frequency magnetic field test		N/A
	Test applicable only to electronic switches containing devices susceptible to magnetic fields, for example, Hall elements, electrodynamic microphones, etc.		N/A
	Test carried out according to IEC 61000-4-8 applying a magnetic field of 3 A/m, 50 Hz:		N/A
	During the test: state of electronic switch is not changed		N/A
	Flickering of lamps or irregular running of motors due to the switching transient caused by frequency changes of the test equipment during the test procedure is neglected.		N/A
	After the test: electronic switch is in the original state and the setting is unchanged		N/A
	After the test: the general purpose electronic switch with included automatic functions shall operated as intended.		N/A
26.2	Emission		P
26.2.1	Low-frequency emission		P
	Electronic switches designed that they do not cause excessive disturbances in the network		P
	Electronic switch complies with IEC 61000-3-2 and IEC 61000-3-3		P
	Electronic switches with electromechanically operated contact mechanism (for example, a relay) are deemed to meet the requirements of IEC 61000-3-2 without need for testing		P
26.2.2	Radio-frequency emission		P
	Electronic switches designed that they do not cause excessive radio interference		P
	Electronic switch complies with the requirements of CISPR 14		P
	Electronic switch complies with the requirements of CISPR 15 (modified on sub-clauses 8.1.3.1 and 8.1.3.2)		P

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Clause	Requirement + Test	Result - Remark	Verdict

101	ABNORMAL CONDITIONS		P
	Electronic switches do not create hazard under abnormal conditions		P
101.1.1.1	Fault conditions test: temperature rises not exceed the values given in table 102, column concerning clause 101	See appended table 101.1.1.1	P
	Temperature limited by a fuse: additional test carried out in case of doubt	See appended table 101.1.1.1	N/A
101.1.1.2	Electronic switches without incorporated temperature-limiting devices and without incorporated fuses:		P
	Test current: conventional tripping current I_f (A) for 1h of the fuse which, in the installation, will protect the electronic switch	25A SPL-W-TY-UK-RY and SPL-W-TY-PM-UK-RY	—
	Temperature rise measured after steady state or after 4 h	See appended table 101.1.1.2	P
	Electronic switches protected by automatic protective devices (including fuses):		N/A
	Current with which the protecting device releases after 1 h (A)		—
	Test current: 0.95 times the current with which the protecting device releases after 1 h (A)		—
	Temperature rise measured after steady state or after 4 h	See appended table 101.1.1.2	N/A
	Electronic switches protected by incorporated fuses complying with IEC 60127:		N/A
	Rated current of incorporated fuse (A)	SPL-W-TY-UK-RY-Fu and SPL-W-TY-PM-UK-RY-Fu Test refer to adaptor portion	—
	Test current: $2.1 I_n$ (A)		—
	Temperature rise measured after 30 min	See appended table 101.1.1.2	N/A
101.2	Protection against electric shock even during fault conditions		P
	Electronic switches tested according to clause 10 immediately following the test of 101.1		P
101.3	Short circuit test: prospective short circuit of the supply: 1500 A; I^2t : 15000 A ² s:		P
	Test voltage V_n (V)	240V	—
	Type of fuse recommended by the manufacturer		—
	N° of short circuits; N° of specimens used	6; 6	—
	During the test: emission of flames or burning particles not occur		P
	After the test:		P
	- accessible metal parts not live		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- contacts of any incorporated automatic protective device not welded, unless the electronic switch is obviously useless		N/A
101.4	Abnormal operation of the control circuit (only for electronic RCS energized by impulses)		N/A
	Behaviour of electronic RCS during abnormal operation of the control circuit is not dangerous		N/A
	Test made on three additional specimens of electronic RCS meeting with requirements of clauses 15 and 16:		N/A
	Control circuit continuously energized at its rated voltage (V)		—
	Switching circuit loaded for 1 h with rated current (A) at rated voltage (V)	- A; - V	—
	After this test:		N/A
	- RCS still operate		N/A
	- temperature rise of any part of the electronic RCS enclosure and plywood support, which may be touched by the standard test finger, test probe B of IEC 61032, ≤ 75 K (K)		N/A
	- temperature rise of the plywood support which cannot be touched by the standard test finger, test probe B of IEC 61032, ≤ 100 K (K)		N/A
	- electronic RCS did not emit flames, melted material, glowing particles or burning drops of insulating material		N/A
	After cooling down to ambient temperature:		N/A
	Electronic RCS withstand a dielectric test (sub-clause 16.2), test voltage (a.c., for 1 min), between switching and control circuits:		N/A
	- test voltage (V)		—
	During the test: no flashover or breakdown		N/A
	Electronic RCS still meet the requirements of 10.1		N/A
	Electronic RCS coil is then intermittently energized for 1 h using a voltage equal to its rated control voltage, the switching circuit being supplied with rated current at rated voltage:		N/A
	class of insulating material		—
	temperature-rise limit (IEC 60085) (K)		—
	temperature-rise measured (K)		N/A
	Behaviour of electronic TDS during abnormal operation of the control circuit is not dangerous		N/A
	Test made on three additional specimens of electronic TDS meeting with requirements of clauses 15 and 16:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Control circuit continuously energized at its rated voltage (V)		—
	Switching circuit loaded for 6 h with rated current (A) at rated voltage (V)	- A; - V	—
	Adjustable electronic TDS: adjusted to the shortest delay time (s)		—
	After this test:		N/A
	- electronic TDS still operate		N/A
	- temperature rise of any part of the electronic TDS enclosure and plywood support, which may be touched by the standard test finger, test probe B of IEC 61032, ≤ 75 K (K)		N/A
	- temperature rise of the plywood support which cannot be touched by the standard test finger, test probe B of IEC 61032, ≤ 100 K (K)		N/A
	- electronic TDS did not emit flames, melted material, glowing particles or burning drops of insulating material		N/A
	After cooling down to ambient temperature:		N/A
	Electronic TDS withstand a dielectric test (sub-clause 16.2), test voltage (a.c., for 1 min), between switching and control circuits:		N/A
	- test voltage (V)		—
	During the test: no flashover or breakdown		N/A
	Electronic TDS still meet the requirements of 10.1		N/A

