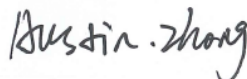


TEST REPORT IEC 60884-1 Plugs and socket-outlets for household and similar purposes Part 1: General requirements	
Report Number	B-S00298E0651
Date of issue	2025-11-13
Applicant's name	NINGBO YOSUN ELECTRIC TECHNOLOGY CO., LTD
Address	Room 906, rooms (9-1),(9-2), Langmu building, Baisha road sub district, Cixi City, Ningbo, Zhejiang Province, China
Client ID.....	YY2226
Report Query.....	
Test specification: Standard IEC 60884-1:2022 Non-standard test method N/A	
Test Report Form No..... IEC 60884_1E_V1 Test Report Form(s) Originator IMQ S.p.A. Master TRF..... Dated 2022-05-07 Copyright © 2017 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. 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.	
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Test item description..... PDU (Power Distribution Unit)	
Trade Mark	
Manufacturer.....	Same as applanct
Model/Type reference.....	YS10XX1(KGSU),YS15XX1(KGSU),YS20XX1(KGSU),YS15XX1SP, YS10XX1SPIP,YS15XX1MPIP,YS15XX1MP (XX indicates the number of jacks, from 01 to 50) K: Switch G: overload protection

S: Surge protection
(Un:250V~ 50/60Hz IR:16A
In(8/20uS):10KA Ur<1000v
Mp:L-N L-PE N-PE tA<25nS)
U: USB charger 5V 2.1A

Ratings.....: 250V~,16A



Testing procedure and testing location:		
☒	Testing Laboratory:	Beide (Shenzhen) Product Service Limited
Testing location/ address		6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China
Tested by (name + signature)		Austin Zhong 
Approved by (name + signature)		Martin Wang  
List of Attachments (including a total number of pages in each attachment):		
Attachment 1: Test report of IEC 60884-2-7:2025		
Attachment 2: Test report of DIN VDE 0620-2-1:2016+A1:2017		
Attachment 3: Test report of IEC 61058-1:2016		
Attachment 4: Test report of IEC 61058-1-1:2016		
Attachment 5: Test report of EN IEC 62368-1:2024+A11:2024		
Attachment 6: European Group Differences And National Differences		
Attachment 7: Photo Documentation		
Summary of testing:		
Tests performed (name of test and test clause):		Testing location:
The submitted samples were found to comply with the requirements of:		Beide (Shenzhen) Product Service Limited
- EN IEC 61058-1:2018 - EN 61058-1-1:2016 - IEC 60884-1:2022, - IEC 60884-2-7:2025, - DIN VDE0620-2-1:2016+A1:2017 - EN IEC 62368-1:2024+A11:2024		6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China
Summary of compliance with National Differences:		
The product fulfils the requirements of Germany and European Group Differences		
EN IEC 61058-1:2018		
EN 61058-1-1:2016		

Copy of marking plate:

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



Remark:

- the height of the symbol is not less than 5mm, the height of the WEEE symbol is not less than 7mm.
- The above marking are in the minimum requirements required by safety standard. For the final production sample, the marking which do not give rise to misunderstanding may be add.
- The marking plates of other models are in the same pattern.

Test item particulars.....:	
Standard Sheet	: DIN 49440 Teil 1
Rated current (A) / Rated voltage (V)	: 16A 250V~
Degree of protection against access to hazardous parts and against harmful ingress of solid foreign objects	IP2X / IP4X / IP5X
Degree of protection against harmful ingress of water	IPX0 / IPX4 / IPX5 / IPX6
Provision for earthing	: without earthing contact / with earthing contact
Method of connecting the cable	: rewirable / non-rewirable
Type of cable	: 60227 IEC53
Nominal cross-sectional areas (mm ²)	: 3x1.5 mm ²
Type of terminals	: screw type / screwless (rigid) / screwless (rigid and flexible)
Type of connections	: soldered / welded / crimped / other
Socket-outlets:	
Degree of protection against electric shock	: normal protection / increased protection
Existence of shutters	: without shutters / with shutters
Method of application / mounting of the socket-outlet	: surface-type / flush-type / semi-flush-type / panel type / architrave-type / portable type / table-type (single/multiple) / floor recessed type / appliance type
Method of installation	: design A / design B
Intended for circuits where	: a single earthing circuit provides protective earthing / electrical noise immunity is desired for the earthing circuit
Plugs:	
Class of equipment	: 0 / I / II

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IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
8	MARKING		P
8.1	Accessories marked as follows:		P
	- rated current (A)	16A	P
	- rated voltage (V)	250V	P
	- symbol for nature of supply	~	P
	- manufacturer's or responsible vendor's name	See page 1	P
	- type reference	See page 1	P
	- degree of protection (first characteristic numeral) if higher than 2	IP2X	N/A
	- degree of protection (second characteristic numeral) if higher than 0	IPX0	N/A
	- degree of protection (first characteristic numeral) higher than 4 for fixed socket outlet in which case the second characteristic numeral shall also be marked.....		N/A
	- degree of protection (second characteristic numeral) higher than 2 for fixed socket outlet in which case the first characteristic numeral shall also be marked		N/A
	Socket-outlets with screwless terminals marked with the following:		N/A
	- the length of insulation to be removed		N/A
	- an indication of the suitability to accept rigid conductors only (if any)		N/A
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
8.3	Marking of fixed socket-outlets placed on the main part:		N/A
	- rated current, rated voltage and nature of supply		N/A
	- identification mark of the manufacturer or of the responsible vendor		N/A
	- length of insulation to be removed, if any		N/A
	- indication of the suitability to accept rigid conductors only for screwless terminals for those socket-outlets having this restriction		N/A
	- type reference		N/A
	Cover plates necessary for safety purposes and intended to be sold separately: marked with the manufacturer's or responsible vendor's name and type reference		N/A
	IP code, if applicable: marked so as to be easily discernible		N/A

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fixed socket-outlets classified according to item b) of 7.2.5: identified by a triangle visible after installation unless they have an interface configuration different from that used in normal circuits		N/A
8.4	Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible		P
	Plugs and portable socket-outlets for equipment of class II not marked with the symbol for class II construction		N/A
8.5	Neutral terminals: N	Soldered connections	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 socket-outlet:		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 such terminals may be achieved by:		N/A
	- their being marked with graphical symbols according to IEC 60417-2 or colours and/or alphanumeric system, or		N/A
	- their being marked with their physical dimensions or relative location		N/A
8.6	Surface-type mounting boxes forming an integral part of socket-outlets having an IP code higher than IP4X, or higher than IPX2, the IP code marked on the outside of its associated enclosure so as to be easily discernible		N/A
8.7	Indication of which position or with which special provision the declared IP of flush-type and semi-flush-type fixed socket-outlets having IP>X0 is ensured		N/A
8.8	Marking durable and clearly legible with normal or corrected vision, without additional magnification. Test: 15 s with water and 15 s with petroleum spirit		P
9	CHECKING OF DIMENSIONS		P
9.1	Accessories and surface-type mounting boxes comply with the appropriate standard sheets and corresponding gauges, if any		P

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets	DIN VDE 0620-2-1, DIN 49440 Teil 1	P
	Compliance checked by measurement and by means of gauges with manufacturing tolerances as shown in table 2		P
9.2	It is not possible to engage a plug with:		P
	- a socket-outlet having a higher voltage rating or a lower current rating;		P
	- a socket-outlet with a different number of live poles (exception admitted provided that no dangerous situation can arise);		P
	- a socket-outlet with earthing contact, if the existing plug of the present national system is a plug for class 0 equipment;		P
	Engagement of an existing plugs on the present national system for equipment of class 0 or of class I with a socket-outlet exclusively designed to accept plugs for class II equipment		P
	Impossibility of insertion checked by applying a gauge, for 1 min, with a force of:		P
	- 150 N (rated current $\leq 16A$);		P
	- 250 N (rated current $> 16A$)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ C$		P
9.3	Deviations from standard sheets made only if they provide technical advantage and do not affect the purpose and safety of accessories complying with standard sheet		N/A

10	PROTECTION AGAINST ELECTRIC SHOCK		P
10.1	Live parts not accessible, even after removal of parts which can be removed without the use of a tool for:		P
	Fixed socket-outlets		N/A
	Plugs when the plug is in partial or complete engagement with a socket-outlet		N/A
	Test with test probe B of IEC 61032		P
	Accessories with elastomeric or thermoplastic material: additional test carried out at $(35 \pm 2) ^\circ C$ with test probe 11 of IEC 61032 (75 N for 1 min)		P
	During the test: accessories not deform and no live parts accessible		P
	Plugs and portable socket-outlets pressed with a force of 150 N for 5 min as shown in figure 8: specimens not show deformation		P

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.2	Accessible parts (with exception of small screws and the like for fixing main parts and covers or cover plates): made of insulating material		P
	Cover or cover plates of fixed socket-outlets and accessible parts of portable socket-outlets: made of metal if the requirements of 10.2.1 or 10.2.2 are fulfilled		N/A
10.2.1	Accessible metal parts or accessible metal parts protected by supplementary insulation made by insulating linings or insulating barriers		N/A
	Insulating linings or insulating barriers cannot be removed without being permanently damaged		N/A
	Insulating linings or insulating barriers cannot be replaced in an incorrect position and, if they are omitted, accessories are rendered inoperable or manifestly incomplete		N/A
	There is no risk of accidental contact between live parts and metal covers or cover plates		N/A
10.2.2	Accessible metal parts are reliably connected, through a low-resistance connection, to the earth during fixing		N/A
10.3	Contact between a pin of a plug and a live socket-contact of a socket-outlet not possible while any other pin is accessible		P
	Compliance checked by manual test and by means of gauges with tolerances as specified in table 2		P
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ\text{C}$		P
	Socket-outlets with enclosure or bodies of rubber or polyvinyl chloride: test carried out with a force of 75 N for 1 min		P
	Fixed socket-outlets provided with metal covers or cover plates: clearance of at least 2 mm required between a pin and a socket-contact when another pin(s) is(are) in contact with the metal covers or cover plates (mm).....:		N/A
10.4	External parts of plugs made of insulating material		N/A
	Overall dimensions of rings around pins not exceed 8 mm concentric with respect to the pin		N/A
10.5	Shuttered socket-outlets: live parts not accessible, without a plug in engagement, with the gauges shown in figure 9 and 10		P
	Live contacts automatically screened when the plug is withdrawn		P
	Shutters so designed that a plug is inserted with the same movement in a socket outlet with shutters as in a socket-outlet without shutters		P

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		P
	Gauge of figure 9, applied to the entry holes corresponding to live contacts with a force of 20 N, for approximately 5 s, successively in three directions, does not touch live parts		P
	Steel gauge of figure 10, applied to the entry holes corresponding to live contacts with a force of 1 N for approximately 5 s, in three directions, does not touch live parts		P
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ\text{C}$		P
10.6	Earthing contacts of a socket-outlet designed that they cannot be deformed by the insertion of a plug		P
	Test plug inserted into the socket-outlet with a force of 150 N for 1 min		P
	After this test: socket-outlet still comply with the requirements of clause 9		P
10.7	Socket-outlet with or without lid with increased protection: live parts not accessible		N/A
	Test wire of 1 mm diameter (figure 10) applied with a force of 1 N on all accessible surfaces does not touch live parts		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ\text{C}$		N/A
	Socket-outlet tested without a plug inserted with the lid, if any, open		N/A

11	PROVISION FOR EARTHING		P
11.1	Earth connection made before the current-carrying contacts of the plug become live		P
	Current-carrying pins are separated before the earth connection is broken		P
11.2	Earthing terminals of rewirable accessories comply with clause 12		N/A
	Earthing terminals of the same size as the corresponding terminals for the supply conductors		N/A
	Earthing terminals of rewirable accessories: internal		N/A
	Earthing terminals of fixed socket-outlets: fixed to the base or to a part reliably fixed to the base		N/A
	Earthing contacts of fixed socket-outlets:		N/A
	- fixed to the base, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- fixed to the cover (reliably connected to the earthing terminals; contact pieces silver plated or with adequate protection)		N/A
	Parts of earthing circuit in one piece or reliably connected by riveting, welding, or the like		N/A
11.3	Accessible metal parts of fixed socket-outlets: permanently and reliably connected to the earthing terminal		N/A
11.4	Socket-outlets, having an IP>X0, with enclosure of insulating material and more than one cable inlet, provided with:		N/A
	- an internal fixed earthing terminal, or		N/A
	- adequate space for a floating terminal (test connection using the type of terminal specified by the manufacturer), unless		N/A
	- earthing terminal of socket-outlet itself allows the connection of an incoming and an outgoing earthing conductor		N/A
11.5	Connection between earthing terminal and accessible metal parts: of low resistance		P
	Test current equal to 1.5 times the rated current or 25 A (A)	25	—
	Resistance not exceed 0.05 Ω (Ω)	0.01 Ω	P
11.6	Fixed socket-outlets according to item b) of 7.2.5: earthing socket contact and its terminal electrically separated from any metal mounting means or other exposed conductive parts which may be connected to the protective earthing circuit of the installation		N/A

12	TERMINALS AND TERMINATIONS		P
	All the test on terminals, with the exception of the tests of 12.3 11 and 12.3.12, made after the test of clause 16		N/A
12.1	General		P
12.1.1	Rewirable fixed socket-outlets provided with screw-type terminals or with screwless terminals		N/A
	Rewirable plugs and portable socket-outlets provided with terminals with screw clamping		N/A
	Pre-soldered flexible conductors used: pre-soldered area outside the clamp area of screw-type terminals		N/A
	Clamping means of terminals: not serve to fix any other components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
12.1.2	Non-rewirable accessories provided with soldered, welded, crimped or equally effective permanent connections (termination)	soldered	P
	Screwed or Snap-On connections not used		P
	Connections made by crimping a pre-soldered flexible conductor not permitted		P
12.2	Terminals with screw clamping for external copper conductors		N/A
12.2.1	Accessories provided with terminals which allows the proper connection of copper conductors as shows in table 3		N/A
	Rated current (A); Type of accessories		—
	Type of conductor (rigid / flexible)		—
	Smallest / largest cross-sectional area (mm ²)		—
	Diameter of the largest conductor (mm)		—
	Figure of terminal		—
	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	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 from the clamping unit		N/A
12.2.8	Terminals not work loose from their fixing to accessories		N/A
	Torque test (screws and nuts tightened and loosened 5 times):		N/A
	- rated current (A)		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- copper conductor of the largest cross-sectional area (mm ²) (table 3)		—
	- type of conductor (solid or stranded)		—
	- torque (Nm) (table 6 or appropriate figures 2, 3 or 4)		—
	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
	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 <i>g</i> no less than the value specified in figure 2: required (mm); measured (mm)		N/A
	Mantle terminals: distance <i>g</i> no less than the value specified in figure 5: required (mm); measured (mm)		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 two clamping units each allowing the proper connection of rigid or of rigid and flexible conductors having nominal cross-sectional areas from 1,5 up to 2,5 mm ² (table 7)		N/A
	Two conductors to be connected: each conductor introduced in a separate clamping unit		N/A
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 26.5		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

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Clause	Requirement + Test	Result - Remark	Verdict
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 intended 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
	- the clamping of one of the conductors is independent of the clamping of the other conductor(s)		N/A
	- during the connection or disconnection the conductors can be connected or disconnected either at the same time or separately		N/A
	- each conductor introduced in a separate clamping unit.		N/A
	- it is possible to 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 of fixed socket-outlets: adequate insertion obvious and over-insertion prevented		N/A
12.3.9	Screwless terminals properly fixed to the socket-outlets		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
12.3.10	Screwless terminals withstand mechanical stresses occurring in normal use	See appended table 12.3.10	N/A
	During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 11	See appended table 12.3.10	N/A
	During the test: conductors not moved 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	See appended table 12.3.11	N/A
	After the test: inspection show no changes		N/A
	Repetition of mechanical strength test according to 12.3.10	See appended table 12.3.11	N/A

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 11	See appended table 12.3.11	N/A
	During the test: conductors not moved 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	See appended table 12.3.12	N/A

13	CONSTRUCTION OF FIXED SOCKET-OUTLETS		N/A
13.1	Socket-contact assembly have sufficient resilience to ensure adequate contact pressure on plug pins		N/A
	Part of socket-contact assembly ensure metallic opposing contacts at least on two sides of each pins		N/A
13.2	Socket-contact and pin(s) of socket-outlet which are made of copper or copper alloy, as specified in 26.5, are considered as complying with this requirement		N/A
	The pin(s) of socket-outlets so constructed in such a way that the mechanical strength of the pin(s) does not depend on the plastic material		N/A
	Compliance is checked by inspection and in case of doubt by the tests of 14.2 and Clause 21 on a new set of specimens without plastic		N/A
13.3	Insulating linings, barriers and the like: adequate mechanical strength		N/A
13.4	Socket-outlets constructed as to permit		N/A
	- easy introduction into the terminal and reliable connection of the conductors in the terminals, except for lead wires of pilot lights		N/A
	- easy fixing of the main part to a wall or in a mounting box		N/A
	- correct positioning of the conductors		N/A
	- adequate space between the underside of the main part and the surface on which the main part is mounted;		N/A
	- adequate space between the sides of the main part and the enclosure (cover or box);		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket-outlets having screwless terminals, constructed that the connecting and/or disconnecting means of the screwless terminals cannot be activated by the conductors during and after installation		N/A
	Compliance is checked by inspection and in case of doubt by the following test		N/A
	The test is carried out with a solid copper conductor having the smallest cross-sectional area, as specified in 12.3.2. (mm ²).....:		N/A
	If it is not possible to exert a force onto the connecting/disconnecting device, the product is deemed to comply with the requirements without further tests.		N/A
	During the application of the pull, the conductor do not come out of the screwless terminal		N/A
	In addition socket-outlets classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors or activating the connecting and/or disconnecting means of screwless terminals.		N/A
	Compliance is checked by inspection and by an installation test with conductors of the largest nominal cross-sectional area specified in Table 3 (mm ²).....:		N/A
13.5	Socket-outlets designed that full engagement of associated plugs is not prevented by any projection from their engagement face		N/A
	Gap between the engagement face of the socket-outlet and the plug: not exceed 1 mm		N/A
13.6	Covers provided with bushings for the entry holes for the pins: not possible to remove them from the outside or for them to become detached inadvertently from the inside when the cover is removed		N/A
13.7	Covers, cover-plates or parts of them intended to ensure protection against electric shock:		N/A
	- held in place at two or more points by effective fixings		N/A
	- 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 or cover-plates of socket-outlets of design A serve to fix the main parts: there are means to maintain the base in position, even after removal of the covers or cover-plates		N/A
13.7.1	Covers or cover-plates whose fixings are of the screw-type:		N/A