102	COMPONENTS		P
	Components which, if they fail, may impair the safety of the electronic switch comply with the relevant IEC standards, as far as applicable		P
	Components marked with their operating characteristics used in accordance with these markings		P
102.1	Fuses comply with:		P
	- IEC 60127	SPL-W-TY-UK-RY-Fu and SPL-W-TY-PM-UK-RY-Fu	P
	- other relevant IEC publications		N/A
	Rated breaking capacity (A): 1500 A or 35 A	1500A	P
102.2	Capacitors: the short-circuiting or disconnection of which cause an infringement of the requirements under fault conditions with regard to shock or fire hazard:		N/A
	Trade mark; article of capacitor		—
	Capacitor complies with IEC 60384-14		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Capacitor passing the damp heat steady-state test specified in 4.12 of IEC 60384-14 with a duration of not less than 21 days are considered acceptable		N/A
	Capacitor in accordance with table 107: approved type of capacitor required by table 107 according to the application in the electronic switch; observed :		N/A
	Capacitor marked with:		N/A
	- rated voltage (V)		N/A
	- rated capacitance (μF)		N/A
	- reference temperature (°C)		N/A
	Capacitors: the short-circuiting of which cause a current = 0,5 A through the terminals of the capacitor:		N/A
	Trade mark; article of capacitor		—
	Capacitor complies with IEC 60384-14		N/A
	Capacitor passing the damp heat steady-state test specified in 4.12 of IEC 60384-14 with a duration of not less than 21 days are considered acceptable		N/A
	Capacitor in accordance with table 107: approved type of capacitor required by table 107 according to the application in the electronic switch; observed .. :		N/A
	Capacitor marked with:		N/A
	- rated voltage (V)		N/A
	- rated capacitance (μF)		N/A
	- reference temperature (°C)		N/A
	Capacitors: for suppression of electromagnetic interference:		N/A
	Trade mark; article of capacitor		—
	Capacitor complies with IEC 60384-14		N/A
	Capacitor passing the damp heat steady-state test specified in 4.12 of IEC 60384-14 with a duration of not less than 21 days are considered acceptable		N/A
	Capacitor in accordance with table 107: approved type of capacitor required by table 107 according to the application in the electronic switch; observed :		N/A
	Capacitor marked with:		N/A
	- rated voltage (V)		N/A
	- rated capacitance (μF)		N/A
	- reference temperature (°C)		N/A
102.3	Resistors: the short-circuiting or interruption of which cause an infringement of the requirements with regard to the protection against fire and electric shock in case of a defect:		N/A
	Manufacturer / characteristics of resistor	/ Ω	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- constant value under overload conditions		N/A
	reference temperature of the resistor according to clause 17 (°C)		—
	- comply with sub-clause 14.1 of IEC 60065		N/A
102.4	Automatic protective devices (other than fuses)		N/A
	Automatic protective devices comply with IEC 60730 as far as applicable		N/A
102.4.1	Automatic protective devices which switch off the current (cut-outs):		N/A
	Adequate making and breaking capacity		N/A
	Reference temperature above 55 °C: specimens tested at reference temperature according to clause 17 (°C)		N/A
102.4.1.1	Non-self-resetting cut-outs in the load circuit of the electronic switch:		N/A
	Test voltage: 1.1 Vn (V)		—
	Cut-outs in electronic switches for incandescent or fluorescent lamps:		N/A
	10 cycles; test current: 2.1 In (A) of the protecting fuse (IEC 60127) or the conventional fusing current (other fuses)		—
	During the test: no sustained arcing		N/A
	After the test: specimens show no damage		N/A
	Electric strength between open contacts: test voltage 500 V a.c. for 1 min		N/A
	Cut-outs in electronic switches for speed control circuits:		N/A
	In (A) of electronic switch (cosφ 0.6)		—
	Making: 10 operations with: test current: 9 In (A); cosφ 0.8 ± 0.05		—
	Breaking: 10 operations with: test current: 6 In (A); cosφ 0.6 ± 0.05		—
	During the test: no sustained arcing		N/A
	After the test: specimens show no damage		N/A
	Electric strength between open contacts: test voltage (V): 1200 V a.c. (Vn ≤ 130 V) or 2000 V (Vn > 130 V) for 1 min:		N/A
102.4.1.2	Self-resetting cut-outs in the load circuit of the electronic switch:		N/A
	Test voltage: 1.1 Vn (V)		—
	Cut-outs in electronic switches for incandescent lamps:		N/A
	200 cycles; test current: 2.1 In (A) of the protecting fuse (IEC 60127) or conventional fusing current (other fuses)		—
	During the test: no sustained arcing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: specimens show no damage		N/A
	Electric strength between open contacts: test voltage 500 V a.c. for 1 min		N/A
102.4.2	Automatic protective devices which only decrease current to the electronic switch (10 cycles):		N/A
	Test current per clause 17 for 4 h (A)		—
	Test current increased to 2.1 I _n (A) of the protecting fuse (IEC 60127) or the conventional fusing current (other fuses) for 30 min		—
	After the test: specimens function correctly		N/A
	Temperature rise test per clause 17:		N/A
	- electronic switch state not change		N/A
	- fuses and other protective devices not operate		N/A
	- permissible temperature rises determined in table 102, column concerning clause 17, not exceeded	See appended table 102.4.2	N/A
	After the test, electronic switch is in operating condition		N/A
	Sealing compounds, if any, have not flowed		N/A
102.5	Transformer		N/A
	Transformers intended for SELV circuits shall be of the safety isolating type and shall comply with the relevant requirements of IEC 61558-2-6.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

12.2.5	TABLE: test with apparatus shown in figure 10 (screw terminals)			N/A
	rated current (A)			—
	type of conductors			—
	smallest/largest cross-sectional area per table 2 (mm ²)			—
	number of conductors			—
	nominal diameter of thread (mm); torque per table 3 (Nm)			—
Cross-sectional area (mm ²)	Diameter of bushing hole per table 4 (mm)	Height H per table 4 (mm)	Mass (kg)	Remarks
				--
				--
supplementary information:				

12.2.6	TABLE: pull test (screw terminals)			N/A
	rated current (A)			—
	smallest/largest cross-sectional area per table 2 (mm ²)			—
	nominal diameter of thread (mm); torque 2/3 per table 3 (Nm)			—
Cross-sectional area (mm ²)	Number of conductors	Type of conductors (rigid solid / rigid stranded)	Pull per table 5 applied for 1 min (N)	Remarks
supplementary information:				

12.2.7	TABLE: tightening test (screw terminals)			N/A
	rated current (A)			—
	nominal diameter of thread (mm); torque 2/3 per table 3 (Nm)			—
Largest cross-sectional area per table 2 (mm ²)	Permissible number of conductors	Type of conductors (rigid solid / rigid stranded)	Number of wires and nominal diameter of wires per table 6	Remarks

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Clause	Requirement + Test	Result - Remark	Verdict
supplementary information:			

12.3.10	TABLE: mechanical stresses occurring in normal use			N/A	
	rated current (A)			—	
	largest/smallest cross-sectional area per table 7 (mm ²)			—	
	Number of connection (after that conductor subjected to a pull of 30 N for 1 min) / disconnection	Type of conductor (solid / rigid stranded / flexible)	Cross-sectional area (mm ²)	Remarks	
				--	
				--	
	TABLE: test with apparatus shown in figure 10			N/A	
	rated current (A)			—	
	type of conductors			—	
	smallest/largest cross-sectional area per table 7 (mm ²)			—	
	number of conductors			—	
	Cross-sectional area (mm ²)	Diameter of bushing hole per table 4 (mm)	Height H per table 4 (mm)	Mass (kg)	Remarks
					--
					--
supplementary information:					

12.3.11	TABLE: electrical and thermal stresses occurring in normal use			N/A
Test a)	Test carried out for 1 h connecting rigid solid conductors:			N/A
	test current per table 8 (A)			—
	nominal cross-sectional area (mm ²)			—
	Screwless terminal number	Voltage drop (mV)	Required voltage drop	

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Clause	Requirement + Test				Result - Remark		Verdict
Test b)	Temperature cycles test) carried out on terminals subjected to Test a):					N/A	
	test current per table 8 (A)						—
	nominal cross-sectional area (mm ²)						—
	allowed voltage drop (mV)				≤ 22,5 mV or 2 times 24 th cycle value (mV)		—
Screwless terminal number	1	2	3	4	5	Remarks	
voltage drop after 24 th cycle						--	
voltage drop after 48 th cycle						--	
voltage drop after 72 th cycle						--	
voltage drop after 96 th cycle						--	
voltage drop after 120 th cycle						--	
voltage drop after 144 th cycle						--	
voltage drop after 168 th cycle						--	
voltage drop after 192 th cycle						--	
12.3.10	TABLE: mechanical stresses occurring in normal use					N/A	
	rated current (A)						—
	largest/smallest cross-sectional area per table 7 (mm ²)						—
Number of connection (after that conductor subjected to a pull of 30 N for 1 min) / disconnection	Type of conductor (solid / rigid stranded / flexible)		Cross-sectional area (mm ²)		Remarks		
					--		
					--		
	TABLE: test with apparatus shown in figure 10					N/A	
	rated current (A)						—
	type of conductors						—
	smallest/largest cross-sectional area per table 7 (mm ²)						—
	number of conductors						—
Cross-sectional area (mm ²)	Diameter of bushing hole per table 4 (mm)	Height H per table 4 (mm)		Mass (kg)		Remarks	
						--	

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Clause	Requirement + Test	Result - Remark	Verdict

			--
supplementary information:			

12.3.12	TABLE: deflection test (principle of test apparatus shown in figure 11a)						N/A
	Test carried out for 1 h connecting rigid solid conductors:						N/A
	test current (A) (equal rated current)						—
	required voltage drop (mV)						—
Type of conductor	Smallest			Largest			Remarks
cross-sectional area per table 9 (mm ²)							--
force per table 10 (N)							--
screwless terminal number	1	2	3	1	2	3	--
starting point (X = deflection original point)							--
voltage drop 1 st deflection (mV)							--
voltage drop 2 nd deflection (mV)							--
voltage drop 3 rd deflection (mV)							--
voltage drop 4 th deflection (mV)							--
voltage drop 5 th deflection (mV)							--
voltage drop 6 th deflection (mV)							--
voltage drop 7 th deflection (mV)							--
voltage drop 8 th deflection (mV)							--
voltage drop 9 th deflection (mV)							--
voltage drop 10 th deflection (mV)							--
voltage drop 11 th deflection (mV)							--
voltage drop 12 th deflection (mV)							--
supplementary information:							

16.1	TABLE: insulation resistance			P
item per table 14	test voltage applied between:	measured (MΩ)	required (MΩ)	
1	Between all poles connected together and the body, with the switch in the "on" position	>10	5	

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Clause	Requirement + Test	Result - Remark	Verdict
2	Between the terminals which are electrically connected together when the switch is in the "on" position, the switch being in the "off" position: micro-gap construction	>10	2
supplementary information:			

16.2	TABLE: electric strength			P
	rated voltage (V)	220-240V		—
item per table 14	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)	
1	Between all poles connected together and the body, with the switch in the "on" position	2000	No	
2	Between the terminals which are electrically connected together when the switch is in the "on" position, the switch being in the "off" position: micro-gap construction	750	No	
supplementary information:				

17	TABLE: temperature rise measurements			P
	cross-sectional area of conductor not less than 1,5 mm ² (mm ²) (table 15)	N/A		—
	terminal screws: torque (Nm) (2/3 table 3 or appropriate figures 1, 2, 3, 4)	N/A		—
	type of load	Resistive load		—
	rated current (A) / rated load (W or VA)	13A		—
	rated voltage (V)	220-240V		—
	test voltage between 0,9 and 1,1 V _n (V), whichever is the more unfavourable	264V		—
parts of the electronic switch		max. measured temperature rise (K)	permissible temperature rise (K)	
Enclosure		17,1	70	
button		14,6	60	
Internal wire		33,6	80	
PCB Lin		36,5	-	
PCB Lout		37,2	-	
PCB N		29,5	-	
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

19	TABLE: reduced electric strength after normal operation		P
item per table 20	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
1	Between all poles connected together and the body, with the switch in the "on" position	1500	No
2	Between each pole in turn and all other poles connected to the body, with the switch in the "on" position	1500	No
3	Between the terminals which are electrically connected together when the switch is in the "on" position, the switch being in the "off" position: micro-gap construction	500	No
	TABLE: temperature rise measurements after normal operation		P
	cross-sectional area of conductor not less than 1,5 mm ² (mm ²) (table 15)	N/A	—
	terminal screws: torque (Nm) (2/3 table 3 or appropriate figures 1, 2, 3, 4)	N/A	—
	type of load	Resistive load	—
	rated current (A) / rated load (W or VA)	13A	—
	rated voltage (V)	220-240V	—
	test voltage between 0,9 and 1,1 V _n (V), whichever is the more unfavourable	264V	—
	parts of the electronic switch	max. measured temperature rise (K)	permissible temperature rise (K)
	Enclosure	16,3	70
	Button	13,9	60
	Internal wire	35,9	80
	PCB Lin	42,3	-
	PCB Lout	48,6	-
	PCB N	31,22	-
	supplementary information:		

19.106	TABLE: Test for RCS energized by impulses (under no-load conditions):	N/A
	impulse duration declared by the manufacturer	—