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked by inspection only		N/A
13.7.2	Covers or cover-plates 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:		--
	Compliance checked, when their removal may give access, with the standard test finger:		--
	to live parts: by the test of 24.14 (verification of the non-removal and the removal)		N/A
	to non-earthed metal parts separated from live parts in such a way that creepage distances and clearances have the values shown in table 23: by the test of 24.15 (verification of the non-removal and the removal)		N/A
	only to parts of insulating material, or earthed metal parts, or metal parts separated from live parts in such a way that creepage distances and clearances have twice the values shown in table 23, or live parts of SEL V circuits not greater than 25 V a.c.: by the test of 24.16 (verification of the non-removal and the removal)		N/A
13.7.3	Covers or cover-plates the fixing of which is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's instructions given in an instruction sheet or in other documentation:		N/A
	Compliance checked, when their removal may give access, with the standard test finger:		N/A
	to live parts: by the test of 24.14 (verification of the non-removal only)		N/A
	to non-earthed metal parts separated from live parts in such a way that creepage distances and clearances have the values shown in table 23: by the test of 24.15 (verification of the non-removal only)		N/A
	only to parts of insulating material, or earthed metal parts, or metal parts separated from live parts in such a way that creepage distances and clearances have twice the values shown in table 23, or live parts of SEL V circuits not greater than 25 V a.c.: by the test of 24.16 (verification of the non-removal only)		N/A
13.8	Cover-plate intended for a socket-outlet with earthing contact: not interchangeable with a cover-plate intended for a socket-outlet without earthing contact		N/A
13.9	Surface-type socket-outlets: no free openings in their enclosures		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
13.10	Screws or other means for mounting the socket-outlet on a surface in a box or enclosure: easily accessible from the front		N/A
	Fixing means not serve any other fixing purpose		N/A
13.11	Multiple socket-outlets with a common base: provided with fixed links for the interconnection of the contacts in parallel		N/A
	Fixing of the links independent from the connection of the supply wires		N/A
13.12	Multiple 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
13.13	Mounting plate of surface-type socket-outlets: adequate mechanical strength		N/A
13.14	Socket-outlets withstand the lateral strain imposed by equipment likely to be introduced into them		N/A
	Socket-outlets 16A 250V: test made 4 times with the socket-outlet turned through 90°, 5 N for 1 min (device shown in fig. 13)		N/A
	During the test: device not become disengaged from the socket-outlet		N/A
	After the test:		N/A
	- no damage		N/A
	- socket-outlets comply with clause 22		N/A
13.15	Socket-outlets are not an integral part of lampholders		N/A
13.16	Surface-type socket-outlets having IP>20 are according to their IP classification when fitted with conduits or with sheathed cables and without a plug in engagement		N/A
	Surface-type socket-outlets having IPX4 and IPX6 have provision for opening a drain hole		N/A
	Socket-outlets with a drain hole: drain hole is not less than 5 mm in diameter, or 20 mm ² in area with a width and a length of not less than 3 mm ...:		N/A
	Drain hole: effective		N/A
	Lid springs (if any): of corrosion-resistant material (bronze or stainless steel)		N/A
13.17	Earthing pins: adequate mechanical strength		N/A
	Not solid pins: compliance checked by inspection and by the test of 14.2 made after the tests of clause 21		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
13.18	Earthing contacts, phase contacts and neutral contacts :		N/A
	- locked against rotation;		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
	- when the product is ready for the wiring do not possible to be removed without the use of a tool		N/A
13.19	Metal strips of the earthing circuit: no burrs which might damage the insulation of the supply conductors		N/A
13.20	Socket-outlets to be installed in a box: designed that the conductor ends can be prepared after the box is mounted in position, but before the socket-outlet is fitted in the box		N/A
13.21	Inlet openings: allow the introduction of the conduit or the sheath of the cable		N/A
	Surface-type socket-outlets:		N/A
	the conduit or sheath of the cable can enter at least 1 mm into the enclosure		N/A
	inlet opening for conduit entries, or at least two of them if there are more than one, capable of accepting conduit sizes of 16, 20, 25 or 32 according to IEC 60423 or a combination of at least two of any of these sizes		N/A
	inlet opening for cable entries capable of accepting cables having the dimensions specified in table 14 or be as specified by the manufacturer: rated current (A); Limits of external dimensions of cable min/max (mm) :		N/A
13.22	Membranes (grommets) in inlet openings: reliably fixed and not displaced by the mechanical and thermal stresses occurring in normal use		N/A
	Test on membranes subjected to the ageing treatment specified in 16.1 and assembled in the accessories		N/A
	Accessories placed at $(40 \pm 2) ^\circ\text{C}$ for 2 h. Force of 30 N applied for 5 s by test probe 11 of IEC 61032. During the test: no deformation		N/A
	Membranes likely to be subjected to an axial pull: axial pull of 30 N applied for 5 s. During the test: membranes not become detached		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
	Test repeated with membranes not subjected to any treatment		N/A
13.23	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 16.1 and assembled in the accessories		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Accessories kept at $(-15 \pm 2) ^\circ\text{C}$ for 2 h: possibility to introduce cables of the largest diameter through membranes		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A

14	CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OUTLETS		P
14.1	Non-rewirable portable accessories:		P
	flexible cable cannot be separated from the accessory without making it permanently useless		P
	Accessory cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such		P
14.2	Pins of portable accessories: adequate mechanical strength		N/A
	Test for pins not solid (made after clause 21): force of 100 N exerted on the pin, according to figure 14, for 1 min by means of a steel rod $\varnothing$ 4.8 mm		N/A
	During the application of the force: reduction of the dimension of the pin not exceed 0,15 mm		N/A
	After removal of the rod: dimensions of the pin not changed by more than 0,06 mm		N/A
14.3	Pin(s) and contacts of portable accessories :		N/A
	- locked against rotation;		N/A
	- not removable without dismantling the plug;		N/A
	- adequately fixed in the body of the plug		N/A
	Earthing or neutral pins or contacts of plugs: not possible to arrange in an incorrect position		N/A
	The pin(s) of portable accessories constructed in such a way that the mechanical strength of the pin(s) does not depend on the plastic material		N/A
	Compliance is checked by inspection and in case of doubt by the tests of 14.2 and Clause 21 on a new set of specimens without plastic		N/A
	Surfaces of plug pin(s) smooth and free from burrs or sharp edges and other irregularities which could cause damage or excessive wear to corresponding socket contacts or shutters		N/A
14.4	Earthing contacts, phase contacts and neutral contacts of portable socket-outlets :		P
	- locked against rotation		P
	- removable only with the aid of a tool, after dismantling the socket-outlet		P

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition, for single portable socket-outlets compliance is checked by the test of 24.2		N/A
14.5	Socket-contact assemblies: sufficient resilience		P
	Parts of socket-contact assemblies:		P
	- are not of insulating material except ceramic, or other material with no less suitable characteristics		P
	- ensure metallic contacts at least on two opposing sides of each pin		P
	Contact pressure of the contact tube does not depend on soldered connection only		P
14.6	Pins and socket-contacts: resistant to corrosion and abrasion		P
	Socket contacts and pin(s) of socket-outlets, which are made of copper or copper alloy, as specified in 26.5, are considered as complying with this requirement.		P
14.7	Enclosures of rewirable portable accessories: completely enclose terminals and ends of flexible cable		N/A
	Construction is unlikely that:		N/A
	- cores not pressed against each other causing damage		N/A
	- cores of live conductor not pressed against accessible metal parts		N/A
	- core of earthing conductor not pressed against live parts		N/A
14.8	Rewirable portable accessories: terminal screws or nuts cannot become loose and fall out of position and establish an electrical connection between live parts and earthing terminal or metal parts		N/A
14.9	Rewirable portable accessories with earthing contact: ample space for slack of earthing (test)		N/A
	Non-rewirable non-moulded-on accessories with earthing contact: current-carrying conductors stressed before the earthing conductor if the flexible cable slips in its anchorage		P
14.10	Terminals of rewirable portable accessories and terminations of non-rewirable portable accessories: located and shielded that loose wires not present a risk of electric shock		P
	Non-rewirable moulded-on portable accessories: provided with means to prevent loose wires of a conductor from reducing the minimum isolation distance requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.10.1	Rewirable accessories: test with 6 mm free wire		N/A
	free wire of a conductor connected to a live terminal not touch any accessible metal part or able to emerge from the enclosure		N/A
	free wire of a conductor connected to an earthing terminal not touch a live part		N/A
14.10.2	Non-rewirable, non-moulded-on accessories: test with a free wire of length equivalent to the maximum designed stripping length declared by the manufacturer plus 2 mm		P
	free wire of a conductor connected to a live termination not touch any accessible metal part or reduce creepage distance and clearance below 1.5 mm to the external surface		P
	free wire of a conductor connected to an earth termination not touch any live part		P
14.10.3	Non-rewirable, moulded-on accessories:		P
	Verification of means to prevent stray wires reducing the minimum distance through insulation to external accessible surface below 1.5 mm		P
14.11	Rewirable portable accessories:		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 securely fixed to one of the component parts of the plug or portable socket-outlet		N/A
	- makeshift methods not used		N/A
	- cord anchorage suitable for the different types of flexible cable which may be connected to it; screws, if any: not serve to fix any other component		N/A
	- cord anchorages: of insulating material or provided with an insulating lining fixed to the metal parts		N/A
	- metal parts of cord anchorages, including clamping screws: insulated from the earthing circuit		N/A
14.12	Rewirable portable accessories and non-rewirable non-moulded on portable accessories: it is not possible to remove covers, cover-plates or parts of them intended to ensure protection against electric shock without the use of a tool		P
14.13	Covers of portable socket-outlets: bushings for entry holes for the pins not removable from the outside or detachable inadvertently from the inside		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.14	Screws intended to allow access to interior of the accessory: captive		P
14.15	Engagement face of plugs: no projections		N/A
14.16	Engagement face of portable socket-outlets: no projection		P
14.17	Portable accessories of IP>20: enclosed according to their IP classification		N/A
	Plugs having IP>20: adequately enclosed with the exception of the engagement face		N/A
	Portable socket-outlets having IP>20: adequately enclosed without a plug in engagement		N/A
	Lid springs (if any): of corrosion-resistant material (bronze or stainless steel)		N/A
14.18	Portable socket-outlets: means for suspension from a wall or other mounting surfaces not allow access to live parts		N/A
	No free openings between space intended for suspension means by which the socket-outlet is fixed to the wall, or other mounting surface and live parts		N/A
14.19	Combinations of portable accessories and switches, circuit-breakers or other devices comply with relevant individual IEC standards, if relevant combined product standard does not exist	See appended table 14.22	P
14.20	Portable accessories: not integral part of lampholders		P
14.21	Plugs for equipment of class II:		N/A
	- rewirable or non-rewirable		N/A
	- if part of a cord set: provided with a connector for equipment of class II		N/A
	- if part of a cord extension set: provided with a portable socket-outlet for equipment of class II		N/A
14.22	Components (switches and fuses) incorporated in accessories: comply with the relevant IEC standard as far as it applies		P
	Components incorporated in portable accessories so rated, or so protected, that overloading of either the component or the plug or the socket-outlet portion cannot occur in normal use		P
	Requirements for switches incorporated in portable accessories are detailed in Annex D	See appended table 14.22	P
	For portable socket-outlets and rewirable plugs the incorporated overcurrent protective device in the accessory shall have a rated current equal to or less than the rated current of the accessory		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Any other component(s), such as switches or control devices, have a rated current not less than (rated current referred to resistive load):		P
	- the rated current of the accessory or		P
	- the rated current of the incorporated overcurrent protective device, if any		N/A
	For non-rewirable plugs, any other incorporated component(s), such as switches or control devices, have a rated current not less than:		N/A
	- the test current for the combination of the accessory and the cable as indicated in Table 20, for Clause 21, or		N/A
	- the rated current of the incorporated overcurrent protective device, if any		N/A
	Any incorporated component(s) have a rated voltage not less than the rated voltage of the accessory		P
	Compliance is checked by inspection and, if necessary, by testing the component according to the relevant IEC standard		P
14.23	Plug-in equipment: not cause overheating of the pins or impose undue strain		N/A
	Plugs with rating above 16 A and 250 V: not integral part of other equipment		N/A
	Tests for two-pole plugs, with or without earthing contact, with rating up to and including 16 A and 250 V (plug of equipment inserted into a fixed socket-outlet complying with this standard):		N/A
14.23.1	Socket-outlet connected to a supply voltage equal to 1.1 times the highest rated voltage of the equipment (V)		—
	Temperature rise of the pins after 1 h not exceed 45 K (K)		N/A
14.23.2	Additional torque applied to the socket-outlet in order to maintain the engagement face in the vertical plane not exceed 0.25 Nm (Nm)		N/A
14.24	Plugs can easily be withdrawn by hand from the relevant socket-outlets		N/A
	Gripping surfaces are so designed that the plug can be withdrawn without having to pull the flexible cable		N/A
14.25	Membranes in inlet openings of portable accessories: meet the requirements of 13.22 and 13.23		N/A
14.26	Rewirable portable socket-outlets which can be assembled and wired for normal use after their rear part has been fixed onto a surface comply both with the requirements for portable socket-outlets and with the following additional requirements for surface fixed socket-outlets:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- provision for earthing: 11.2, 11.3, 11.6;		N/A
	- terminals and terminations: 12.2.1;		N/A
	- construction of fixed socket-outlets: Clause 13;		N/A
	- resistance to ageing, protection provided by enclosures, and resistance to humidity: 16.2.1, 16.2.2;		N/A
	- temperature rise: Clause 19;		N/A
	- mechanical strength: Clause 24;		N/A
	- resistance to heat: Clause 25;		N/A
	- creepage distances, clearances and distances through sealing compound: Clause 27;		N/A
	- resistance of insulating material to abnormal heat, to fire and to tracking: 28.1.1, glow-wire test		N/A

15	INTERLOCKED SOCKET-OUTLETS		N/A
	Socket-outlet interlocked with a switch:		N/A
	plug cannot be inserted into or completely withdrawn from the socket-outlet while the socket-contacts are live		N/A
	socket-contacts cannot be made live until a plug is almost completely in engagement		N/A

16	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY		P
16.1	Resistance to ageing		P
	Accessories are resistant to ageing		P
	For accessories having a lid, the lid is closed during the test		N/A
	Portable socket-outlets: the plug of the same system having the same rated current as the socket-outlet inserted into the socket-outlet during the test		P
	Accessories subjected to a test in a heating cabinet at $(70 \pm 2) ^\circ\text{C}$ for seven days (168 h)		P
	After the tests, the specimens show:		P
	- no crack visible with normal or corrected vision without additional magnification		P
	- no sticky or greasy material		P
	- no trace of cloth (forefinger pressed with 5 N)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- no damage		P
	Portable socket-outlets: contact pressure of the contact assembly checked as specified in subclause 22.2 with the single-pin gauge		P
16.2	Protection provided by enclosures		P
	Enclosures provide a degree of protection in accordance with the IP designation of the accessory		P
16.2.1	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		P
	Accessories and their enclosures provide a degree of protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		P
	Fixed socket-outlets: mounted as in normal use on a vertical surface		N/A
	Flush-type and semi-flush type socket-outlets: mounted in an appropriate box according to the manufacturer's instructions		N/A
	Accessories with screwed glands or membranes fitted with flexible cables within the range specified in table 3:		N/A
	- largest cross-sectional area (mm ²); type of cable (table 17)		—
	- smallest cross-sectional area (mm ²); type of cable (table 17)		—
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 24.6 (Nm)		—
	Screws of the enclosure tightened with a torque equal to 2/3 of the torque given in table 6 (Nm) ..		—
16.2.1.1	Protection against access to hazardous parts		P
	Appropriate test performed as specified in IEC 60529 (see also clause 10)		P
16.2.1.2	Protection against harmful effects due to ingress of solid foreign objects		P
	Appropriate test performed as specified in IEC 60529	IP20	P
	Test on accessories with IP5X (considered to be of category 2): dust not penetrated in a quantity to interfere with satisfactory operation or to impair safety		N/A
	Test on accessories with IP6X (considered to be of category 1): dust do not penetrate		N/A
16.2.2	Protection against harmful effects due to ingress of water		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Accessories and their enclosures provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification		N/A
	Appropriate test performed as specified in IEC 60529 under the following conditions:		N/A
	Flush-type and semi-flush type socket-outlets: fixed in a vertical test wall using an appropriate box according to the manufacturer's instructions		N/A
	Accessory suitable to be installed on a rough wall: test wall according to figure 15 is used		N/A
	Surface-type socket-outlets mounted as for normal use in a vertical position and fitted with cables (having conductors of the largest and smallest nominal cross-sectional area given in table 3) or conduits or both in accordance with the manufacturer's instructions:		N/A
	- largest cross-sectional area (mm ²); type of cable (table 17)		—
	- smallest cross-sectional area (mm ²); type of cable (table 17)		—
	Portable socket-outlets tested on a plain, horizontal surface in a position as in normal use and fitted with flexible cables (having conductors of the largest and smallest nominal cross-sectional area given in table 3) according to table 17:		N/A
	- largest cross-sectional area (mm ²); type of cable (table 17)		—
	- smallest cross-sectional area (mm ²); type of cable (table 17)		—
	Screws of enclosure tightened with a torque equal to 2/3 of the torque given in table 6 (Nm)		—
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 24.6 (Nm)		—
	Accessory with drain holes opened during the test: any accumulation of water proved by inspection		N/A
	Socket-outlets tested without a plug in engagement		N/A
	Plugs tested when in full engagement with:		N/A
	- a fixed socket-outlets		N/A
	- a portable socket-outlets		N/A
	of the same system and with the same degree of protection against harmful effects due to ingress of water		—
	Specimens withstand an electric strength test specified in 17.2 which is started within 5 min of completion of the IP test		N/A
16.3	Resistance to humidity		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Accessories 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 %		P
	Specimens kept in the cabinet for:		P
	- two days (48 h) for accessories having IPX0		P
	- seven days (168 h) for accessories having IP>X0		N/A
	After this treatment the specimens show no damage		P