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Clause	Requirement + Test	Result - Remark	Verdict

n. specimen	rated control voltage (V)	control voltage of 0,9 times the rated value (V)	20 operations: RCS operates as intended (Yes/No)	control voltage of 1,1 times the rated value (V)	20 operations: RCS operates as intended (Yes/No)

supplementary information:

20.1	TABLE: impact test			N/A
part of enclosure tested per table 18 (A, B, C, D)	blows per part	height of fall (mm)	comments	

supplementary information:

21.2	TABLE: ball pressure test of thermoplastic materials			P
	allowed impression diameter (mm): ≤ 2 mm			—
part under test	material designation / manufacturer	test temperature (°C)	impression diameter (mm)	
PCB	--	125	Max. 0,8	
Enclosure	PC	125	Max. 1,522	

supplementary information:

21.3	TABLE: ball pressure test of thermoplastic materials			N/A
	allowed impression diameter (mm): ≤ 2 mm			—
part under test	material designation / manufacturer	test temperature (°C) ⁽¹⁾	impression diameter (mm)	
-				

supplementary information:

22.1	TABLE: threaded part torque test					N/A
threaded part identification	diameter of thread (mm)	column number (I, II, or III)	applied torque (Nm)	times (5/10)	no damage	

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Clause	Requirement + Test	Result - Remark	Verdict
supplementary information:			

23.1	TABLE: creepage distances, clearances and distances through sealing compound							P
	rated voltage (V)	220-240V						—
item per table 20	creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)	required dtsc (mm)	dtsc (mm)	
1, 6	Between live parts which are separated when the contacts are open	≥ 3	3,2	≥ 3	3,2	≥		
2, 7	Between live parts of different polarity	≥ 3	4,5	≥ 3	4,5	≥		
3, 8	Between live parts and accessible surface of parts of insulating material	≥ 3	> 4,0	≥ 3	> 4,0	≥		
supplementary information:								

24.1.1	TABLE: glow-wire test			P
part under test	material designation / manufacturer	test temperature (°C)	remarks	
PCB	--	850	No flame	
Enclosure	PC	750 (according to requirements of adaptor)	No flame	
supplementary information:				

24.2	TABLE: resistance to tracking			N/A
	number of drops	50		—
part under test	material designation / manufacturer	test voltage (V)	flashover / breakdown (Yes/No)	
		175		
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict
101.1.1.1	TABLE: fault conditions test		P
	cross-sectional area of conductor not less than 1,5 mm ² (mm ²) (table 15)	N/A	—
	terminal screws: torque (Nm) (2/3 table 3 or appropriate figures 1, 2, 3, 4)	N/A	—
	type of load	Resistive load	—
	rated current (A) / rated load (W or VA)	13A	—
	rated voltage (V)	220-240V	—
	test voltage between 0,9 and 1,1 V _n (V), whichever is the more unfavourable	264V	—
	fault conditions simulated	remarks	verdict
	Short-circuiting of E1	Fusing resistor open, No hazard was observed.	P
	Open circuiting of E1	Normal output. No hazard was observed.	P
	Short-circuiting of U1	No output. No hazard was observed.	P
	TABLE: temperature rise measurements		P
	temperature measured after (min)	After steady state is reached	—
	parts of the electronic switch	max. measured temperature rise (K)	permissible temperature rise (K)
	Enclosure	17,4	75
	button	12,1	75
	Internal wire	31,7	110
	PCB Lin	39,4	-
	PCB Lout	40,1	-
	PCB N	31,2	-
	TABLE: additional temperature rise measurements in case of temperature limited by a fuse		N/A
	current under the relevant fault conditions measured with the fuse short-circuited (A)		—
	type of fuse as specified by IEC 60127		—
	test duration corresponding to the maximum fusing time corresponding to the current measured (min) ..		—

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Clause	Requirement + Test	Result - Remark	Verdict

parts of the electronic switch		max. measured temperature rise (K)	permissible temperature rise (K)
supplementary information:			

101.1.1.2	TABLE: temperature rise measurements during overload tests		P
	cross-sectional area of conductor not less than 1,5 mm ² (mm ²) (table 15)	N/A	—
	terminal screws: torque (Nm) (2/3 table 3 or appropriate figures 1, 2, 3, 4)	N/A	—
	rated voltage (V)	220-240V	—
	test voltage between 0,9 and 1,1 V _n (V), whichever is the more unfavourable	264V	—
parts of the electronic switch		max. measured temperature rise (K)	permissible temperature rise (K)
Enclosure		39,9	75
Button		36,7	75
Internal wire		78,4	110
PCB Lin		84,2	-
PCB Lout		88,3	-
PCB N		70,1	-
supplementary information: test current: 15A			

102	TABLE: components					P
object/part No.	manufacturer/ trademark	type/model	technical data	compliance to standard	mark(s) of conformity ¹⁾	
Refer to General information of part 1						

102.4.2	TABLE: temperature rise measurements after test for automatic protective devices which only decrease current to the electronic switch		N/A
	cross-sectional area of conductor not less than 1,5 mm ² (mm ²) (table 15)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	terminal screws: torque (Nm) (2/3 table 3 or appropriate figures 1, 2, 3, 4)		—
	type of load		—
	rated current (A) / rated load (W or VA)		—
	rated voltage (V)		—
	test voltage between 0,9 and 1,1 V _n (V), whichever is the more unfavourable		—
	parts of the electronic switch	max. measured temperature rise (K)	permissible temperature rise (K)
supplementary information:			

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 1:

ATTACHMENT TO TEST REPORT IEC 60669-2-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Switches for household and similar fixed-electrical installations Part 2-1: Particular requirements - Electronic switches	
Differences according	EN 60669-2-1:2004 + A1: 2009 + A12:2010) (used in conjunction with EN 60669-1:1999 + A1:2002 + A2:2008)
Attachment Form No.	EU_GD_IEC60669_2_1F (to be used with Test Report Form No. IEC60669_2_1F)
Attachment Form Originator	IMQ S.p.A.
Master Attachment Form	2010-12
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	CENELEC COMMON MODIFICATIONS (EN)	P
8	MARKING	N/A
8.1 (Annex B)	Paragraph added at the end of this subclause:	N/A
	Flexible cable outlet switches: information of minimum and maximum sizes for which the anchorage is provided put on the switch and/or the packaging unit	N/A
8.3	First sentence of last paragraph before note 2 replaced by:	N/A
	Marking is clearly visible with normal or corrected vision, without additional magnification, marked either on the front of the switch or on the inner part of its associated enclosure, or on the main part of the switch so that it is easy legible during installation	N/A
8.6	First sentence of the first paragraph replaced by:	N/A
	Switches of pattern numbers 2, 3, 03 and switches with $V_n > 250$ V and $I_n > 16$ A if marked to indicate the switch position: direction of movement of the actuating member to its different positions or the actual switch position, clearly indicated	N/A
8.8	Note 2 changed into a requirement and its first sentence replaced by:	N/A
	Special precautions necessary to take when installing the switch: details of these and clear information given in an instruction sheet which accompanies the switch	N/A
9	CHECKING OF DIMENSIONS	N/A
	Paragraph added after the first paragraph:	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Type of boxes in which switches are to be mounted: specified in the manufacturer's catalogue		N/A
10	PROTECTION AGAINST ELECTRIC SHOCK		P
10.1	Additional requirement (IEC 60669-1/A1) concerning switches designed to be fitted with pilot lights supplied at voltage other than ELV is deleted		N/A
10.3	First two line replaced by the following:		P
	Accessible parts of switches are made of insulating material		P
	"cover or cover plates" replaced by "cover, cover plates and other parts of the enclosure"		P
10.3.1	Replaced by:		N/A
	Metal covers, cover plates or other parts of enclosure protected by supplementary insulation made by insulating linings or insulating barriers		N/A
	Insulating linings or insulating barriers:		N/A
	- cannot be removed without being permanently damaged, or designed that		N/A
	- cannot be replaced in an incorrect position; if they are omitted, accessories are rendered inoperable or manifestly incomplete; there is no risk of accidental contact between live parts and metal covers or cover plates; precautions are taken to prevent creepage distances or clearances becoming less than the values specified in clause 23		N/A
10.3.2	Replaced by:		N/A
	Earthing of metal covers, cover plates or other parts of enclosure: connection of low resistance		N/A
11	PROVISION FOR EARTHING		N/A
11.1	Notes 1 and 2 changed into requirements:		N/A
	Requirement did not apply to the metal cover plates mentioned in 10.3.1		N/A
	Small screws and the like, isolated from live parts, for fixing bases, covers or cover plates, were not considered as accessible parts which can become live in the event of an insulation fault		N/A
11.2	Second paragraph replaced by:		N/A
	Earthing terminals have a capacity not less than that of the corresponding terminals for the supply conductors		N/A
12	TERMINALS		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
12.2.4	Second paragraph replaced by:		N/A
	Terminals the body of which is made of materials as detailed in 22.5 considered as complying with the requirement		N/A
12.2.5	Paragraph before note 4 deleted		N/A
12.2.6	“in case where they exist in the relevant IEC standard” in the last paragraph replaced by “if any, according to HD 21.3		N/A
12.3.1	Present note numbered as note 1 and added new note 2:		N/A
	Tests of 12.3.12 carried out using rigid solid conductors only		N/A
13	CONSTRUCTIONAL REQUIREMENTS		N/A
13.16 (Annex B)	First paragraph replaced by:		N/A
	Flexible cable outlet switches: flexible cable (60245 IEC 66, 60227 IEC 52 or 60227 IEC 53, or as specified by the manufacturer) enter the switch through a suitable hole, groove or gland		N/A
	Last but one paragraph replaced:		N/A
	An a.c. voltage of 2000 V applied for 1 min between the conductors and any metal clamp of the cord anchorage		N/A
	During the test: insulation of flexible cable not damaged (no breakdown or flashover)		N/A
	Subclause added at the end:		N/A
	Flexible cable outlet switches:		N/A
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A
	- cord anchorage, or at least part of it, integral with or permanently fixed to one of the component parts of the switch		N/A
	- makeshift methods not used		N/A
	- cord anchorages suitable for different type of flexible cables		N/A
	Rewirable switches with earthing connection are designed with ample space for slack of the earthing conductor		N/A
19	NORMAL OPERATION		N/A
19.102	Paragraph added after the first paragraph:		N/A
	This is not applicable to dimmers for step-down converters as these accessories are tested according to 19.101		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		N/A
22.1	Second sentence of the second paragraph deleted		N/A
23	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		N/A
23.3	Subclause added:		N/A
	Ordinary surface-type switches do not have bare current-carrying strips at the back		N/A
Table 20	Addition of the following NOTE:		N/A
Note 3	Items 101 and 102 apply to electronic RCS and TDS only		N/A
24	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING		N/A
24.1.1	Item b) replaced by:		N/A
	Parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though they are in contact with them, and parts of insulating materials necessary to hold in position the earthing terminal in an enclosure, by the test made at a temperature of 650 °C		N/A
26	EMC REQUIREMENTS		P
	Electronic switches designed to operate correctly under the conditions of electromagnetic environment in which they are intended to be used		P
26.1	Immunity		P
	Electronic switches designed so that the switch state (ON or OFF) and/or the setting value are protected against interference		P
	Type of load	Incandescent lamp and an adjustable load box	—
	Test current: I_n (A) / Rated load (W or VA)	13A	—
	Test voltage: V_n (V)	240V~	—
	Electronic switches tested, if applicable, in the following states (test parameters referred to table 104):		N/A
	a) in the ON state		N/A
	For electronic switches where the setting can alter (e.g. dimming devices) the electronic switch is set at a firing angle of approx. 90° which results in an output power P_o (r.m.s.).		N/A
	A variation of P_o less than $\pm 10\%$ is not considered to be a change of the setting.		N/A
	b) in the OFF state		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	For the tests with operation, the electronic switch shall be switched ON/OFF with an operation rate of 1 operation/second or less, or the setting value shall be changed e.g. from minimum to maximum		N/A
	For electronic switches whose cycle of operation is limited by their application (for example, passive infrared, time delay electronic switches, etc.), the rate of operation during the tests shall be specified by the manufacturer.		N/A
26.1.1	Voltage dips and short interruptions		P
	Electronic switch tested using the equipment specified in IEC 61000-4-11 in accordance with table 105: sequence: 3 dips/interruptions (duration: 10 cycles at rated frequency) with interval of 10 s minimum between each test event:		P
	Test level: 0 % U _T		P
	Test level: 40 % U _T		P
	Test level: 70 % U _T		P
	The test shall be done on the power supply lines of the electronic switch.		P
	During the test, the electronic switch is not operated.		P
	During the test, the state and setting of the electronic switch may alter, flickering is neglected		P
	After the test, the electronic switch shall be in the original state and setting and shall operate as intended		P
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended		P
26.1.2	Surge immunity test for 1,2/50 μs wave impulses		P
	Test carried out according to IEC 61000-4-5 applying two positive discharges and two negative discharges at each of the following angles 0°, 90°, 270°, at a repetition rate of (60 ± 5) s, with an open-circuit test voltage according to Table 106		P
	During the test, the electronic switch is not operated.		P
	During the test, the state and setting of the electronic switch may alter, flickering is neglected		P
	After the test, the electronic switch shall be in the original state and setting and shall operate as intended		P
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended		P
26.1.3	Electrical fast transient/burst test		P