17	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
17.1	Insulation resistance measured 1 min after application of 500 V d.c.	See appended table 17.1	P
17.2	Electric strength: a.c. test voltage applied for 1 min	See appended table 17.2	P
18	OPERATION OF EARTHING CONTACTS		P
	Earthing contacts provide adequate contact pressure and not deteriorate in normal use		P
	Compliance checked by the tests of clauses 19 and 21		P

19	TEMPERATURE RISE		P
	Accessories constructed that they comply with the following temperature rise test		P
	Non-rewirable accessories are tested as delivered		P
	In the case of multiple socket-outlets, the test is carried out on one socket-outlet of each type and current rating with the test current as specified in Table 20 passed through that one socket-outlet	See appended tables	P
	The temperature rise of the terminals, terminations and clamping units according to Figure 44 determined by means of thermocouples do not exceed 45 K	See appended tables	P
19.1	Socket-outlets and plugs are tested as follows:		P
	Socket-outlets tested using a test plug with brass pins having the minimum specified dimensions	See appended table 19.1	P
	For this test the temperature rise is measured on the terminals and terminations.		P
	Plugs tested with clamping units having dimensions specified in Figure 44 fitted on each live pin and earthing pin, if any	See appended table 19.1	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Plugs having lateral earthing contacts and resilient earthing contacts tested using a fixed socket-outlet complying with the standard and having as near to-average characteristics as can be selected, but with minimum size of the earthing pin, if any	See appended table 19.1	P
19.2	Fixed socket-outlets of a socket-outlet and fused plug system are tested as follows:		N/A
	a) For a single socket-outlet the plug is inserted into the socket-outlet and 70 % of the test current is passed through the plug	See appended table 19.2	N/A
	The balance of the total test current is passed, simultaneously through a looped connection, connected to the socket-outlet terminals		N/A
	The total nominal load on the supply cable is passed for 60 min	See appended table 19.2	N/A
	b) For a multiple socket-outlet a plug is inserted into one socket-outlet and 70 % of the test current is passed	See appended table 19.2	N/A
	A second plug is inserted into another socket-outlet and the balance of the total test current is passed simultaneously through this plug.....:	See appended table 19.2	N/A
	The total nominal load on the supply cable is passed for 60 min.	See appended table 19.2	N/A
19.3	Portable socket-outlets and rewirable plugs with incorporated components are tested by the following two tests:		N/A
	– with a current which is equal to the test current as indicated in Table 20, for Clause 19	See appended table 19.3	N/A
	– with a current which is equal to the rated current of the portable accessory or the rated current of the component(s), whichever is the lower	See appended table 19.3	N/A
	Non-rewirable plugs with incorporated components are tested by the following two tests:		N/A
	– with a current which is equal to the test current for the combination of the plug and the cable as indicated in Table 20, for Clause 19	See appended table 19.3	N/A
	– with a current which is equal to the test current for the combination of the plug and the cable as indicated in Table 20, for Clause 21, or the rated current of the component(s), whichever is the lower	See appended table 19.3	N/A
20	BREAKING CAPACITY		P
	Accessories have adequate breaking capacity		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked by testing:		P
	- socket-outlets;	See appended table 20	P
	- plugs with pins which are not solid	See appended table 20	N/A
	Multiple socket-outlets: test carried out on one socket-outlet of each type and current rating		P
	During the test: no sustained arcing occur		P
	After the test:		P
	- specimens show no damage impairing their further use;		P
	- entry holes for the pins not show any damage which may impair the safety		P

21	NORMAL OPERATION		P
	Accessories withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance checked by testing:		P
	- socket-outlets;	See appended table 21	P
	- plugs with resilient earthing socket-contacts;	See appended table 21	N/A
	- plugs with pins which are not solid	See appended table 21	N/A
	Test performed according to the procedure specified in Figure 43; point of Figure 43 at which the test program has begun (1, 2, 3) : 1		—
	Test current passed:		P
	- during each insertion and withdrawal of the plug ($I_n \leq 16A$)		P
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing ($I_n > 16A$)		N/A
	Multiple socket-outlets: test carried out on one socket-outlet of each type and current rating		P
	During the test: no sustained arcing occur		P
	After the test the specimens do not show:		P
	- wear impairing their further use;		P
	- deterioration of enclosures, insulating lining or barriers;		P
	- damage to the entry holes for the pins, that might impair proper working;		P
	- loosening of electrical or mechanical connections;		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- seepage of sealing compound		N/A

	Shuttered socket-outlets: gauges of figure 9 and 10 applied to the entry holes corresponding to live contacts do not touch live parts when they remain under the relevant forces	See appended table 21	P
	Temperature-rise test (requirements of clause 19)	See appended table 21	P
	Electric strength (sub-clause 17.2)	See appended table 21	P
	Pins which are not solid: test according to 14.2		N/A

22	FORCE NECESSARY TO WITHDRAW THE PLUG		P
	Construction of accessory does allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet in normal use		P
22.1	Verification of the maximum withdrawal force	See appended table 22	P
22.2	Verification of the minimum withdrawal force	See appended table 22	P

23	FLEXIBLE CABLES AND THEIR CONNECTIONS		P
23.1	Rewirable plugs and rewirable portable socket-outlets are provided with a cord anchorage		N/A
	Sheath of flexible cable is clamped within the cord anchorage		N/A
	In non-rewirable plugs and non-rewirable portable socket-outlets the cable is maintained in position and the terminations are relieved from strain and twisting		P
	Sheath of flexible cable is maintained inside the accessory		P
23.2	Pull and torque test		P
	Non-rewirable accessories:		P
	After the test: displacement ≤ 2 mm	See appended table 23.2	P
	No break in the electrical connections		P
	Rewirable accessories:		N/A
	After the test: displacement ≤ 2 mm	See appended table 23.2	N/A
	End of conductors not have moved noticeably in the terminals		N/A
	Rewirable accessories having rated current up to and including 16 A:		N/A
	Suitable for fitting with the appropriate cable as shown in table 19		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Type of flexible cable; number of conductors and nominal cross-sectional area (mm ²)		—
23.3	Non-rewirable plugs and non-rewirable portable socket-outlets are provided with a flexible cable complying with IEC 60227 or IEC 60245		P
	Flexible cables have the same number of conductors as there are poles in the plug or socket-outlet		P
	Conductor connected to the earthing contact is identified by the colour combination green/yellow		P
23.4	Non-rewirable plugs and non-rewirable portable socket-outlets: designed that the flexible cable is protected against excessive bending		P
	Guards of insulating material and fixed in reliable manner		P
	Flexing test (10.000 flexings)		P
	During the test: no interruption of the test current and no short-circuit between conductors	See appended table 23.4	P
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible	See appended table 23.4	P
24	MECHANICAL STRENGTH		P
	Accessories, surface mounting boxes, screwed glands and shrouds have adequate mechanical strength		P
24.1	Fixed socket-outlets, portable multiple socket-outlets and surface-type mounting boxes: hammer test described in IEC 60068-2-75 (test EHA), equivalent mass of 250 g	See appended table 24.1	P
	After the test: no damage, live parts no become accessible		P
24.2	Portable single socket-outlets and plugs: subjected to test Ec: Rough handling shocks, primarily for equipment-type specimens, procedure 2 of IEC 60068-2-31 (tumbling barrel); number of falls.....:		N/A
	After the test:		N/A
	- no part become detached or loosened;		N/A
	- pins no become so deformed that the plug cannot be introduced into a socket-outlet and also fails to comply with the requirements of 9.1 and 10.3;		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction		N/A
	The shutters of socket-outlets tested again according to Clause 21, from paragraph 19 up to paragraph 24 (only the tests of shutters)		N/A
24.3	Main parts of surface-type socket-outlets: first fixed to a cylinder of rigid steel sheet and then fixed to a flat steel sheet		N/A
	During and after the tests: no damage		N/A
24.4	Portable single socket-outlets, multiple socket-outlets and plugs (elastomeric or thermoplastic material): impact test, weight (1000 ± 2) g, height 100 mm (apparatus shown in fig. 27)		P
	Specimens placed in a freezer at (-15 °C ± 2) °C for at least 16 h. After the test: no damage		P
24.5	Portable single socket-outlets and plugs (elastomeric or thermoplastic material): compression test, 300 N for 1 min, position a) and b) (apparatus shown in fig. 8)		N/A
	After the test: no damage		N/A
24.6	Screwed glands of accessories having IP>20: torque test (1 min)		--
	- diameter of test rod (mm)		—
	- type of material (metal / moulded)		—
	- torque (Nm)		—
	After the test: no damage of glands and enclosures of the specimens		N/A
24.7	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in fig. 28)		N/A
	After the test: no damage of pins, insulating sleeve not have punctured or rucked up		N/A
24.8	Shuttered socket-outlets: mechanical test carried out on specimens submitted to the normal operation test according to clause 21		P
	Force (40 N / 75 N) applied for 1 min against the shutter of an entry hole by means of one pin (N) :	75N	—
	Pin did not come in contact with live parts		P
	After the test: no damage		P
24.9	Mechanical test for multiple portable socket-outlet: 8 falls on concrete floor with the specimens arranged as shown in figure 29		P
	Rewirable multiple socket-outlets: flexible cable of the smallest cross-sectional area specified in table 3		—
	After the test: no damage, no part have become detached or loosened		P
	Accessories having IP>X0 submitted again to the tests as specified in 16.2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The shutters of multiple socket-outlets tested again according to Clause 21, from paragraph 19 up to paragraph 24 (only the tests of shutters)		P
24.10	Plugs: pull test to verify the fixation of pins in the body of the plug (new specimens)		N/A
	Maximum withdrawal force (table 16) applied for 1 min on each pin in turn, after the specimen has been placed at $(70 \pm 2) ^\circ\text{C}$ for 1 h (N)		—
	After the test: displacement of pins in the body of the plug ≤ 1 mm (mm)		N/A
24.11	Barriers of portable socket-outlets having means for suspension on a mounting surface:		N/A
	Force applied for 10 s against the barrier by means of a cylindrical steel rod (1.5 times the maximum plug withdrawal force in 22.1, table 16) (N)		—
	Rod did not pierce the barrier		N/A
24.12	Portable socket-outlets having means for suspension on a mounting surface (pull test):		N/A
	Pull applied to the supply flexible cable for 10 s (force prescribed in 23.2 for checking the flexible cable anchorage) (N)		—
	During the test: no break of the means for suspension on a mounting surface		N/A
24.13	Portable socket-outlets having means for suspension on a mounting surface (pull test):		N/A
	Pull applied to the engagement face of the socket-outlet for 10 s (maximum withdrawal force specified, for the corresponding plug, in table 16) (N)		—
	During the test: no break of the means for suspension on a mounting surface		N/A
24.14	Forces necessary to retain or remove covers, cover-plates or parts of them (accessibility with the test finger to live parts)		N/A
24.14.1	Verification of the retention of covers or cover-plates (fixed socket-outlets)		N/A
	Force (40 N / 80 N) applied for 1 min perpendicular to the mounting surface (N)		—
	Covers or cover-plates did not come off		N/A
	Test repeated on new specimens with a sheet of hard material, $(1 \pm 0,1)$ mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates did not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates (fixed socket-outlets)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Force not exceeding 120 N applied 10 times perpendicular to the mounting / supporting surface: covers or cover-plates came off		N/A
	Test repeated on new specimens with a sheet of hard material, (1 ± 0,1) mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates came off		N/A
	After the test: no damage		N/A
24.14.3	Verification of the retention of covers or cover-plates (plugs and portable socket-outlets)		N/A
	Force 80 N applied for 1 min perpendicular to the mounting surface: covers, cover-plates or parts of them did not come off		N/A
	Test repeated with a force of 120 N:		N/A
	Rewirable plugs and rewirable portable socket-outlets: covers, cover-plates or parts of them came off but the specimen showed no damage		N/A
	Non-rewirable, non-moulded-on accessories: covers, cover-plates or parts of them came off but the accessories were permanently useless according to 14.1		N/A
24.15	Force necessary for covers or cover-plates 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 23)		N/A
24.14.1	Verification of the non-removal of covers or cover-plates		N/A
	Force (10 N / 20 N) applied for 1 min in direction perpendicular to the mounting surface (N)		—
	Covers or cover-plates did 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. 31): covers or cover-plates did not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		N/A
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates came 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. 31): covers or cover-plates came off		N/A
	After the test: no damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
24.16	Force necessary for covers or cover-plates to come off or not to come off (accessibility to insulating parts, earthed metal parts, live parts of SELV $\leq 25V$ a.c. or metal parts separated from live parts by creepage distances twice those according to table 23)		N/A
24.14.1	Verification of the non-removal of covers or cover-plates		N/A
	Force 10 N applied for 1 min in direction perpendicular to the mounting surface: covers or cover-plates did not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm $\pm$ 0,1 mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates did not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		N/A
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates came off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm $\pm$ 0.1 mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates came off		N/A
	After the test: no damage		N/A
24.17	Test with gauge of figure 7 applied according to figure 9 for verification of the outline of covers or cover-plates: distances between face C of gauge and outline of side under test, not decrease		—
24.18	Test with gauge according to figure 5 applied as shown in figure 11 (1 N): gauge not enter more than 1mm		—
24.19	Shroud of portable socket-outlets: compression test (20 $\pm$ 2) N at (25 $\pm$ 5) °C by means of the apparatus shown in figure 38		N/A
	After 1 min and while the shrouds are still under pressure the dimensions did comply with the appropriate standard sheet		N/A
	Test repeated with the specimen rotated 90 °		N/A
25	RESISTANCE TO HEAT		P
25.1	Specimens kept for 1 h in a heating cabinet at (100 $\pm$ 2) °C for 1 h		P
	During the test: no change impairing their further use and sealing compound, if any, not flow		P
	After the test:		P
	- no access to live parts with probe B of IEC 61032 applied with a force not exceeding 5 N		P
	- markings still legible		P

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Clause	Requirement + Test	Result - Remark	Verdict
25.2	Parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position, as well as parts of the front surface zone, 2 mm wide, surrounding the phase and neutral pin entry holes: ball-pressure test at $(125 \pm 2)^{\circ}\text{C}$ for 1 h	See appended table 25.2	P
25.3	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 25.3	P
25.4	Portable accessories: compression test (20 N) at $(80 \pm 2)^{\circ}\text{C}$ for 1 h by means of the apparatus shown in figure 38		P
	After the test: no damage		P

26	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
26.1	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
	Thread-cutting screws intended to be used during installation: captive		N/A
	Screws or nuts which transmit contact pressure made of metal and in engagement with a metal thread		P
	Threaded part torque test	See appended table 26.1	P
26.2	Screws in engagement with a thread of insulating material: correct introduction into the screw hole or nut ensured		N/A
26.3	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
	Connections made by insulation piercing of tinsel cord reliable		N/A
26.4	Screws and rivets locked against loosening and/or turning		P
26.5	Current-carrying parts (including earthing terminals) have 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 0.09 % carbon		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	- 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
	- 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		P
	Metals having a great difference of electrochemical potential: not used in contact with each other		P
26.6	Contacts subjected to a sliding action are of metal resistant to corrosion		P
26.7	Thread-forming screws and thread-cutting screws are not used for the connection of current-carrying parts		N/A
	Thread-forming screws and thread-cutting screws used to provide earthing connection: it is not necessary to disturb the connection and at least two screws are used for each connection		N/A

27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		P
27.1	Creepage distances, clearances and distances through sealing compound are not less than the values shown in table 23	See appended table 27.1	P
27.2	Insulating sealing compound does not protrude above the edge of the cavity in which it is contained		N/A
27.3	Surface-type socket-outlets do not have bare current-carrying strips at the back		N/A

28	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING		P
28.1	Resistance to abnormal heat and to fire		P
28.1.1	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11	See appended table 28.1.1	P
28.1.2	Plugs with pins provided with insulating sleeves:		N/A
	Test temperature maintained for 3 h by means of the apparatus shown in figure 40 at (120 ± 5) °C / (180 ± 5) °C		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Impact test according to sub-clause 30.4 (mass 100 g, height 100 mm, 4 impacts): no cracks of the insulating sleeves		N/A
28.2	Resistance to tracking		N/A
	Parts of insulating material retaining live parts in position of accessories having IP>X0: of material resistant to tracking		N/A
	Tracking test at 175 V with solution A of IEC 60112	See appended table 28.2	N/A
29	RESISTANCE TO RUSTING		P
	Ferrous parts protected against rusting		P
	Test made after having removed all grease using a suitable degreasing agent: 10 min 10 % solution of ammonium chloride, 10 min in a box with air saturated with moisture and 10 min at (100 ± 5) °C:		P
	No signs of rust		P
30	ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES		N/A
30.1	Pressure test at high temperature		N/A
	Apparatus shown in figure 41, with the test specimen in position, maintained for 2 h at (200 ± 5) °C. Force applied through the blade: 2,5 N		N/A
	Thickness of the insulation measured: before the test (mm); after the test (mm)		—
	Thickness remaining at the point of impression is not reduced by more than 50 % of its original value measured at the start of the test: percentage value (%)		N/A
30.2	Static damp heat test		N/A
	Set of 3 specimens submitted to two damp heat cycles in accordance with IEC 60068-2-30 (variant 2 with a temperature of 40 °C).		N/A
	After the test:		N/A
	- insulation resistance and electric strength test (clause 17)		N/A
	- abrasion test (sub-clause 24.7)		N/A
30.3	Test at low temperature		N/A
	Set of 3 specimens maintained at (-15 °C ± 2) °C for 24 h		N/A
	After the test:		N/A
	- insulation resistance and electric strength test (clause 17)		N/A
	- abrasion test (sub-clause 24.7)		N/A
30.4	Impact test at low temperature		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Specimens maintained at (-15 °C ± 2) °C for 24 h subjected to 4 impacts (mass 100 g, height 100 mm) by means of the apparatus shown in figure 42 rotating the specimen through 90 ° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A