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test carried out according to IEC 61000-4-4 in accordance with table 107		P
	During the test, the electronic switch is not operated.		P
	During the test, the state and setting of the electronic switch may alter, flickering caused by the electronic switch is allowed		P
	After the test, the electronic switch shall be in the original state and setting and shall operate as intended		P
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended.		P
26.1.4	Electrostatic discharge test		P
	Electronic switch not intended to operate incandescent lamp: test carried out with only one load of the loads specified within the manufacturer's instructions		N/A
	Test carried out according to EN 61000-4-2 applying 10 positive and 10 negative discharge:		P
	- contact discharge to the conductive surface and to coupling planes (test voltage: 4 kV)		P
	- air discharge at insulating surfaces (test voltage: 8 kV)		P
	During the test, the electronic switch is not operated.		P
	During the test, the state and setting of the electronic switch may alter, flickering is neglected		P
	After the test, the electronic switch shall be in the original state and setting and shall operate as intended.		P
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended		P
26.1.5	Radiated electromagnetic field test		P
	Test applicable only to electronic switches containing infra-red (IR) receivers, radio frequency receivers, passive infra-red (PIR) devices, devices containing microprocessors or similar		N/A
	Test is carried out according to EN 61000-4-3 by applying a field strength of 3 V/m in the frequency range 80 MHz to 1 000 MHz and 1 400 Mhz to 2000 MHz with the exception of the exclusion band as defined in the relevant product standard for transmitters, receivers and duplex transceivers		P

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	During the test, the electronic switch is operated, if it contains automatic functions or can be remotely controlled		P
	During and after the test, the electronic switch shall operate as intended, flickering is not allowed		P
	Flickering of lamps or irregular running of motors due to switching transients caused by frequency changes of the test equipment during the test procedure is neglected		P
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended		P
26.1.6	Radio-frequency voltage test		P
	Test applicable only to electronic switches containing infra-red (IR) receivers, radio frequency receivers, passive infra-red (PIR) devices, devices containing microprocessors or similar		P
	Test carried out according to IEC 61000-4-6 applying a conducted radio-frequency voltage of 3 V r.m.s. on supply lines and control lines:		P
	During the test, the electronic switch is operated, if it contains automatic functions or can be remotely controlled.		P
	During and after the test, the electronic switch shall operate as intended, flickering is not allowed		P
	Flickering of lamps or irregular running of motors due to switching transients caused by frequency changes of the test equipment during the test procedure is neglected		P
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended		P
26.1.7	Power-frequency magnetic field test		N/A
	Test applicable only to electronic switches containing devices susceptible to magnetic fields, for example, Hall elements, electro dynamic microphones, etc.		N/A
	Test carried out according to IEC 61000-4-8 applying a magnetic field of 3 A/m, 50 Hz:		N/A
	During the test, the electronic switch is operated, if it contains automatic functions or can be remotely controlled..		N/A
	During and after the test, the electronic switch shall operate as intended, flickering is not allowed.		N/A
	Flickering of lamps or irregular running of motors due to switching transients caused by frequency changes of the test equipment during the test procedure is neglected		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	After the test, the general purpose electronic switch with included automatic functions shall operate as intended		N/A
26.2	Emission		P
26.2.1	Low-frequency emission		P
	Electronic switches designed that they do not cause excessive disturbances in the network		P
	Electronic switch complies with IEC 61000-3-2 and IEC 61000-3-3		P
	Electronic switches with electromechanically operated contact mechanism (for example, a relay) are deemed to meet the requirements of IEC 61000-3-2 without need for testing. Therefore only the mains supply terminal/terminations of those products shall be tested		N/A
26.2.2	Radio-frequency emission		P
	Electronic switches designed that they do not cause excessive radio interference		P
	a) Electronic switch complies with the requirements of EN 55014: 2006 (sub clause 8.1.4.1) at the mains terminals		P
	b) Electronic switch complies with the requirements of EN 55015: 2006 (sub clause 8.1.4.2) at the load and/or control terminals		N/A
101	ABNORMAL CONDITIONS		N/A
101.1.1.2	Addition of the following NOTE:		N/A
	The tripping current of the protective devices (e.g. fuses, automatic protective devices, etc.) to be used for the verification of electronic switches without incorporated temperature-limiting devices and without incorporated fuses is in accordance with the rated current of the protective device, specified by the manufacturer, intended to protect the electronic switch		N/A
	Information regarding the protective device which is intended to protect the electronic switch are specified by the manufacturers in the instruction sheets provided with the products		N/A
102	COMPONENTS		N/A
102.4.1.2	Note replaced by the following test requirement:		N/A
	For cut-outs in electronic switches for fluorescent lamps, the tests are carried out in the same way as for electronic switches for incandescent lamps		N/A
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.7	BELGIUM, CZECH REPUBLIC, FINLAND, GERMANY, NETHERLANDS, NORWAY, SWEDEN: design B not used due to installation practice		N/A
8.1	DENMARK: symbol for earth for any space provided for an earthing terminal		N/A
	UNITED KINGDOM: marking of type reference not used		N/A
8.3	UNITED KINGDOM: marking of type reference not used		N/A
10.2	DENMARK, NORWAY: accessories requiring earth connection cannot normally be used due to the lack of an earthing conductor in many existing old buildings		N/A
10.3	DENMARK: enclosures, including covers and cover plates, may be made of metal:		N/A
	- for ordinary switches which comply with 10.3.1		N/A
	- for switches with IP>X0 which fulfil with 10.3.1 or 10.3.2		N/A
10.3.2	DENMARK, NORWAY: accessories requiring earth connection cannot normally be used due to the lack of an earthing conductor in many existing old buildings		N/A
10.5	DENMARK, NORWAY: accessories requiring earth connection cannot normally be used due to the lack of an earthing conductor in many existing old buildings		N/A
12.2.5	DENMARK, FINLAND, NORWAY, SWEDEN: - additional test with rigid solid conductors (if exist in relevant IEC standard), if the first test has been made with rigid stranded conductors		N/A
	- in the case rigid stranded conductors do not exist, the test may be made with rigid solid conductors only		N/A
12.2.6	DENMARK, FINLAND, NORWAY, SWEDEN: additional test with one rigid solid conductor and one rigid stranded conductor with same cross-sectional areas connected at same time is required for terminals allowing the connection of two conductors		N/A
13.15.2	DENMARK, FINLAND, NORWAY, SWEDEN, SWITZERLAND: sub-clause mandatory		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
13.103	DENMARK, FINLAND, NORWAY, SWEDEN, SWITZERLAND, UNITED KINGDOM: Flexible cables complying with electrical strength test only are not allowed for external use		N/A
101.1.1.2	BELGIUM, FRANCE, SPAIN, SWITZERLAND: Electronic switches designed without an associated incorporated protection are loaded for one hour with the conventional tripping current of the associated protection of the lighting circuit (10 A for fuses and 16 A for CB's)		N/A
102.1	UNITED KINGDOM: Fuses according to BS 646 and BS 1362 are deemed to satisfy this requirement		N/A
ZC	ANNEX ZC, A-DEVIATIONS		N/A
11.2	BELGIUM: earthing terminals have a capacity not less than that of corresponding terminals for the supply conductors except that any additional external earthing terminal shall be of a size suitable for conductors of at least 4 mm ²		N/A
13.103	DENMARK (Stærkstømbekendtgørelsen- Elektriske Installationer 2001, § 521.7.4)		N/A
	The insulation of external flexible cable complies with or is at least electrically and mechanically equivalent to that of flexible cables according to HD 21 or HD 22		N/A
13.103	FINLAND (Electrical Safety Act 410/1996, Degree of Ministry of Trade and Industry No. 1193/99, paragraph 4 Publication S10-2002 of the Finnish Safety Technology Authority, Finnish wiring rules SFS 6000-5-52 (HD 384.5.52), Clause 521, Table 52F)		N/A
	The insulation of external flexible cable complies with or is at least electrically and mechanically equivalent to that of flexible cables according to HD 21 or HD 22		N/A
13.103	NORWAY (DSB: FEL 1998 §28 and §10, NEK 400:2002 Clauses 520.1 and 521.1 and Table 52A)		N/A
	Cables with basic insulation are not accepted as wiring external to the switch. The insulation of external flexible cable complies with or is at least electrically and mechanical equivalent to that of flexible cables according to HD 21 or HD 22		N/A
	Cables complying with the electric strength test only are regarded as internal cables and are accepted to be installed in enclosures, conduits, ducting and trunking systems and the like		N/A
13.103	SWEDEN (ELSÄK-FS: 1999:5, Clauses 520.1 and 521.1 and Table 52-1)		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Cables with basic insulation are not accepted as wiring external to the switch. The insulation of external flexible cable complies with or is at least electrically and mechanical equivalent to that of flexible cables according to HD 21 or HD 22		N/A
	Cables complying with the electric strength test only are regarded as internal cables and are accepted to be installed in enclosures, conduits, ducting and trunking systems and the like		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