31	EMC requirements		N/A
31 .1	Immunity	no test is required	N/A
31 .2	Emission	no test is required	N/A
32	Electromagnetic fields (EMF) requirements	no test is required	N/A



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Clause	Requirement + Test	Result - Remark	Verdict

12.2.5	TABLE: test with apparatus shown in figure 11 (screw-type terminals)			N/A
	rated current (A)	--		—
	type of conductors	rigid solid / rigid stranded / flexible		—
	smallest/largest cross-sectional area per table 3 (mm ²)	--		—
	number of conductors	--		—
	nominal diameter of thread (mm); torque per table 6 (Nm)	--		—
Cross-sectional area (mm ²)	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks
--	--	--	--	--
--	--	--	--	--
supplementary information:				

12.2.6	TABLE: pull test (screw-type terminals)			N/A
	rated current (A)	--		—
	smallest/largest cross-sectional area per table 3 (mm ²)	--		—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm)	--		—
Cross-sectional area (mm ²)	Number of conductors	Type of conductors (rigid solid / rigid stranded / flexible)	Pull per table 4 applied for 1 min (N)	Remarks
--	--	--	--	--
--	--	--	--	--

supplementary information:

12.2.7	TABLE: tightening test (screw-type terminals)			N/A
	rated current (A)	--		—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm)	--		—
Largest cross-sectional area per table 3 (mm ²)	Permissible number of conductors ⁽¹⁾	Type of conductors (rigid solid / rigid stranded / flexible)	Number of wires and nominal diameter of wires per table 5	Remarks
--	--	--	--	--
--	--	--	--	--

supplementary information:

(1) terminals intended for looping-in 2 or 3 conductors

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Clause	Requirement + Test			Result - Remark	Verdict
12.3.10	TABLE: mechanical strength test (screwless-type terminals)				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 11					N/A
Cross-sectional area (mm ²)	Type of conductor (solid / rigid stranded / flexible	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks
--	--	--	--	--	--
--	--	--	--	--	--
supplementary information:					

12.3.11	TABLE: electrical and thermal strength test (screwless-type terminals)			N/A
Test a)	Test carried out for 1 h connecting rigid solid conductors:			N/A
	test current per table 10 (A)			--
	nominal cross-sectional area (mm ²)			--

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Clause	Requirement + Test	Result - Remark	Verdict

Screwless terminal number	Voltage drop (mV)	Required voltage drop (mV)
1	--	≤ 15
2	--	≤ 15
3	--	≤ 15
4	--	≤ 15
5	--	≤ 15

Test b)	Temperature cycles test carried out on terminals subjected to Test a):		N/A
	test current per table 10 (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 nd 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 nd cycle	--	--	--	--	--	--

12.3.10	TABLE: mechanical strength test (screwless-type terminals)		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 11				N/A
Cross-sectional area (mm ²)	Type of conductor (solid / rigid stranded / flexible)	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (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 12a)						N/A
	Test carried out connecting rigid solid copper conductors:						N/A
	test current (A) (equal rated current)	--					—
	required voltage drop (mV)	≤ 25 mV					—
Type of conductor	Smallest			Largest			Remarks
cross-sectional area per table 11 (mm ²)	--			--			--
force per table 12 (N)	--			--			--
screwless terminal number	1	2	3	1	2	3	--
starting point (X = deflection original point)	X	X+10°	X+20°	X	X+10°	X+20°	--
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:							

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Clause	Requirement + Test	Result - Remark	Verdict

14.22	TABLE: Components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Stan-dard	Mark(s) of conformity ¹⁾	
Plug, non rewirable	Cixi Changtong Wire & Cable Co., Ltd.	CT-01	16A 250V~	DIN VDE 0620-2-1 (VDE 0620-2-1):2016-01 DIN VDE 0620-2-1/A1 (VDE 0620-2-1/A1):2017-09	VDE 40025654	
optional	Ningbo Boyang Lighting Co., Ltd.	CT7	16A 250V~	DIN VDE 0620-1:2016/A1:2017 DIN VDE 0620-2-1:2016/A1:2017	TUV: B059966 0316	
optional	Ningbo Xuanhua Electric Co., Ltd.	XH-03	16A 250V~	--	VDE 40019691	
optional	CIXI CITY POWER WIRE FACTORY	CL003	16A 250V~	--	VDE 40029746	
Flexible cable	Cixi Changtong Wire & Cable Co., Ltd.	H05VV-F	3G1.5MM2	DIN EN 50525-2-11 (VDE 0285-525-2-11):2012-01; EN 50525-2-11:2011	VDE 40023245	
optional	Ningbo Boyang Lighting Co., Ltd.	H05VV-F	3G1.5MM2	--	VDE 40022234	
optional	Ningbo Xuanhua Electric Co., Ltd.	H05VV-F	3G1.5MM2	--	VDE 40016531	
optional	CIXI CITY POWER WIRE FACTORY	H05VV-F	3G1.5MM2	--	VDE 40007933	
Circuit breaker	Ningbo Shixin Electric Appliances Co.,Ltd.	ST-101E	16A 250V~	EN 60934	TUV: R 50157033	
Switch	Cixi Zhefeng Electric Appliance Co.,Ltd.	HW-4	16A 250V~	EN IEC 61058-1:2018 EN 61058-1-1:2016	TUV: B0767080011	
Enclosure and live part carrier	Cixi Mingjue Electric Appliance Co.,Ltd.		PC(All colors)	IEC60884	Test with appliance	
Shutter body	Cixi Mingjue Electric Appliance Co.,Ltd.		PC	IEC60884	Test with appliance	
Shutter box	Cixi Mingjue Electric Appliance Co.,Ltd.		PC	IEC60884	Test with appliance	

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Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical Data	Stan-dard	Mark(s) of conformity1)
Surge PCB	Cixi Mingjue Electric Appliance Co.,Ltd.	LF7835		--	Test with appliance
LED indicator	Cixi Mingjue Electric Appliance Co.,Ltd.	ZZDZ-412		--	Test with appliance
USB charger	Cixi Mingjue Electric Appliance Co.,Ltd.	ZZDZ-452	DC 5V 2.1A	IEC 62368-1: 2018	By UNI Test report UNIA22042911 SR-01
Insulation board	Cixi Ciwei Plastic products factory		PVC		
Aluminium housing	Yuyao Keteng Aluminum		ALUMINIUM		

17.1	TABLE: insulation resistance			P
Item per 17	test voltage applied between:	measured (MΩ)	required (MΩ)	
a)	between all poles connected together and the body, the measurement being made with a plug in engagement	>100MΩ	≥5MΩ	
b)	between each pole in turn and all others, these being connected to the body with a plug in engagement;	>100MΩ	≥5MΩ	
supplementary information:				

17.2	TABLE: electric strength			P
	rated voltage (V)	250V~		—
item per 17	test voltage applied between:	test voltage (V)	flashover / breakdown (kV)	
a)	between all poles connected together and the body, the measurement being made with a plug in engagement	2000V	No	
b)	between each pole in turn and all others, these being connected to the body with a plug in engagement;	2000V	No	
supplementary information:				

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
19.1	TABLE: temperature rise test for socket-outlets and plugs		P
	rated current of accessory (A)	16A	—
	type of accessory (non-rewirable / rewirable)	non-rewirable	—
	nominal cross-sectional area per table 15 (mm ²)	1.5	—
	type of conductors (rigid solid / rigid stranded / flexible).....	Flexible	—

	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8				--		—
specimen	type of flexible cable	number of conductors and nominal cross-sectional	test circuit (L-L/L-N/L-E)	test current (table 20) for 1 h	measured ΔT (K)	allowed ΔT	ΔT of external parts of insulating material (25.3)(K)
#1	60227 IEC	3G1.5	L-N/L-E	20	32.1/30.9	45	11.2
#2	60227 IEC	3G1.5	L-N/L-E	20	32.3/31.6	45	11.4
#3	60227 IEC	3G1.5	L-N/L-E	20	31.5/29.7	45	11.3

supplementary information:

(1) Non-rewirable accessories

19.2	TABLE: temperature rise test for fixed socket-outlets of a socket-outlet and fused plug system						N/A		
	rated current of accessory (A)				--		—		
	type of accessory (non-rewirable / rewirable)				--		—		
	nominal cross-sectional area per table 15 (mm ²) :				--		—		
	type of conductors (rigid solid / rigid stranded / flexible).....				--		—		
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8				--		—		
	Test a) single socket-outlet						N/A		
specimen	type of flexible cable	number of conductors and nominal cross-sectional area	test circuit (L-L/L-N/L-E)	70% of test current (table 20) for 1 h	30% of test current (table 20) for 1 h	test current (table 20) for 1 h	measured ΔT (K)	allowed ΔT	ΔT of external parts of insulating material (25.3)(K)

IEC 60884-1									
Clause	Requirement + Test					Result - Remark			Verdict
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
supplementary information: (1) Non-rewirable accessories									
	Test b) multiple socket-outlet								N/A



IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict

specimen	type of flexible cable (1)	number of conductors and nominal cross-sectional area	test circuit (L-N)	70% of test current (table 20) for 1 h (test)	30% of test current (table 20) for 1 h (test)	test current (table 20) for 1 h	measured ΔT (K)	allowed ΔT (K)	ΔT of external parts of insulating material
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
supplementary information: (1) Non-rewirable accessories									

19.3	TABLE: temperature rise test for plugs and portable socket-outlets with incorporated components							N/A
	rated current of accessory (A)					16A		—
	type of accessory (non-rewirable / rewirable)					non-rewirable		—
	nominal cross-sectional area per table 15 (mm ²)					--		—
	type of conductors (rigid solid / rigid stranded / flexible).....					--		—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8					--		—
	Test for Portable socket-outlets and rewirable plugs with incorporated components							N/A
specimen	type of flexible cable (1)	number of conductors and nominal cross-sectional area	test circuit (L-N)	Test current (table 20), Clause 19 for 1 h (components short circuited)	Test current is rated current of the portable accessory or the rated current of the component	measured ΔT (K)	allowed ΔT	ΔT of external parts (25.3)(K) (2)
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
supplementary information: (1) Non-rewirable accessories ; (2) Metal parts 30 K ; non-metallic parts 40K								
	Test for non-rewirable plugs with incorporated components							N/A

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict

specimen	type of flexible cable (1)	number of conductors and nominal cross-sectional area	test circuit (L-I/I)	Test current is equal to the test current for the combination of the plug and the cable as	Test current is equal to the test current for the combination of the plug and the cable as indicated in Table 20.	measured ΔT (K)	allowed ΔT (K)	ΔT of external parts (25,3)(K) (2)
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--

supplementary information:

(1) Non-rewirable accessories; (2) Metal parts 30 K ; non-metallic parts 40 K

20	TABLE: breaking capacity							P	
	rating of accessory (A/V):				16A/250V~			—	
	type of accessory (non-rewirable / rewirable)				non-rewirable			—	
	type of flexible cable (non-rewirable accessories):				60227 IEC 53			—	
	number of conductors and nominal cross-sectional area (mm ²) (non-rewirable accessories)				3G1.5mm ²			—	
	nominal cross-sectional area per table 15 (mm ²):				:--			—	
	type of conductors (rigid solid / rigid stranded / flexible).....:				--			—	
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8				--			—	
	rate of operation (strokes per minute):				30			—	
specimen	test plug (for each type and current rating of socket-outlet)		test voltage (1.1 Vn) (V)	test current (1.25 In) cos φ 0.6 (A)	number of strokes (plugs only)	number of strokes, with shutters – with current (1)	number of strokes, without shutters	remarks	
	pin dimensions (mm)	pin spacing (mm)							
#1	Φ4.81	14.27	275	20	--	100	--	P	--
#2	Φ4.80	14.27	275	20	--	100	--	P	--
#3	Φ4.80	14.27	275	20	--	100	--	P	--

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:

(1) starting point 1 or 3 of Figure 43

(2) starting point 2 of Figure 43

21	TABLE: normal operation								P
	rating of accessory (A/V)				16A/250V~				—
	type of accessory (non-rewirable / rewirable):				non-rewirable				—
	type of flexible cable (non-rewirable accessories)				60227 IEC 53				—
	number of conductors and nominal cross-sectional area (mm ²) (non-rewirable accessories)				3G1.5mm ²				—
	nominal cross-sectional area per table 15 (mm ²)				:--				—
	type of conductors (rigid solid / rigid stranded / flexible).....				--				—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8				--				—
	rate of operation (strokes per minute)				30				—
specimen	test plug (for each type and current rating of socket- outlet)		test voltage (Vn) (V)	test current (table 20), cos φ 0.8 (A)	number of strokes (plugs only)	number of strokes, with shutters – with current (1)	number of strokes, without shutters –	number of strokes, with shutters – without	
	pin dimensions (mm)	pin spacing (mm)							
#1	Φ4.81	14.27	250	16	--	10000	--	--	P
#2	Φ4.80	14.27	250	16	--	10000	--	--	P
#3	Φ4.80	14.27	250	16	--	10000	--	--	P
	TABLE: test for shuttered socket-outlets								P
specimen	Gauge of figure 9, applied with a force of 20 N, for approximately 5 s, successively in three directions				Steel gauge of figure 10, applied with a force of 1 N for approximately 5 s, in three directions				P
#1	Not contact with live parts				Not contact with live parts				P
#2	Not contact with live parts				Not contact with live parts				P
#3	Not contact with live parts				Not contact with live parts				P
19	TABLE: temperature rise test								P

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict

specimen	test circuit (L-L/L-N/L-E)	test current (table 20 for clause 21) for 1 h (A)	measured dT (K)	allowed dT (K)	
#1	L-N/L-E	16	33.5/32.1	45	P
#2	L-N/L-E	16	32.9/31.6	45	P
#3	L-N/L-E	16	33.2/30.7	45	P
17.2	TABLE: electric strength				P
specimen	item per	test voltage applied between:	test voltage (V)	flashover / breakdown	
#1, #2, #3	a)	between all poles connected together and the body, the measurement being made with a plug in engagement	1500V	No	
	b)	between each pole in turn and all others, these being connected to the body with a plug in	1500V	No	
supplementary information: (1) starting point 1 or 3 of Figure 43 (2) starting point 2 of Figure 43 (3) starting point 1 or 2 of Figure 43					

22	TABLE: force necessary to withdraw the plug				P
	Rated current (A)		16A		—
	Number of poles		2P+E		—
22.1	Verification of the maximum withdrawal force				P
specimen	socket-outlets (multi-pin gauge)		plugs with resilient earthing contact assemblies (single-pin gauge)		
	maximum withdraw	the test plug did not remain in the socket- outlet (Y/N)	maximum withdraw	the test pin gauge did not remain in the contact	
#1	54	Y	--	--	P
#2	54	Y	--	--	P
#3	54	Y	--	--	P
22.2	Verification of the minimum withdrawal force				P
	socket-outlets (single-pin gauge)		plugs with resilient earthing contact assemblies (single-pin gauge)		

IEC 60884-1					
Clause	Requirement + Test			Result - Remark	Verdict
specimen	minimum withdrawal force (N)	the test pin gauge did not fall from each individual contact-assembly within 30 s (Y/N)	minimum withdrawal force (N)	the test pin gauge did not fall from each individual earthing contact-assembly within 30 s (Y/N)	
#1	2.0	Y (Not fall)	--	--	P
#2	2.0	Y (Not fall)	--	--	P
#3	2.0	Y (Not fall)	--	--	P
supplementary information:					

23.2	TABLE: pull and torque test					P
	rating of accessory (A)			16A		—
	type of accessory (non-rewirable / rewirable) ...			non-rewirable		—
	smallest/largest cross-sectional area per table 17 (mm ²) (rewirable accessories)			--		—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm) (rewirable accessories)			--		—
specimen	type of flexible cable	number of conductors and nominal cross-sectional area	pull (100 times) (N)	torque (1 min) as specified in table 18 (Nm)	displacement (mm)	
#1	60227 IEC	3G1.5	60	0.25	Max. 0.2	P
#2	60227 IEC	3G1.5	60	0.25	Max. 0.3	P
#3	60227 IEC	3G1.5	60	0.25	Max. 0.2	P
supplementary information:						

23.4	TABLE: flexing test					P
	rated current (A)			16A		—
specimen	type of flexible cable	number of conductors and nominal cross-sectional area	test current (A)	mass (N)		
#1	60227 IEC	3G1.5	16	20		P
#2	60227 IEC	3G1.5	16	20		P
#3	60227 IEC	3G1.5	16	20		P
supplementary information:						

24.1	TABLE: impact test				P
part of enclosure tested per table 21 (A, B, C, D)	blows per part	height of fall (mm)	comments		

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
A	5 times	80	Meet the standards
D	4 times	160	Meet the standards
supplementary information:			

25.2	TABLE: ball pressure test of insulating materials			P
	allowed impression diameter (mm)	≤ 2 mm		—
part under test		test temperature (°C)	impression diameter (mm)	
Socket base for retaining live parts		125	0.9	
supplementary information:				