Appendix 2

IEC60669_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ATTACHMENT TO TEST REPORT IEC 60669-1 (ed. 4) EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Switches for household and similar fixed electrical installations Part 1: General requirements			
Differences according to : EN 60669-1:2018			
Attachment Form No : EU_GD_ IEC60669_1F			
Attachment Originator : IMQ S.p.A.			
Master Attachment : 2018-09-20			
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CENELEC COMMON MODIFICATIONS (EN)			
8.1	Replace Note 4 and note 5:		
	Note 4 see annex ZB for special national conditions		P
10	PROTECTION AGAINST ELECTRIC SHOCK		
10.3.2	Replaced by :		
	“cover or cover plates” replaced by “cover, cover plates and other parts of the enclosure”		N/A
10.3.3	Replaced by:		
	“cover or cover plates” replaced by “cover, cover plates and other parts of the enclosure”		N/A
12	TERMINALS		
12.2.5	Replace the text of index a in Table 6 by “Void”		N/A
15	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES OF SWITCHES, AND RESISTANCE TO HUMIDITY		
15.1	Replace the value 55 % by 75 %		P
20	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		
20.1	Replace the first dash by:		
	- for all type of switches and their dedicated boxes, where applicable		P
22	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		
22.1	Second sentence of the second paragraph deleted		-
23	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

IEC60669_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
23.Z1	Subclause added:		-
	Surface-type switches do not have bare current-carrying strips at the back		N/A
Z1	ELECTROMAGNETIC FIELDS (EMF) REQUIREMENTS		
	Electromagnetic field generated by switches covered by this part of the standard are considered negligible. Therefore, these requirements are deemed to be met without performing any test.	Considered in EN 60669-2-1	N/A
ANNEX A	ADDITIONAL REQUIREMENTS FOR SWITCHES HAVING FACILITIES FOR THE OUTLET AND RETENTION OF FLEXIBLE CABLES		
8.1	then the minimum and maximum size for which the anchorage is provided may be marked in an area adjacent to the anchorage, e.g. "6 mm – 16 mm" or "6 – 16". This information shall be put on the switch and/or the packaging unit.		N/A
13.Z1	Subclause added at the end:		
	Flexible cable outlet switches:		
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A
	- cord anchorage, or at least part of it, integral with or permanently fixed to one of the component parts of the switch		N/A
	- makeshift methods not used		N/A
	- cord anchorages suitable for different type of flexible cables		N/A
	Rewirable switches with earthing connection are designed with ample space for slack of the earthing conductor		N/A
ANNEX D	ADDITIONAL REQUIREMENTS FOR INSULATING REQUIREMENTS FOR INSULATION-PIERCING TERMINALS		
8	MARKING		
8.1	General		
	Add new list item after m)		
	n) length of the conductor to be inserted into the IPT, if applicable		N/A
8.9	Manufacturer information		
	Marking indicated on the manufacture's documentation for IPTs:		N/A
	Connection and disconnection procedure, if necessary		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

IEC60669_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Method of connection according to 7.1.10, if necessary		N/A
	An indication that the switch is equipped with non-reusable IPTs, if necessary		N/A
	Clear information that the conductor shall not be stripped before connecting		N/A
12	TERMINALS		
12.1	General		
	Switches provided with screw-type terminals, with screwless terminals or insulating-piercing terminals(IPTs)		N/A
	The test 12.2.8, 12.3.9, 12.3.10,12.4.9 and 12.4.10 on terminals, made after the test of 15.1		N/A
12.4	IPTs for external copper conductors		
12.4.1	IPTs terminals of the type suitable for:		
	- for rigid copper conductors only, or		N/A
	- for both rigid and flexible copper conductors (tests carried out with rigid and then repeated with flexible conductors)		N/A
12.4.2	IPTs terminals provided with clamping units which allow the proper connection of rigid or of rigid and flexible conductors having nominal cross-sectional areas as shown in table D2:		N/A
	Rated current (A)		
	Rated connecting capacity (mm ²)		
	Diameter of largest rigid conductor (mm)		
	Diameter of largest flexible conductor (mm)		
	Diameter of largest rigid isolated conductor (mm)		
	Diameter of largest flexible isolated conductor (mm) :		
	IPTs terminals allow the conductor to be connected without special preparation		N/A
	Conductor clamped between metal surfaces		N/A
12.4.3	Reusable IPTs: designed in such a way that no insulating material remains inside the terminal		N/A
	Compliance verified as follows:		
	Type(s) of conductors:	Flexible / rigid / stranded	N/A
	Largest / smallest cross-sectional area:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