25.3	TABLE: ball pressure test of insulating materials			P
	allowed impression diameter (mm)	≤ 2 mm		—
part under test		test temperature	impression diameter	
Shutter / Enclosure		70	0.6	
supplementary information: (1) (70 ± 2) °C / (40 ± 2) °C + highest temperature rise determined during the test of clause 19				

26.1	TABLE: threaded part torque test					P
threaded part identification		diameter of thread (mm)	column number	applied torque	times (5/)	no damage
Assembly screw		3.0	2	0.5	10	no
supplementary information:						

27.1	TABLE: creepage distances, clearances and distances through sealing compound						P
	rated voltage (V)					250V~	—
item per table	creepage distance dcr, clearance cl and distance through sealing compound dtscat/of:	required cl (m)	cl (mm)	required dcr (m)	dcr (m)	required dtsc (mm)	dtsc (m)
1; 6	between live parts of different polarity	≥3	3.8	≥3	3.8	--	--

IEC 60884-1							
Clause	Requirement + Test	Result - Remark				Verdict	
2; 7	between live parts and accessible surface of parts of insulating material	≥3	>3 (by gau	≥3	>3 (by gau	--	--
2; 7	between live parts and earthed metal parts including parts of earthing circuit	≥3	>3 (by gau	≥3	>3 (by gau	--	--
2; 7	between live parts and external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing	≥3	>4 (by gau ge)	≥3	>4 (by gau ge)	--	--
supplementary information:							

28.1.1	TABLE: glow-wire test					P
part under test	material designation	test temperature (°C)	visible flame and sustained	flame and glowing extinction time	ignition of the tissue paper (Y/N)	
Socket base for retaining live parts	/	750	N	-	N	
Shutter body, Enclosure	/	650	N	-	N	
supplementary information:						

28.2	TABLE: resistance to tracking			N/A
	number of drops	--		—
part under test		material designation	test voltage	flashover / breakdown
--		--	175	--
supplementary information:				

Attachment No.1		IEC 60884-2-7	
Clause	Requirement +Test	Result - Remark	Verdic

8	MARKING		P
8.1	For cord extension sets, the marking of the manufacturer's or responsible		P
	– in the case of multiple portable socket-outlets or when there is an overcurrent protective device, the power in watts.		P
	The marking for power shall be completed by the word MAX. This marking shall be durable and easily legible with normal or corrected vision, without additional magnification.		P

9	CHECKING OF DIMENSIONS		N/A
	The clause of Part 1 is not applicable		—

10	PROTECTION AGAINST ELECTRIC SHOCK		P
	IEC 60884-1 :2022, Clause 10 is not applicable, see Clause 4.		P
10.101	Accessibility of live parts during normal use		P
	Cord extension sets shall be so designed and constructed that after they are wired and assembled as for normal use, live parts are not accessible, even after removal of parts which can be removed without the use of a tool.		P
	An electrical indicator with a voltage between 40 V and 50 V shall be used to ensure that there		P

11	PROVISION FOREARTHING		N/A
	The clause of Part 1 is not applicable		—

12	TERMINALS AND TERMINATIONS		N/A
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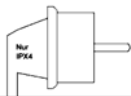
	The clause of Part 1 is not applicable		—
13	CONSTRUCTION OF FIXED SOCKET-OUTLETS		N/A
	The clause of Part 1 is not applicable		—

14	CONSTRUCTION OF CORD EXTENSION SET		P
14.101	Additional requirements for cord extension sets:		P

Attachment No.1		IEC 60884-2-7	
Clause	Requirement +Test	Result - Remark	Verdic
	Socket-outlets to be used in cord extension sets shall have shutters.		P
	Plugs and socket-outlets shall comply with the relevant part of the IEC 60884 series.		P
	Supply flexible cables shall comply with the IEC 60227 series (for polyvinyl chloride insulated cables) or the IEC 60245 series (for rubber insulated cables).		P
	Each pole in the socket-outlet shall be connected to the corresponding pole of the plug.		P
	Compliance is checked by inspection		P
14.102	The type, length of the flexible cable and nominal cross-sectional area of the conductors of cord extension sets comply with Table 101.	60227 IEC 53 3x1.5 mm ²	—
	Compliance is checked by inspection and measurement		P
14.103	Rated voltage of cord extension set components		P
	The rated current of the plug of cord extension set protected against overload, not lower than the rated current of the protective overcurrent		P
	Rated current of the plug, for a cord extension set with a multiple portable socket-outlet and not incorporating a protective overcurrent		N/A
	Compliance is checked by inspection		P
1 4.104	Plug rating in a cord extension set		P
	The rated voltage of the cable not less than the rated voltage of the plug and socket-outlet		P
	Compliance is checked by inspection		P
14.105	Appearance of cord extension sets		
	Cord extension sets shall not have an enclosure that is shaped or decorated like a toy.		
15	INTERLOCKED SOCKET-OUTLETS		N/A
	The clause of Part 1 is not applicable		—
16	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY		P

Attachment No.1		IEC 60884-2-7	
Clause	Requirement +Test	Result - Remark	Verdic
	The protection degree of the cord extension set is the same as the lowest protection degree of the plug and the portable socket	IP20	P
	Compliance is checked by inspection		P
17	INSULATION RESISTANCE AND ELECTRIC STRENGTH		N/A
	The clause of Part 1 is not applicable		—
18	OPERATION OF EARTHING CONTACTS		N/A
	The clause of Part 1 is not applicable		—
19	TEMPERATURE RISE		N/A
	The clause of Part 1 is not applicable		—
20	BREAKING CAPACITY		N/A
	The clause of Part 1 is not applicable		—
21	NORMAL OPERATION		N/A
	The clause of Part 1 is not applicable		—
22	FORCE NECESSARY TO WITHDRAW THE PLUG		N/A
	The clause of Part 1 is not applicable		—
23	FLEXIBLE CABLES AND THEIR CONNECTIONS		N/A
	The clause of Part 1 is not applicable		—
24	MECHANICAL STRENGTH		N/A
	The clause of Part 1 is not applicable		—
25	RESISTANCE TO HEAT		N/A
	The clause of Part 1 is not applicable		—
26	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		N/A
	The clause of Part 1 is not applicable		—
27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		N/A
	The clause of Part 1 is not applicable		—

Attachment No.1		IEC 60884-2-7	
Clause	Requirement +Test	Result - Remark	Verdic
28	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING		N/A
	The clause of Part 1 is not applicable		—
29	RESISTANCE TO RUSTING		N/A
	The clause of Part 1 is not applicable		—
30	ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES		N/A
	The clause of Part 1 is not applicable		—
31	EMC requirements		N/A
	The clause of Part 1 is applicable		—
32	Electromagnetic fields (EMF) requirements		N/A
	The clause of Part 1 is applicable		—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement + Test	Result - Remark	Verdic
8	MARKING		—
	The legal requirements for the marking of products are to considered. (GPSG)		P
8.1	Plugs and portable socket outlets marked with:		—
	- rated current (A)	16A	P
	- rated voltage (V)	250V	P
	- symbol for nature of	~	P
	- manufacturer's or responsible vendor's name or trade mark in accordance with the GPSG		P
	- type reference, that may be a catalogue number :	See copy of marking plate	P
	- symbol for degree of protection (first digit)	IP20	N/A
	- symbol for degree of protection (second digit)		N/A
	- Rated value and type of replaceable		N/A
	Plugs or socket-outlets, that is part of an equipment need not carry this marking if the equipment is marked with the rating, manufacturer and type.		P
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
8.3	Not apply		—
8.4	Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible when assembled and wired.		P
	Plugs and portable socket-outlets for equipment of class II not marked with the symbol for class II construction		N/A
	Portable socket outlets with IP-Code IPX4 shall be marked with the following symbol :		N/A
8.5	Neutral terminals: N..... :		N/A
	Earthing terminals: [earth symbol 8.2] :		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 portable socket- outlet:		—
	- clearly identified unless their purpose is self evident,		N/A
	- indicated in a wiring diagram fixed to the accessory		N/A
	Identification of accessory terminals may be achieved by:		—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	- their marking with graphical symbols according to EN 60147 or colours and/or alphanumeric system,		N/A
	- their physical dimension or relative location		N/A
	Leads of indicator lamps are not to be considered conductors for the purpose of this		N/A
8.6	Not apply		—
8.7	Not apply		—
8.8	Marking shall be durable and if possible not smaller than 3 mm. Clearly readable without visual aids. Test: 15 s with water and 15 s with petroleum spirit.		P
8.9	Portable Multiple socket-outlets and adaptors must have the following warnings on the equipment or in the package (Text or pictograms):		P
	-For portable multiple outlets: - Do not connect after each other (Nicht hintereinander stecken) - Do not cover when in		N/A
	-For portable multiple outlets with functional switch, additionally: - To disconnect Voltage pull the plug. (Spannungsfrei nur bei gezogenem		P
	For intermediate adaptors: - Do not connect after each other (Nicht hintereinander		N/A
	- Portable multiple outlets and extensions cords shall be provided with information about the intended environment		P
8.10	Units intended for installation shall be marked on the smallest closed selling unit with the note according to Appendix E		N/A
9	CHECKING OF DIMENSIONS		—
9.1	Plugs and portable socket-outlets comply with the appropriate standard sheets:		P
	DIN49406(series),DIN49437, DIN49440-1, DIN49440-2, DIN49440-3, DIN49440-4, DIN49440-6, DIN49441(series), DIN49442, DIN 49443, DIN 49445, DIN49446, DIN 49447, DIN 49448, DIN 49464.	DIN 49440-1	P
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Compliance checked by measurement and/or by means of gauges with manufacturing tolerances as shown in table 2, unless otherwise specified. The most unfavourable dimension of the standard sheets shall be used for the gauges.		P
	Plugs and portable socket outlets to the standard sheets in 9.1 shall be tested with the gauges L1 to L9.		P
	Portable socket-outlets are subjected, before the above checking, to 10 insertions and withdrawals of a plug complying with the corresponding standard sheet having the maximum pin dimensions.		P
9.2	It shall not be possible to engage a plug with:		—
	- a socket-outlet or portable socket-outlet having a higher voltage rating or a lower current		P
	- a socket-outlet or portable socket-outlet with a different number of live poles is permissible for socket-outlets specially designed for engagement with plugs of a lower number of poles provided that no dangerous situation can arise;		P
	- a socket-outlet or portable socket-outlet with earthing contact (plug for class 0 equipment).		P
	Engagement of a plug for class 0 or class I equipment with a portable socket-outlet designed to accept plugs for class II equipment, not possible		P
	Test: inspection or testing with gauges according to the dimensions in the standard sheets.		P
	Impossibility of insertion checked by applying the gauge L11, for 1 min, with a force of:		—
	- 150 N (rated current ≤ 16A);		P
	- 250 N (rated current > 16A)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 ± 2 °C		P
9.3	Plugs or portable socket outlets, building a part of a product (for example timer, lawn mower mounted plugs, direct plug-in power supplies and so on) shall comply with the dimensions of the standard sheets.		P
	Additional parts that affect the dimensions of the standard sheets (e.g. flat stick in disk) are not		P

10	PROTECTION AGAINST ELECTRIC SHOCK		—
10.1	Portable socket-outlets: live parts not accessible		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Live parts of plugs: not accessible when the plug is in partial or complete engagement with a portable socket- outlet		P
	Test with standard test finger shown in figure 2 of DIN 61032(VDE0470-2).		P
	Portable socket-outlets with elastomeric or thermoplastic material: additional test carried out at $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ with a straight unjointed test finger (75 N for 1 min)		P
	During the test: portable socket-outlets not deform and no live parts accessible		P
	Plugs and portable socket-outlets pressed with a force of 150 N for 5 min as shown in figure 8: specimens not show deformation 15 min after.		P
10.2	Accessible parts (with exception of small screws and the like for fixing bases and covers or cover plates and grounding): made of insulating material		P
	Cover or cover plates and accessible part of plugs and table-outlets: made of metal if the requirements of		N/A
10.2.1	Metal covers or cover plates protected by supplementary insulation made by insulating linings or insulating barriers		N/A
	Insulating linings or insulating barriers cannot be removed without being permanently		N/A
	Insulating linings or insulating barriers cannot be replaced in an incorrect position and, if they are omitted, accessories are rendered inoperable or manifestly incomplete		N/A
	There is no risk of accidental contact between live parts and metal covers or cover plates		N/A
	For the case of single pole insertion the requirement in 10.3 applies.		N/A
10.2.2	Metal covers or cover plates automatically connected, through a low-resistance connection, to the earth during fixing.		N/A
	The Creepage distances and the clearances between the live pins of a plug when fully inserted and the earthed metal cover of a portable socket-outlet shall comply with item 2 and 7 of table 23 respectively; in addition for single pole insertion the requirements of		N/A
	Compliance shall be checked by the test of 11.5		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
10.3	Connection between a pin of a plug and a live socket-contact of a portable socket-outlet not possible while any other pin is accessible.		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P
	Portable socket-outlets with enclosure or bodies of rubber or polyvinyl chloride: test carried out with gauge 10 with a force of 75 N for 1 min		N/A
10.4	External parts of plugs and portable socket-outlets made of insulating material. Exception is plugs and table socket-outlets		P
	Overall dimensions of rings around pins not exceed 8 mm concentric with respect to the pin		N/A
10.5	Shuttered portable socket-outlets: live parts not accessible, without a plug in engagement, with the gauge 13.		P
	Live contacts automatically screened when the plug is withdrawn		P
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		P
	Gauge 13 applied to the entry holes corresponding to live contacts with a force up to 1 N in three straight movements shall not touch live parts; portable socket-outlets with a plug partially inserted are checked with the test finger.		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P
	Shutters shall not interfere the insertion of a plug in an unacceptable way. The opening force of the shutter shall not exceed 30N. Testing is done with the gauges of 19a or 19b. The gauge is to arrange movable		P
10.6	Earthing contacts of a portable socket-outlet designed that they cannot be deformed by the		P
10.6.1	The portable socket-outlet is placed with the outlet contacts in vertical position. Gauge 14 inserted into the portable socket-outlet with a force of 150 N for 1 min. This test is conducted on new samples		—
	After this test: portable socket-outlet still comply with the requirements of clause 9		P
10.6.2	Side PE contacts are loaded with a torque of 100Ncm) 1 min. With the device figure 43. After this tests probe 4 must be possible to insert. This test is conducted on new samples		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
10.7	Portable socket-outlet with increased protection live parts not accessible		P
	Gauge 13 applied with a force of 1 N on all accessible surfaces shall not touch live parts		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P

11	PROVISION FOR EARTHING		—
11.1	Earth connection made before the current-carrying contacts of the plug become live		P
	Current-carrying pins shall separate before the earth connection is broken		P
11.2	Earthing terminals of rewirable plugs and portable socket-outlets comply with clause 12		N/A
	Earthing terminals of the same size as the corresponding terminals for the supply		N/A
	Earthing terminals of rewirable plugs and portable socket-outlets: internal		N/A
	Parts of earthing circuit in one piece or reliably connected by riveting, welding, or	Soldering	P
11.3	Not apply		—
11.4	Portable socket-outlets, having an IP code higher than IPX0, with an enclosure of insulating material and more than one cable inlet, shall be provided with an additional internal earthing terminal for the continuity of the earthing circuit, or		N/A
	In case of sufficient space for an unsecured terminal that permits the connection of an incoming and outgoing earthing conductor.		N/A
	In the case of an unsecured terminal the requirement in		N/A
	Test for the requirements 11.2 to 11.4 : inspection and tests in clause 12 and in addition for unsecured terminals a connection test with the type of terminal specified by the manufacturer.		N/A
11.5	Connection between earthing terminal and accessible metal parts: of low resistance		P
	Test:		—
	Test current equal to 1,5 times the rated current or 25 A a.c.(A)	25A	—
	Resistance not exceed 0,05 Ω (Ω)	0.01Ω	—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic

12	TERMINALS AND TERMINATIONS		—
12.1	General		—
12.1.1	Rewirable plugs and portable socket-outlets provided with terminals with screw clamping		N/A
	Pre-soldered flexible conductors used: pre-soldered area outside the squeezed area of screw-type		N/A
	Clamping means of terminals: not serve to fix any other components.		N/A
12.1.2	Non-rewirable plug and portable socket-outlet provided with soldered, welded, crimped or equally effective permanent connections		P
	Screwed or snap-on connections not used		P
	Connections made by crimping a pre-soldered flexible conductor not permitted		P
12.1.3	Compliance is checked by inspection and the tests in 12.2 or 12.3 as applicable.		N/A
12.2	Terminals with screw clamping for external copper conductors		—
12.2.1	Plug and portable socket-outlet provided with terminals which allows the proper connection of copper conductors as shows in table 3.		N/A
	The space for conductors must at least be as fig. 2,3,4 or 5.		N/A
	Rated current (A); Type of accessories		—
	Smallest / largest cross-sectional area (mm ²)		—
	Diameter of the largest conductor (mm)		—
	Figure of terminal		—
	Minimum diameter D (minimum dimensions) of conductor space: required (mm); measured		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 thread comparable in pitch and		N/A
	Screws not of soft metal or metals that yield such as zinc or aluminium		N/A
12.2.4	Terminals resistant to corrosion		N/A
	Terminals with a body of copper or copper alloy according to 26.5 are considered to comply with this requirement.		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement + Test	Result - Remark	Verdict
12.2.5	Screw-type terminals clamp the conductor(s) without undue damage		N/A
	Test with apparatus shown in figure 9:		—
	- number of conductors		—
	- smallest cross-sectional area (mm ²) (table 3); diameter of bushing hole (mm); height H (mm); mass		—
	- largest cross-sectional area (mm ²) (table 3); diameter of bushing hole (mm); mass (kg)		—
	The length of the test wire must be 75 mm longer than the height (H) given in table 9. H (mm)		—
	- nominal diameter of thread (mm); torque according to table 6 (Nm)		—
	During the test: conductor not slip out, no break near clamping unit and no damage		N/A
	The test shall be repeated with rigid solid conductors if they exist in the relevant standard, if the first test has been made with rigid stranded		N/A
12.2.6	Terminals clamp the conductor reliably between metal surfaces		N/A
	Pull test (1 min):		N/A
	- number of conductors		—
	- smallest cross-sectional area (mm ²) (table 3); pull (N)		—
	- largest cross-sectional area (mm ²) (table 3); pull (N)		—
	- torque (Nm) (2/3 table 6)		—
	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		N/A
	- largest cross-sectional area (mm ²) (table 3)		—
	- number of wires and nominal diameter of wires (table 5):		—
	plugs and portable socket-outlets: flexible conductors		—
	- terminals intended for looping-in 2 or 3 conductors: permissible number of		—
	- torque (Nm) (2/3 table 6)		—
	After the test: no wire of the conductor escaped outside the clamping unit		N/A
12.2.8	Terminals not work loose from their fixing to		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Torque test:		—
	- rigid solid copper conductor of the largest cross- sectional area (mm²) (table 3)		—
	- torque (Nm) (table 6 or appropriate figures 2,3,4) :		—
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no		N/A
	Where a screw has a hexagonal head with a slot, only the test with the screwdriver is made with the torque values given in column2.		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		N/A
12.2.10	Earthing terminals: no risk of corrosion		N/A
	Body of brass, according 26.5 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 shall be taken to avoid the risk of corrosion		N/A
12.2.11	Pillar terminals: distance g no less than the value specified in figure 2: required (mm); measured (mm) :	Required: m	N/A
	Mantle terminals: distance g no less than the value specified in figure 5: required (mm); measured		N/A
12.3	Not Apply		N/A
12.4	Crimp connections of non-rewirable plugs and portable socket-outlets shall have sufficient electrical and mechanical properties. Photo documentation from 3 sides shall be made from in total 3 contact points, consisting of side view, top view and perspective view. The manufacturer has to determine and to document the values of crimping height, withdrawal force or voltage drop (lower and upper limit), these values are the basis of the		N/A