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Clause	Requirement + Test	Result - Remark	Verdict
	Conductor connected and disconnected five times rotating it in such a way that is not connected twice at the same place		N/A
	No insulating material remains inside the switch, or		N/A
	It is possible to withdraw the insulating material from the switch		N/A
12.4.4	Parts of screwless terminals intended for carrying current of materials as specified in 22.5		N/A
12.4.5	IPTs transmitting sufficient contact pressure and without undue damage to the conductor		N/A
	Contact pressure between metal surfaces		N/A
12.4.6	Disconnection of a conductor from the reusable IPT: requires and operation other than a pull on the conductor only		N/A
12.4.7	IPTs intended to be used for the interconnections of two or more conductors, so designed that:		N/A
	- each conductor is clamped individually		N/A
	- the conductors can be connected or disconnected either at the same time or separately		N/A
	- each conductor is introduced in a separate clamping unit		N/A
	It is possible to clamp securely any number of conductors up the maximum as designed		N/A
12.4.8	IPTs designed so that adequate insertion of the conductor is obvious		N/A
	Over-insertion is prevented if further insertion is liable to reduce the creepage distances and/or clearances required, or to influence the operation of the accessory		N/A
12.4.9	IPTs properly fixed to the switch		N/A
12.4.10	IPTs terminals withstand mechanical stresses occurring in normal use	See appended table 12.4.10	N/A
	During application of the pull, conductor not come out of the terminal	See appended table 12.4.10	N/A
	During the test conductors not move noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
	Flexible conductor, the break of individual wires of the conductor shall not considered		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

IEC60669_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	No lack of the insulating material		N/A
12.4.11	IPTs terminals withstand electrical and thermal stresses occurring in normal use		N/A
	Test A: 192 temperature cycles test, each cycle with a duration of 1 h, with the test current as defined in Table 2 of Part I	See appended table 12.4.11	N/A
	- measured after 24 th and 192 th temperature cycle	See appended table 12.4.11	N/A
	Maximum voltage drop did not exceed 22,5 mV or 1,5 times 24 th cycle value	See appended table 12.4.11	N/A
	During the test conductors not move noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
12.4.12	Non-reusable IPT not possible to disconnect the product without destroying		N/A
12.4.13	IPTs that uses screws wire connections tested as follows (before each test of 12.4):		N/A
	Toque (stated in table 5 or by the manufacturer):		N/A
	Screws tightened and loosened 5 times. IPT not be damaged so as to impair its further use.		N/A
12.4.14	Screws for making the contact- pressure: not serve to fix any other component		N/A
	Screws not of soft metal		N/A
	The use of aluminium requires additional tests, according to EN 61545.		N/A
ANNEX E	ADDITIONAL REQUIREMENTS AND TESTS FOR SWITCHES INTENDED TO BE USED AT A TEMPERATURE LOWER THAN – 5 °C		
8	MARKING		
8.1	General		
	Add new list item after m)		
	n) Symbols for products declared as suitable for use at a temperature below the normal range	- 25 °C	N/A
13.15.2	The tests of 13.15.2 are performed at a temperature of – 25 °C		N/A
19	NORMAL OPERATION		
	Add the following new subclause		
19.4	Switches intended to be used in ambient temperature below – 5°C		

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Clause	Requirement + Test	Result - Remark	Verdict

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Clause	Requirement + Test	Result - Remark	Verdict
	Switches kept for 16 h in a freezer at a temperature – 25 °C ± 2 °C		
	- rate (operations per minute)	30	N/A
	number of operations without load every 4 h.....	20	N/A
	During and after the test: specimens function correctly, no visible harmful deformation, cracks or similar damage		N/A
	Reduced electric strength per clause 16		N/A
20	MECHANICAL STRENGTH		
	Add the following new subclause		
20.11	Impact test at low temperatures		
	Switches kept for 16 h in a freezer at a temperature – 25 °C ± 2 °C		
	The specimens are subjected to the impact test in according to 20.2		N/A
ANNEX ZB	SPECIAL NATIONAL CONDITIONS (EN)		
7.7	BELGIUM, FINLAND, GERMANY, NETHERLANDS, NORWAY, SWEDEN: design B not used due to installation practice		N/A
8.1	UNITED KINGDOM: marking of type reference not used		N/A
	GERMANY Add at the index n: n) The symbol that electrotechnical expertise is required		N/A
8.3	UNITED KINGDOM: marking of type reference not used		N/A
10.2	NORWAY: accessories requiring earth connection cannot normally be used due to the lack of an earthing conductor in many existing old buildings		N/A
10.3.3	NORWAY: accessories requiring earth connection cannot normally be used due to the lack of an earthing conductor in many existing old buildings		N/A
10.5	NORWAY: accessories requiring earth connection cannot normally be used due to the lack of an earthing conductor in many existing old buildings		N/A
12.2.5	FINLAND, NORWAY, SWEDEN: - additional test with rigid solid conductors (if exist in relevant IEC standard), if the first test has been made with rigid stranded conductors		N/A
	- in the case rigid stranded conductors do not exist, the test may be made with rigid solid conductors only		N/A

IEC 60669-2-1			
Clause	Requirement + Test	Result - Remark	Verdict

IEC60669_1F ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
12.2.6	FINLAND, NORWAY, SWEDEN: additional test with one rigid solid conductor and one rigid stranded conductor with same cross-sectional areas connected at same time is required for terminals allowing the connection of two conductors		N/A
13.15.2	DENMARK, FINLAND, NORWAY, SWEDEN, SWITZERLAND: sub-clause mandatory		N/A
Annex E	FINLAND, NORWAY, SWEDEN: This annex is normative		N/A
ANNEX ZC	A- DEVIATIONS (EN)		
11.2	BELGIUM: earthing terminals have a capacity not less than that of corresponding terminals for the supply conductors except that any additional external earthing terminal shall be of a size suitable for conductors of at least 4 mm ²		N/A