13	NOT APPLY	—
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14	CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OTLETS		—
14.1	Non-rewirable plug or non-rewirable portable socket-outlet:		P
	flexible cable cannot be separated from the plug and portable socket-outlet without making it permanently useless		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	plug and portable socket-outlet cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such		P
14.2	Pins of plugs and portable socket-outlets: adequate mechanical strength		N/A
	Test for pins not solid (made after clause 21): force of 100 N exerted on the pin for 1 min by means of a steel rod Ø 4,8 mm		—
	During the application of the force: reduction of the dimension of the pin not exceed 0,15 mm		N/A
	After removal of the rod: dimensions of the pin not changed by more than 0,06 mm		N/A
14.3	Pins of plugs:		—
	- locked against rotation		N/A
	- not removable without dismantling the plug		N/A
	- adequately fixed in the body of the plug when the plug is wired and assembled as in normal		N/A
	Earthing contacts and neutral pins of plugs: not possible to insert in an incorrect position		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
14.4	Earthing contacts and neutral contacts of portable socket-outlets:		—
	- locked against rotation		P
	- removable only with the aid of a tool, after dismantling the socket-outlet		P
14.5	Socket-contact assemblies: sufficient resiliency		P
	Parts of socket-contact assemblies, which with an inserted plug will be in contact with the pin and complete the circuit must be of metal. And		P
	-shall ensure metallic opposing contacts at least on two sides of each pin.		P
	These requirements also apply to socket-outlets where the contact pressure relies on insulating		N/A
	Insulating material where the contact pressure relies on the insulating material shall have such a characteristic as to ensure a safe and permanent contact in any condition of normal use with regard to shrinking, ageing and abrasion		N/A
	The contact pressure of the contact tube shall not depend on soldered connection only.		P
14.6	Pins and portable socket-contacts: resistant to corrosion and abrasion		P
	Resistant to abrasion according clauses 20 and 21		P
	Resistant to corrosion by inspection and test according clause 26.5		P
14.7	Enclosures of rewirable plugs and portable socket- outlets: completely enclose terminals and ends of flexible cable.		N/A
	Construction of rewirable plugs and portable socket-outlets:		—
	- conductors can be properly connected		N/A
	- cores not pressed against each other		N/A
	- cores of live conductor not in contact with accessible metal parts		N/A
	- core of earthing conductor not in contact with live parts		N/A
14.8	Rewirable plugs and portable socket-outlets: terminal screws or nuts cannot become loose and fall out of position and establish an electrical connection between live parts and earthing terminal		N/A
14.9	Rewirable plugs and portable socket-outlets with earthing contact: ample space for slack of earthing (test)		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Non-rewirable non-moulded-on plugs and portable socket-outlets with earthing contact: current-carrying conductors stressed before the earthing conductor if the flexible cable slips in its		P
14.10	Terminals of rewirable plugs and portable socket-outlets and terminations of non-rewirable accessories: located and shielded that loose wires not present a risk of electric shock		N/A
14.10.1	Rewirable plugs and portable socket-outlets: test with 6 mm free wire		—
	free wire of a conductor connected to a live terminal not touch any accessible metal part or able to emerge from the enclosure		N/A
	free wire of a conductor connected to an earthing terminal not touch a live part		N/A
14.10.2	Non-rewirable, non-moulded-on plugs and portable socket-outlets: test with a free wire of length equivalent to the maximum designed stripping length declared by the manufacturer plus 2 mm		—
	free wire of a conductor connected to a live termination not touch any accessible metal part or reduce creepage and clearance below 1,5 mm to the external surface		P
	free wire of a conductor connected to an earth termination not touch any live part		P
14.10.3	Non-rewirable, moulded-on plugs and portable socket-outlets:		—
	Verification of means to prevent stray wires reducing the minimum distance through insulation to external accessible surface below 1,5 mm		N/A
14.11	Rewirable plugs and rewirable portable socket-outlets:		—
	- 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 plug or portable socket-outlet		N/A
	- makeshift methods not used		N/A
	- cord anchorage suitable for the different types of flexible cable which may be connected; screws, if any: not serve to fix any other component		N/A
	- cord anchorages: of insulating material or provided with an insulating lining fixed to the		N/A
	- metal parts of cord anchorages, including clamping screws: insulated from the earthing		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
14.12	Insulating parts which keep live parts in position: reliably fixed together; not possible to dismantle the accessory without the aid of a tool		P
14.13	Covers of portable socket-outlets: bushings for entry holes for the pins not removable from the outside or detachable inadvertently from the		N/A
14.14	Screws intended to allow access to interior of the accessory: captive		N/A
14.15	Engagement face of plugs: no projections		N/A
14.16	Engagement face of portable socket-outlets: no projection		P
14.17	Plugs and portable socket-outlets other than IP20: provided with gland(s) or the like		N/A
	Plugs other than IP20: adequately enclosed		N/A
	Portable socket-outlets other than ordinary: adequately enclosed without a plug in engagement		N/A
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
14.18	Portable Socket outlets with means for mounting on a wall or other surfaces must be so constructed that the means for mounting does not permit access to live parts and so that no fault during testing expose live parts.		N/A
	Portable Socket-outlets with means for permanent mounting shall be tested to 28.1.1 (as stationary outlet) and to 24.1		N/A
	No free openings between space intended for suspension means fixed to the wall and live		N/A
14.19	Combinations of plugs and portable socket-outlets with circuit-breakers or other protective devices comply with relevant standards, if any		P
14.20	Movable accessories not integral part of lampholders.		P
	Adaptors without interposed auxiliaries (Switches, regulators, timers etc.) shall comply with DIN		N/A
	Multiple outlets with earthing contact and with stiffly mounted plug are not allowed.		N/A
14.21	- Plugs must be non-rewirable if exclusively for class II		N/A
	- Extension cords must have PE.		N/A
	- Class II Plugs incorporated in a cord set shall be provided with a connector for equipment of		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
14.22	Components (switches and fuses) incorporated in plugs and portable socket-outlets: comply with the relevant standard		P
14.23	Plug-in equipment: not cause overheating of the pins or impose undue strain		N/A
	Plugs with rating above 16 A and 250 V: not integral part of other equipment		N/A
	Tests for two-pole plugs, with or without earthing contact, with rating up to and including 16 A and 250 V (plug of equipment inserted into a fixed socket-outlet complying with this standard):		—
14.23.1	Socket-outlet connected to a supply voltage equal to 1.1 times the highest rated voltage of the equipment (V)		N/A
	Temperature rise of the pins after 1 h not exceed 45 K (K)		N/A
14.23.2	Additional torque applied to the socket-outlet to maintain the engagement face in the vertical plane not exceed 0.25 Nm (Nm)		N/A
14.24	Plugs: can easily withdrawn by hand from the relevant socket-outlet		N/A
	Gripping surfaces: so designed that the plug can be withdrawn without pull on the flexible cable and comply with one of:		N/A
	-The plug has a gripping surface length of at least 55 [mm] in axial direction (cable and cable protection is not counted) or		N/A
	-The plug has a groove that permit a 12±0.1 [mm] ball to enter 2 [mm] from each side or 4 [mm] from one side. or		N/A
	-The plug has a special device for pulling it out, e.g. a hook or ring		N/A
14.25	Membranes in inlet openings: meet the requirements of 13.22 and 13.23		N/A
14.26	Adaptors shall comply with DIN 49440 and DIN 49441		N/A
	Adaptors must be so constructed and the connection of the cord so manufactured that the efficacy of the protective measures is assured.		N/A
	One constructive unit may only accommodate one plug and one socket outlet.		N/A
	Cords connected to adapters shall be at least 1.40 [m] long.		N/A
	Adaptors shall not impose undue strain on the socket outlet. (0.25 [Nm])		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
14.27	The length of the cord for portable socket-outlets shall be at least 1.40 [m]. Length is measured between outsides, if any, of entry bushings for cords.		P
	For cords in spiral form the length is measured when stretched under own weight.		P
14.28	Portable socket-outlets with self-closing lids for securing the protection degree higher or equal to IPX4 shall be constructed that the correct functioning of the self-closing lid is ensured during intended use. Compliance on portable socket-outlet with self-closing lid is checked by inspection and test		N/A
	In case of non-self-closing lids, the lid shall be fixed sufficiently to the portable socket-outlet. Compliance on portable socket-outlet with non-self-closing lid is checked by inspection and test according to 24.21.		N/A

15	REMAINS FREE		—
16	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY		—
16.1	Resistance to ageing		—
	Plugs and portable socket-outlets shall be resistant to ageing		P
	Plugs and portable sockets with an IP code higher than IP X0 are tested after being mounted and connected according to 16.2		N/A
	Plugs and portable socket-outlets subjected to a test in a heating cabinet at 70 °C ± 2 °C for seven days (168 h)		P
	After the tests (96 h at 45-55%RH), samples shall show:		—
	- no crack visible with normal or corrected vision without additional magnification		P
	- no sticky or greasy material		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no damage		P
16.2	Protection by enclosure		P
	Enclosure of plugs and portable socket-outlets shall provide a degree of protection against harmful ingress of solids and water in accordance with the IP classification.		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Plugs and portable socket-outlets with glands or membranes are fitted with a cord according to 12.2.1. Glands are tightened with a torque 2/3 of the torque for the test in Clause 24.6.		N/A
	Mounting screws for housings are tightened with 2/3 of the torque in table 6 of 12.2.8.		N/A
	Parts that can be removed without tools are removed.		N/A
	Plugs and portable socket-outlets tested on a plain, horizontal surface in a position as in normal use and fitted with flexible cables according to table 17 having the largest and smallest cross-sectional area given in table 3:		N/A
	- largest cross-sectional area (mm ²); type of cable (table 17)		—
	- smallest cross-sectional area (mm ²); type of cable (table 17)		—
	Mounting screws tightened with a torque equal to 2/3 of the torque given in table 6 (Nm)		—
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 24.6 (Nm)		—
	Parts that can be removed without tools are removed.		N/A
	Portable socket outlets are tested with and without plug (or Gauge DIN 49440-4) in		N/A
	Plugs are tested engaged with an outlet of the same system and with the same degree of		N/A
	High voltage test according to clause 17.2 immediately after the IP test.		N/A
16.2.1	Protection against access to hazardous parts and ingress of solids.		P
16.2.1.1	Protection against contact with hazardous parts		P
	Appropriate test performed as specified in EN 60529 (VDE 0470) (see also clause 10)		P
16.2.1.2	Protection against ingress of solids.		P
	Appropriate test performed as specified EN 60529 (VDE 0470)		P
	Test on plugs and portable socket-outlets with IP5X (considered to be of category 2): dust not penetrated in a quantity to interfere with satisfactory operation or to impair safety.		P
	Drain holes remain closed.		P
16.2.2	Protection against ingress of water		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	The enclosure of plugs and portable sockets shall provide protections against ingress of water according to their IP classification (test to EN		N/A
	Directly after this test the High voltage test 17.2 must be passed. No water may penetrate in between the insulation and the strands.		N/A
16.3	Resistance to humidity		—
	Plugs and portable socket-outlets proof against humidity which may occur in normal		P
	Compliance checked by a humidity treatment carried out in a humidity cabinet containing air with relative humidity maintained between 91 %		P
	Parts that can be removed without a tool are		P
	Specimens kept in the cabinet for:		—
	- two days (48 h) for IPX0 accessories		P
	- seven days (168 h) for accessories higher than IP		N/A
	After this treatment the specimens show no damage		P
17	INSULATION RESISTANCE AND ELECTRIC STRENGTH		—
17.1.1	For portable socket-outlets: insulation resistance (500 V d.c. after 1 min application):		—
	a) between all poles connected together and the body, with a plug in engagement ≥ 5	$>100 \text{ M}\Omega$	P
	b) between each pole in turn and all others connected to the body, with a plug in engagement $\geq 5 \text{ M}\Omega$:	$>100 \text{ M}\Omega$	P
	c) between any metal enclosures and metal foil in contact with the inner surface of its insulating linings, if any ≥ 5		N/A
	d) between any metal part of the cord anchorage, including clamping screws, and earthing terminal or earthing contact, if any, of portable socket-outlets ≥ 5		N/A
	e) between any metal part of the cord anchorage of portable socket-outlets and a metal rod of the maximum diameter of the flexible cable inserted in its place (see table 17) ≥ 5		N/A
17.1.2	For plugs: insulation resistance (500 V d.c. after 1 min application):		—
	a) between all poles connected together and the body $\geq$		N/A
	b) between each pole in turn and all others connected to the body $\geq 5 \text{ M}\Omega$:		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	c) between any metal part of the cord anchorage, including clamping screws, and earthing terminal or earthing contact, if any ≥ 5		N/A
	d) between any metal part of the cord anchorage and a metal rod of the maximum diameter of the flexible cable inserted in its place ≥ 5		N/A
17.2	Portable socket-outlets: electric strength, test voltage (a.c., full value for 1 min):		—
	a) test voltage (V)	1250 V / 2000 V	P
	b) test voltage (V)	1250 V / 2000 V	P
	c) test voltage (V)	1250 V / 2000 V	N/A
	d) test voltage (V)	1250 V / 2000 V	N/A
	e) test voltage (V)	1250 V / 2000 V	N/A
	Plugs: electric strength, test voltage (a.c., full value for 1 min):		—
	a) test voltage (V)	1250 V / 2000 V	N/A
	b) test voltage (V)	1250 V / 2000 V	N/A
	c) test voltage (V)	1250 V / 2000 V	N/A
	d) test voltage (V)	1250 V / 2000 V	N/A
	During the test no flashover or breakdown		P
18	OPERATION OF EARTHING CONTACTS		—
18.1	Earthing contacts provide adequate contact pressure and not deteriorate in normal use. The contact pressure of the earthing side-contact of portable socket-outlets complying with DIN 49440 and DIN 49442 is tested with suitable test equipment. The equipment in figure 14 is an example of such equipment.		P
	The test equipment fig. 14 is inserted in the portable socket-outlet and secured by the screw C that presses the three screws B against the inner sides of the outlet. The equipment shall be positioned with distance pieces so that the tip of the point F is in contact with the point where the contact to the plug normally is made.		P
	Then the force is measured on each hook that is required to bring the markings in line: [N,	10N	P
	The test is repeated with the test equipment turned 180 degrees [N,	10N	P
	The average force for each contact shall not be less than 5 [N].....(Average [N, N])	10N	P
	Other outlets are tested according to clause 19 and		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
18.2	Earthing contacts (plug with side earthing contacts) provide adequate contact pressure and not deteriorate in normal use. (test equipment according to figure		—
	The test is conducted with the equipment in figure 15 at 35 ±2 C with a force of 50 [N] applied in 168 [h]. The force must be applied where the contact takes place with the fully inserted plug.		P
	Compliance checked by measuring the change in the contact 30 seconds after the force is withdrawn. The change shall not deviate more than 1 [mm] from the measurement determined in		P

19	TEMPERATURE RISE		P
	Plugs and portable socket-outlets shall be so constructed that they comply with the following temperature rise test.		P
	Testing shall be performed at a draught-free location.		P
	For plugs and portable socket-outlets having three poles or more, the current during the test shall be passed through the phase contacts, where applicable. In addition, separate tests shall be made passing the current through the neutral contact, if any, and the adjacent phase contact and through the earthing contact, if any, and the nearest phase contact. For the purpose of this test, earthing contacts, irrespective of their number, are considered as one pole		—
	Separate tests made passing the current through:		P
	- the neutral contact, if any, and the adjacent phase contact. Temperature rise on terminals or terminations (K)		N/A
	- the earthing contact, if any, and the nearest phase contact. Temperature rise on terminals or terminations (K)	Max. 33.6K	P
	The temperature is determined by means of thermo couples selected and attached in a way that their influence on the temperature to be measured is negligible.		P
	Accessible metal part shall not exceed 40K		N/A
	Accessible non-metal part shall not exceed 60K	Max. 12.0K	P
	Note: For the purpose of the test of 25.3, the temperature rise of external 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, is also	Max. 11.3K	P
	Table 15 applies for the assignment of nominal cross-sectional areas of copper conductors		—
	- rated current of accessory		—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	- nominal cross-sectional area (mm ²)		—
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm)		—
19.1	Remains free		—
19.2	Portable socket-outlets		—
	Portable socket-outlets provided with cords are tested as		P
	Rewirable portable socket-outlets without cables are fitted with polyvinyl chloride insulated conductors having a nominal cross-sectional area as shown in table 15.		N/A
	Portable socket-outlets are tested using a test plug according to Figure 16.		N/A
	Non-rewirable plug for cord extension set and multiple socket-outlet are tested with a current according to table 20 for rewirable or non-rewirable portable socket- outlets.	Test current: 20A Measured values on plug: 35.2K	P
19.2.1	Portable socket-outlets without additional function		P
	test for 1 h with a alternating current as specified in Table 20	Test current:16A	P
	The temperature rise of the terminals and internal connections shall not exceed 45 K	Max. 32.8K	P
	The temperature rise of contact tube shall not exceed 45K (EK1 510-11).	Max. 33.9K	P
19.2.2	Portable socket-outlets with additional function		N/A
	1) socket-outlets are tested at rated current for 1 h,	Rated current:	N/A
	The temperature rise of terminals and internal connections for additional function shall not exceed the limits given in appropriate regulations		N/A
	All other terminals and internal connections and sockets contact as well as terminals for external conductor shall not exceed 45K		N/A
	2)socket-outlets are tested with an alternating current as specified in table 20 for 1 h		N/A
	In case of tripping of the integrated protection device the test will be repeated with 0.95 times of the tripping current.		N/A
	In case of cartridge fuse-link according to EN 60127-2 the accessory are tested with 1.5 times of the rated current of the fuse-link. The testing time is 1 h for fuse- links with a rated current up to 6.3 A or 30 min for fuse- links with a rated current exceeding 6.3		N/A
	The temperature rise of all terminals and connections shall not exceed 70K.		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	The temperature rise of contact tube shall not exceed 45K.		N/A
19.3	Plugs		—
	Plugs provided with cords are tested as delivered.:		N/A
	Rewirable plugs without cables are fitted with polyvinyl chloride insulated conductors having a nominal cross- sectional area as shown in table 15.		N/A
	The plugs are tested as follows:		N/A
	A suitable test apparatus is mounted on each live pin or protective contact of the plug together with a thermo couple in the lower part. (NOTE A commercially available socket-outlet can be used as a suitable test apparatus.)		N/A
19.3.1	Plugs without additional function		N/A
	test for 1 h with a alternating current as specified in Table 20		N/A
	The temperature rise of clamping units and internal connections shall not exceed 45 K.		N/A
	The temperature rise of contact tube shall not exceed 45K (EK1 510-11).		N/A
19.3.2	Plugs with additional function		N/A
	1) rewirable plugs are tested at rated current for 1 h	Rated current:	N/A
	Non-rewirable plug are tested with an alternating current as specified in table 20 for	Test current:	N/A
	The temperature rise of terminals and connections points of additional function shall not exceed the values given in relevant		N/A
	All other terminals and internal connections and contact as well as terminals for external conductor shall not exceed 45K		N/A
	2)plugs are tested with an alternating current as specified in table 20 for 1 h		N/A
	In case of tripping of the integrated protection device the test will be repeated with 0,95 times of the tripping current.		N/A
	In case of cartridge fuse-link according to EN 60127-2 the accessory are tested with 1,5 times of the rated current of the fuse-link. The testing time is 1 h for fuse- links with a rated current up to 6.3 A or 30 min for fuse- links with a rated current exceeding 6.3		N/A
	The temperature rise of all terminals and connections shall not exceed 70K.		N/A
	The temperature rise of contact tube shall not exceed 45K.		N/A
19.4	Adaptors		—
	Socket-outlets are tested using a test plug according to Figure 16.		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Plug part is tested as follows:		N/A
	A suitable test apparatus is mounted on each live pin or protective contact of the plug together with a thermo couple in the lower part. (NOTE A commercially available socket-outlet can be used as a suitable test apparatus.)		N/A
19.4.1	Adaptor without additional function (DIN49437 adaptor)		N/A
	test for 1 h with a alternating current as specified in Table 20	Test current:	N/A
	The temperature rise of the terminals and internal connection points shall not exceed 45		N/A
	The temperature rise of contact tube shall not exceed 45K (EK1 510-11).		N/A
19.4.2	adaptor with additional function		N/A
	1) adaptor are tested at rated current for 1 h,		N/A
	The temperature rise of terminals and internal connections for additional function shall not exceed the limits given in appropriate regulations		N/A

	All other terminals and internal connections and sockets contact as well as terminals for external conductor shall not exceed 45K		N/A
	2)adaptor are tested with an alternating current as specified in table 20 for 1 h		N/A
	In case of tripping of the integrated protection device the test will be repeated with 0,95 times of the tripping current.		N/A
	In case of cartridge fuse-link according to EN 60127-2 the accessory are tested with 1,5 times of the rated current of the fuse-link. The testing time is 1 h for fuse- links with a rated current up to 6.3 A or 30 min for fuse- links with a rated current exceeding 6.3		N/A
	The temperature rise of all terminals and connections shall not exceed 70K.		N/A
	The temperature rise of contact tube shall not exceed 45K.		N/A
19.5	Plug-in equipment		—
	Plug-in equipment are tested according to appropriate product standards		N/A
	For the testing of the plug see 14.23		N/A

20	BREAKING CAPACITY		—
	Plugs and portable socket-outlets shall have adequate breaking capacity		P
	The test is made with connections shown in figure 18		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Compliance checked by testing:		—
	- Portable socket-outlets;		P
	- plugs with pins which are not solid		N/A
	Test conditions:		—
	- 100 strokes; rate of operation	30 (15)-strokes per minute	—
	- test voltage (1.1 Vn)	1.1x250V	—
	- test current (1.25 In) (power factor 0,6)	1.25x16A	—
	Portable socket-outlets are tested with a test plug with brass pins in good condition. Diameter 4.8 +0.06/0 [mm] respective 4.0+0.06/0 [mm]. Distance between pins 19+0.05/0 [mm]. The pin ends shall comply with DIN 49441, DIN 49446, DIN 49448, or		P
	Plugs tested using a socket-outlet complying with the standard VDE 0620-1 and having as near to average characteristics.		N/A
	Accessible metal parts and metal supports are connected via a fuse to ground. The fuse shall be a Cu wire 0.1 [mm] diameter and at least 50 [mm] long. The fuse shall not burn out.		N/A
	During the test: no sustained arcing occur		P
	After the test:		—
	- specimens show no damage impairing their further use;		P
	- entry holes for the pins not show any damage which may impair the safety		P

21	NORMAL OPERATION		—
	Plugs and portable socket-outlets shall withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance for portable socket-outlets as well as plugs with resilient earthing contacts or non solid pins is checked by testing:		—
	- portable socket-outlets;		P
	- plugs with resilient earthing socket-contacts;		N/A
	- plugs with pins which are not solid		N/A
	Test performed on:		—
	- complete portable socket-outlets (with shutters if	10000 strokes	P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	- if shutter fail, test repeated under same condition but with operations made by hand as in normal use (Remark: Start point 2 as shown in Figure 43 of IEC 60884-1 is not permitted)	10000 strokes	N/A
	Test conditions:		P
	- 10000 strokes; rate of operation	30 (15)-strokes per minute	—
	- test voltage Vn (V)	250V	—
	- test current (as specified in table 20 (A) (power factor 0,8 ±0.05)	16A	—
	Test current passed:		—
	- during each insertion and withdrawal of the plug (In ≤		P
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing (In > 16A)		N/A
	Multiple portable socket-outlets: test carried out on one portable socket-outlet of each type and current		P
	During the test: no sustained arcing occur		P
	After the test the specimens shall not show:		—
	- wear impairing their further use;		P
	- deterioration of enclosures, insulating lining or barriers;		P
	- damage to the entry holes for the pins, that might impair proper working;		P
	- loosening of electrical or mechanical connections;		P
	- seepage of sealing compound		N/A
	Shuttered portable socket-outlets: the following gauges not touch live parts when they remain under the relevant forces:		—
	- gauge 15 applied with a force up to 20 N		P
	- gauge13 applied with a force up to 1 N		P
	Temperature-rise test (requirements of clause 19):		P
	Test current for this clause is given in table 20, passed for 1 h (A)		P
	Temperature rise of terminals not exceed 45 K (K) :	Max. 33.1K	P
	Separate tests made passing the current through:		—
	- the neutral contact, if any, and the adjacent phase contact (K)		N/A
	- the earthing contact, if any, and the nearest phase contact (K)	Max. 35.9K	P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement + Test	Result - Remark	Verdict
	The force to open the shutter shall not exceed 50N when tested with Gauge 19a or 19b		P
	Portable socket-outlets: electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		—
	a) test voltage (V)	1500 V	P
	b) test voltage (V)	1500 V	P
	c) test voltage (V)	1000 V / 1500V	N/A
	d) test voltage (V)	1000 V / 1500V	N/A
	e) test voltage (V)	1000 V / 1500V	N/A
	Plugs: electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		—
	a) test voltage (V)	1000 V / 1500V	N/A
	b) test voltage (V)	1000 V / 1500V	N/A
	c) test voltage (V)	1000 V / 1500V	N/A
	d) test voltage (V)	1000 V / 1500V	N/A
	During the test: no flashover or breakdown		P
	Portable socket-outlets with side earthing contacts: the contacts are pressed as far as possible apart, but not more than 35 [mm]. Kept in this position for		P
	Test according to Clause 18. The average force necessary to bring the contact in the required position shall be at least 60% of the original value. The mean value of the force shall be at least 5 N.	8N	P
	Test in clause 14.2 are carried out in compliance with the tests of this clause.		P
22	FORCE NECESSARY TO WITHDRAW THE PLUG		—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Construction of portable socket-outlets shall allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet in normal use		P
	Portable socket outlets:		P
	Rated current (A)	16A	—
	Number of poles	2P+E	—
	Plugs with resilient earthing contact		N/A
	Rated current (A)		—
	Number of poles		—
22.1	Verification of the maximum withdrawal force		—
22.1.1	Test for portable socket outlets		—
	- Maximum withdrawal force (used Gauge 16a,16b,16c or 16d, force according to table 16) (N)	16a, 54N	—
	Before each test the test pin is wiped free from grease with a chemical degreaser		P
	The plug not remain in the socket-outlet		P
22.1.2	Test for plugs with resilient earthing contact		—
	- Maximum withdrawal force (used Gauge 16e, force according to table 16) (N)		—
	Before each test the test pin is wiped free from grease with a chemical degreaser		N/A
	The test pin not remain in the earthing contact		N/A
22.2	Verification of the minimum withdrawal force		—
	- Minimum withdrawal force (used Gauge 2A,2B or 2C, force according to table 16) (N)	2A, 2N	—
	Before each test the test pin is wiped free from grease with a chemical degreaser		P
	The plug not fall from each individual contact-assembly within 30 s		P
23	FLEXIBLE CABLES AND THEIR CONNECTIONS		—
23.1	Plugs and portable socket-outlets provided with a cord anchorage such that the conductors are relieved from strain and that their covering is protected from abrasion		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Sheath of flexible cable clamped within the cord anchorage		P
23.2	Pull and torque test:		—
	The plugs and portable socket-outlets is to be stored for one hour at 45 °C in a climatic cabinet; immediately after it the cord anchorage is to be drawn for 30 s with 50 N, whereby the cord anchorage must remain still effective. A replacement of the cord of less than 2 mm is not regarded as an		P
	After cooling down to ambient temperature the effectiveness of the retention of the cable by the cord anchorage is checked by the following test by means of an apparatus as shown in figure 20.		P
	Non-rewirable plugs and portable socket-outlets:		—
	- rating of plug or portable socket-outlet	16A, 250V	—
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm ²)	3G1.5mm ²	—
	- pull (100 times) (N)	60N	—
	- torque (1 min) as specified in table 18 (Nm)	0.25Nm	—
	After the test:		—
	Displacement ≤ 2 mm	Max. 0.2mm	P
	No break in the electrical connections		P
	Rewirable plugs and portable socket-outlets:		—
	- rating of plug or portable socket-outlet		—
	- clamping screws, if any, tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm)		—
	- type of flexible cable; number of conductors and smallest nominal cross-sectional area (mm ²) as show in table 17		—
	- pull (100 times) (N)		—
	- torque (1 min) as specified in table 18 (Nm)		—
	After the test:		—
	Displacement ≤ 2 mm		N/A
	End of conductors not have moved noticeably in the terminals		N/A
	- type of flexible cable; number of conductors and largest nominal cross-sectional area (mm ²) as show in table 17		—
	- pull (100 times) (N)		—
	- torque (1 min) as specified in table 18 (Nm)		—
	After the test:		—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Displacement ≤ 2 mm		N/A
	End of conductors not have moved noticeably in the terminals		N/A
	Rewirable accessories having rated current up to and including 16A:		—
	Suitable for fitting with the appropriate cable as shown in table 19		N/A
	Type of flexible cable; number of conductors and nominal cross-sectional area		—
23.3	Plugs and portable socket-outlets shall be provided with a flexible cable complying with DIN VDE 0281 or DIN VDE 0282. Plugs may have other types of cord if permitted by other German standards.		P
	Cord extension sets and multiple portable socket-outlets with cord and plug without internal protective devices as well as their components shall be designed for a rated current of 16A.		P
	A reduction of the of the cross-section area below 1.5mm^2 till 1.0mm^2 is only permitted if an internal protective device is build-in that is designed for the rated current of the	1.5mm^2	P
	Cord extension sets and multiple portable socket-outlets with cord and plug (table type) are testes as a unit in the assembled condition.		P
	Conductor connected to the earthing contact: identified by the colour combination green/yellow		P
23.4	Plugs and portable (rewirable and non-rewirable) socket-outlets with connected cord: designed that the flexible cable is protected against excessive		P
	For rewirable plugs and socket outlets a radius of 0.5mm at the cable entrance is considered to meet the requirement		N/A
	The test is conducted for the entrance hole of the cable is sharp-edged.		P
	Guards shall be of insulating material and fixed in reliable manner		P
	Flexing test (10.000 flexings):		—
	- type of flexible cable and nominal cross-sectional area (mm^2)	$3\text{G}1.5\text{mm}^2$	—
	- test current (A)	16A	—
	- mass (N)	20N	—
	During the test: no interruption of the test current and no short-circuit between conductors		P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible		P

24	MECHANICAL STRENGTH		—
	Plugs, portable socket-outlets and screwed glands have adequate mechanical strength		P
24.1	Portable multiple socket-outlets: impact test (apparatus shown in fig. 22, 23, 24 and 25)		P
	After the test: no damage, live parts do not become accessible		P
24.2	Portable single socket-outlets and plugs: tumbling barrel test; number of falls		N/A
	After the test:		—
	No part become detached or loosened;		N/A
	Pins no become so deformed that the plug cannot be introduced into a socket-outlet and also fails to comply with the requirements of 9.1 and 10.3;		N/A
	Pins no turn when a torque of 0.4 Nm is applied for 1 min in each direction		N/A
	Portable socket-outlets with shutters shall be tested again with the shutter test in cl 21 , Para. 16 to 21(no		N/A
24.3	Not apply		—
24.4	Portable single socket-outlets, multiple socket-outlets and plugs (elastomeric or thermoplastic material): impact test, weight 1000 g, height 100 mm (apparatus shown in fig. 21)		P
	Specimens placed in a refrigerator at $-15^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for at least 16 h		P
	After the test: no damage		P
24.5	Portable single socket-outlets and plugs (elastomeric or thermoplastic material): compression test, 300 N for 1 min, position a) and		N/A
	After the test: no damage		N/A
24.6	Not apply		—
24.7	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in		N/A
	After the test: no damage of pins, insulating sleeve not have punctured or rucked up		N/A
24.8	Shuttered portable socket-outlets: mechanical test carried out on specimens submitted to the normal operation test according to clause 21		—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Force applied for 1 min against the shutter of an entry hole by means of one pin	40 N/ 75 N	—
	Pin not come in contact with live parts		P
	After the test: no damage		P
	Portable socket-outlets with shutters shall be tested again with the shutter test in cl 21 without repeating normal operation test		P
24.9	Multiple portable socket-outlet: mechanical test		—
	Rewirable multiple socket-outlets: flexible cable of the smallest cross-sectional area specified in table		N/A
	8 falls on concrete floor with the specimens arranged as shown in figure 30		P
	After the test: no damage, no part have become detached or loosened		P
	Portable socket-outlets With IP code higher than IP X0 submitted again to the test as specified in 16.2		N/A
	Portable socket-outlets with shutters shall be tested again with the shutter test in cl 21 without repeating normal operation test		P
24.10	Plugs: pull test to verify the fixation of pins in the body of the plug (new specimens)		—
	Maximum withdrawal force (table 16) applied for 1 min on each pin in turn, after the specimen has been placed at 70 °C for 1 h		—
	After the test: displacement of pins in the body of the plug ≤ 1 mm		N/A
24.11	Barriers of portable socket-outlets having means for suspension on a wall:		—
	Force applied for 10 s against the barrier by means of a cylindrical steel rod (1,5 times the maximum plug withdrawal force specified in table 16) (N)		—
	Rod not pierce the barrier		N/A
24.12	Portable socket-outlets having means for suspension on a wall (pull test):		—
	Pull applied to the supply flexible cable for 10 s (force prescribed in 23.2 for checking the flexible cable anchorage) (N)		—
	During the test: no break of the means for suspension on a wall		N/A
24.13	Portable socket-outlets having means for suspension on a wall (pull test):		—
	Pull applied to the engagement face of the portable socket-outlet for 10 s (maximum withdrawal force specified, for the corresponding plug, in table 16) (N)		—
	During the test: no break of the means for suspension on a wall		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
24.14	Not apply		—
24.15	Not apply		—
24.16	Not apply		—
24.17	Not apply		—
24.18	Not apply		—
24.19	Shroud of portable socket-outlets: compression test (20 ± 2) N at (25 ± 5) °C by means of the apparatus shown in figure 37b		—
	After 1 min and while the shrouds are still under pressure the dimensions did comply with the appropriate standard sheet		N/A
	Test repeated with the specimen rotated 90 °		N/A
24.20	Portable socket-outlets with self closing lid for securing a degree of protection larger or equal to IP44 the flap lid is to be subjected to a movement test. After assembly as for the intended use the flap lid is to open to at least 5° before the limit stop for 5000-times. Possibly existing springs or other		N/A
24.21	Portable socket-outlet with a non-self-closing lid a pull test for the captiveness of lid with a force without jerk of 50N for 30s is to be performed in the most unfavourable direction. The lid shall not come		N/A
25	RESISTANCE TO HEAT		—
25.1	Specimens kept for 1 h in a heating cabinet at (100 ± 2) °C for 1 h		—
	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 with test probe applied with a force not exceeding 5 N		P
	-markings still legible		P
25.2	Parts of insulating material (Except from parts made of rubber) of portable accessories, necessary to retain current-carrying parts and parts of the earthing circuit in position, and parts of the front surface zone of 2 mm width surrounding the phase and neutral pin entry holes: ball-pressure test (1 h, 125 °C) (table 22A)		—
	After the test: diameter of impression ≤ 2 mm	1.2mm (Socket base for retaining live)	P
25.3	For parts 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)		—
	Test temperature (°C)	70	P
	After the test: diameter of impression ≤ 2 mm	0.9mm (Shutter body, Enclosure)	P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
25.4	Portable accessories: compression test (20 N, 1 h, 80 °C) by means of the apparatus shown in figure 28		—
	After the test: no damage		P

26	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		—
26.1	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		P
	Thread-cutting screws intended to be used during installation: captive		N/A
	Screws or nuts which transmit contact pressure: be made of metal, and in engagement with a metal		P
	Test:		—
	- 10 times for screws in engagement with a thread of insulating material and for screws of insulating		P
	- 5 times for all other cases		N/A
	During the test: no damage impairing the further use of the screwed connections		P
26.2	Screws in engagement with a thread of insulating material: correct introduction into the screw hole or nut ensured		N/A
26.3	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
	Connections made by insulation piercing of tinsel cord reliable		N/A
26.4	Screws and rivets locked against loosening and/or turning		N/A
26.5	Current-carrying parts (including earthing terminals) have mechanical strength, electrical conductivity and resistance to corrosion adequate:		—
	- 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 (DIN 50961): service condition ISO no. (1/2/3); IP (X0/X4/X5/X6); thickness (µm)		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	- steel with electroplated coating of nickel and chromium (DIN EN ISO 1456): service condition ISO no. (2/3/4); IP (X0/X4/X5/X6); thickness (μm)		N/A
	- steel with electroplated coating of tin (DIN 50965): service condition ISO no. (2/3/4); IP (X0/X4/X5/X6); 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		P
26.6	Contacts subjected to a sliding action: of metal resistant to corrosion		P
26.7	Thread-forming screws and thread-cutting screws not used for the connection of current-carrying		P
	Thread-forming screws and thread-cutting screws used to provide earthing connection: not necessary to disturb the connection and at least two screws are used for each connection		N/A
26.8	If other than screw-type or screwless terminals used for internal connections in plugs and portable socket- outlets, these connections shall be soldered, welded, crimped or equally effective		N/A
	Screwless terminations, similar like insulating piercing terminations, shall only be used for uninsulated rigid conductors, compliance is checked by the tests according to 12.3 as far as		N/A
	Screw-type terminals shall not be used for internal connections in non-rewirable portable accessories, compliance is checked by		N/A

27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		—
27.1	Creepage distances, clearances and distances through sealing compound no less than the values shown in table 24		P
	Creepage distances (cr):		—
	1) between live parts of different polarity $\geq 4(3)$ mm	3.8mm	P
	2) between live parts and:		—
	- accessible insulating and earthed metal parts ≥ 3 mm	>3.0mm	P
	- parts of earthing circuit ≥ 3 mm	>3.0mm	P
	- external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit ≥ 3 mm	>4.0mm	P

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	3) between pins of plugs and metal parts connected to them, when fully engaged, and a socket-outlet of the same system having accessible unearthed metal parts		N/A
	4) between the accessible unearthed metal parts of a socket-outlet and a fully engaged plug of the same system having pins and metal parts connected to them		N/A
	5) between live parts of a socket-outlet (without a plug) or of a plug and its accessible unearthed metal parts		N/A
	Clearances (cl):		—

	6) between live parts of different polarity ≥ 3 mm . :	3.8mm	P
	7) between live parts and:		—
	- accessible insulating and earthed metal parts not mentioned under 8 ≥ 3 mm	>3.0mm	P
	- parts of earthing circuit ≥ 3 mm	>3.0mm	P
	- external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit ≥ 3 mm	>4.0mm	P
	8) between live parts and:		—
	- accessible unearthed or functional earthed metal partsb of plugs and portable socket-outlets $\geq 6(4,5)$ mm		N/A
	9) Remains free		—
	10) Remains free		—
	11) Between live parts of a portable socket-outlet (without plug) or of a plug and their accessible metal parts which are not connected to the earthing circuit $\geq 6(4.5)$ mm.....:		N/A
	Distance through insulating sealing compound:		—
	12) Remains free		—
	13) Remains free		—
	Distance through insulation:		—
	14) Between accessible surfaces and live parts of non- rewirable, moulded-on plugs and portable socket- outlets. ≥ 1.5 mm.....:		N/A

28	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING	—
28.1	Resistance to abnormal heat and to fire	—

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
28.1.1	Glow-wire test		—
	For parts of plugs and portable socket-outlets necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 750 °C For moulded on plugs the tests is performed on the pin base separately. Note 5: The outer material by moulded plugs is totally removed when testing the		—
	No visible flame and no sustained glowing	Socket base for retaining live parts	P
	Flame and glowing extinguish within 30 s :		N/A
	No ignition of the tissue paper		P
	For parts not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: test temperature 650 °C		—
	No visible flame and no sustained glowing	Shutter body, Enclosure	P
	Flame and glowing extinguish within 30 s :		N/A

	No ignition of the tissue paper		P
28.1.2	Plugs with pins provided with insulating sleeves:		—
	Test temperature maintained for 3 h by means of the apparatus shown in figure 39	120 °C / 180 °C	N/A
	Impact test according to sub-clause 30.4 (mass 100 g, height 100 mm, 4 impacts): no cracks of the insulating sleeves		N/A
28.2	Resistance to tracking		—
	Parts of insulating material retaining live parts in position of plugs and portable socket-outlets >IP X0: test voltage 175 V, 50 drops, solution A of DIN IEC		N/A
	No flashover or breakdown		N/A

29	RESISTANCE TO RUSTING		—
	Ferrous parts protected against rusting		P
	No signs of rust after 10 min in carbon tetrachloride, 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		P

30	ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES		—
30.1	Pressure test at high temperature		—
	Apparatus shown in figure 29, with the test specimen in position, maintained for 2 h at 200 °C. Force applied through the blade: 2.5 N		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Thickness of insulation measured: before the test (mm); after the test (mm)		N/A
	Thickness within the area of impression $\geq 50\%$ of the thickness measured before the test: percent value (%)		N/A
30.2	Static damp heat test		—
	Set of 3 specimens submitted to two damp heat cycles in accordance with IEC 68-2-30		N/A
	After the test:		—
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.3	Test at low temperature		—
	Set of 3 specimens maintained at $-15\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 24		N/A
	After the test:		—
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.4	Impact test at low temperature		—
	Specimens maintained at $-15\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ for 24 h subjected to 4 impacts (mass $100 \pm 1\text{ g}$, height 100 mm) by means of the apparatus shown in figure 41 rotating the specimen through 90° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A
31	EMC		—
	No requirements except when the plugs and portable socket-outlets contain electronic parts. Neon lamps are not electronic parts.		N/A
	Plugs and portable socket-outlets with electronic parts must comply with the relevant EMC	According to EN 61058-1	N/A
Annex C Additional requirements for plug and portable socket with "Hammer" logo for rough use			
C.1	DIN 49406-2, DIN49440-3, DIN 49440-5 or DIN 49440-6		N/A
	Splash-proof socket-outlets according to DIN49440-3 & DIN49440-1 are allowed if they meet the requirements of protection IP44 according to DIN EN 60529 (VDE 0470- 1).		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic
C.2	Symbol according to DIN ISO 7000:2008-12 (1325)		N/A
C.3	Plug or portable sockets in Annex C.1 must meet minimum degree of protection IPX4		N/A
C.4	Plug and portable socket-outlet comply with C.1 must be with flexible cord of H07RN-F with NSSH ÖU and DIN VDE 0282-4 (VDE 0282-4) min. 3x1,5mm ² with max outer diameter of 11.9mm.		N/A
C.5	Plug and portable sockets within C.1 need the test of 24.5		N/A

Annex D

During production required test for the manufacturing of plugs and outlets with crimp connections

D1	An ability proof of the used tool must be accomplished on at least 50 test samples. At least the following shall be documented: the crimping height; or the withdrawal force; or voltage drop of the crimping connection Testing is performed on the bases of EN 60352-2 With this test no worse values may be obtained than those, which were specified during the type testing in accordance with 12.4.		N/A
D2	During the production the crimping height, the withdrawal force or the voltage drop of the crimp connection is to be tested. The determined values may not be worse than those, which were specified during the type testing in accordance with 12.4. The test is to be conducted on at least 3 test samples for each product at the starting of the manufacturing and at the end of manufacturing of a batch, however at the latest after 8 hours. The results may not be worse than those, which were specified during the type testing in accordance with 12.4. The results are to be documented by the		N/A

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic

Annex E

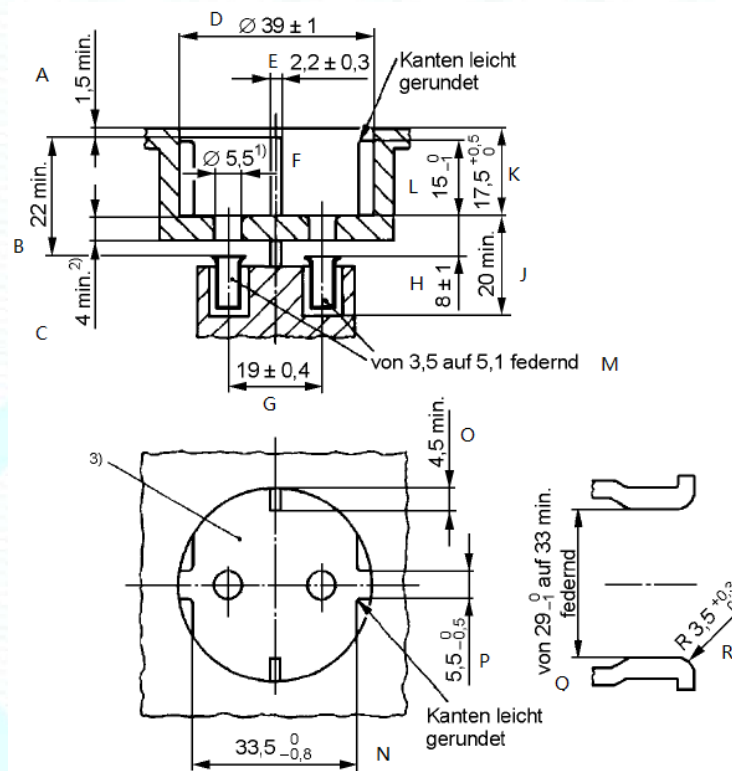
Units intended for installation shall be marked on the smallest closed selling unit with the note according to Appendix E (referred by clause 8.10)

	Hinweis! Installation nur durch Personen mit einschlägigen elektrotechnischen Kenntnissen und Erfahrungen!*) Durch eine unsachgemäße Installation gefährden Sie: – Ihr eigenes Leben; – das Leben der Nutzer der elektrischen Anlage. Mit einer unsachgemäßen Installation riskieren Sie schwere Sachschäden, z. B. durch Brand. Es droht für Sie die persönliche Haftung bei Personen- und Sachschäden. Wenden Sie sich an einen Elektroinstallateur! *) Erforderliche Fachkenntnisse für die Installation Für die Installation sind <u>insbesondere</u> folgende Fachkenntnisse erforderlich: – die anzuwendenden „5 Sicherheitsregeln“: Freischalten; gegen Wiedereinschalten sichern; Spannungsfreiheit – feststellen; Erden und Kurzschließen; benachbarte, unter Spannung stehende Teile abdecken oder abschränken; – Auswahl des geeigneten Werkzeuges, der Messgeräte und ggf. der persönlichen Schutzausrüstung; – Auswertung der Messergebnisse; – Auswahl des Elektro-Installationsmaterials zur Sicherstellung der Abschaltbedingungen; – IP-Schutzarten; – Einbau des Elektroinstallationsmaterials; – Art des Versorgungsnetzes (TN-System, IT-System, TT-System) und die daraus folgenden Anschlussbedingungen (klassische Nullung, Schutzterdung, erforderliche Zusatzmaßnahmen etc.). Reference! Installation only by persons with relevant electrotechnical knowledge and experiences!*) By an inappropriate installation you endanger - your own life; - the life of the users of the electrical system. With an inappropriate installation you risk heavy damages to property, e.g. by fire. The personal adhesion threatens with damages to property and person for you. Contact an Electrician! *) *)Necessary expertise for the installation For the installation in particular the following expertise is necessary: - The appropriate “5 safety rules” : De-energize; secure against restarting; determine De- energizing; Grounding and short circuiting; cover energized neighbouring parts or provide it with barriers; - Selection of the suitable tool, the measuring instruments and if necessary the personal protection equipment; - Evaluation of the measurement results; - Selection of the electricity installation material for the securing of the switching off conditions; - IP enclosures; - Installation of the electrical installation material; - Kind of the supply network (TN-system, IT-system, TT-system) and the electrical operating conditions following from it (classical protective grounding, protective grounding, necessary additional measures etc.)	N/A
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Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic

Socket dimensions comply with DIN 49440 Teil 1:

Maße in mm



- 1) Grenzabmaße: ($^{+0,3}_0$) mm für Formpressstoff; ($^{+0,5}_0$) mm für Gummi und keramisches Material.
- 2) Länge des zylindrischen Teils der Einführungsöffnungen für die Steckerstifte kann unterbrochen werden.
- 3) Die schraubenlose Befestigung des Teiles der Abdeckung, das alle Unverwechselbarkeitsmerkmale des Systems trägt, ist nicht zulässig, es sei denn, dass die Befestigung auf ebenso effektive Art sichergestellt ist. Abdeckungen, die abgezogen werden können, erfüllen diese Anforderungen nicht.

Bild 1

Attachment No.2		DIN VDE0620-2-1	
Clause	Requirement +Test	Result - Remark	Verdic

Dimensions	Sample 1 (mm)	Sample 2 (mm)	Sample 3 (mm)	Verdict
A	3.15	3.12	3.14	P
B	23.88	23.85	22.86	P
C	4.16	4.15	4.15	P
D	38.79	38.76	38.77	P
E	2.36	2.33	2.35	P
F	5.58	5.54	5.56	P
G	19.02	18.96	18.99	P
H	8.98	8.96	8.96	P
J	20.25	20.21	20.21	P
K	17.56	17.56	17.57	P
L	14.26	14.23	14.24	P
M	ok	ok	ok	P
N	33.17	33.16	33.16	P
O	5.39	5.38	5.38	P
P	5.25	5.24	5.24	P
Q	ok	ok	ok	P
R	3.5	3.5	3.5	P

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
Test items particulars:				
Type reference (3.1.8 and 3.1.9).....	☒ unique (U.T.)	☐ common (C.T.)		
Type of switch (3.3.1 to 3.3.9).....	☒ incorporated	☐ integrated	☐ rotary	
	☐ lever	☐ rocker	☐ push-	
	☐ buttoncord-operated	☐ push-pull	☐ biased	
	☐ switch other:			
Operation of the switch (3.4.1 to 3.4.4)	☒ actuation – of the actuating member by human activity			
	☐ indirect actuation – of the actuating member indirectly			
	☒ actuating member – pulled, pushed, turned or otherwise influenced to cause an operation			
	☐ actuating means – part between the actuating member and the contact mechanism			
Connections to the switch (3.5).....	☐ external conductor	☒ integrated		
Terminals and terminations (3.6.1 to 3.6.8) ..	☐ conductor terminal:			
	☐ screw type terminal (7.20.12)			
	☒ screw less terminal (Push-in terminals / 7.20.13) termination:			
	☐ flat quick-connect termination			
	☐ (7.20.14) Tab terminals:			
	☐ 2.8 x 0.5 mm	☐ 2.8 x 0.8 mm	☐ 4.7 x 0.5 mm	
	☐ 4.7 x 0.8 mm	☐ 6.3 x 0.8 mm	☐ 9.5 x 1.2	
	☐ mm Female connector:			
	☐ 2.3 x 3.8 mm	☐ 2.9 x 6.0 mm	☐ 3.5 x 7.8 mm	
	☐ 4.0 x 11.1			
	☒ mm			
	☐ solder(7.20.15)			
	☐ PCB (Printed Circuit Board) special declared type:	☐		
Relating to insulation (3.7.8 to 3.7.11)	☒			
CTI (V) (3.7.12)				
PTI (V) (Annex C).....				
Material group (20.4.11).....	☐ a class 0 appliance;		☐ a class I appliance;	
	☐ a class II appliance;		☐ a class III	
	☐ appliance N/A	☐	☒	
Pollution, micro inside the switch (3.8.1)	☐ I	☒ II	☐ IIIa	☐ IIIb
Pollution, macro outside the switch (3.8.2) ...	☐ I	☒ II	☐ IIIa	☐ IIIb
Nature of supply (7.1.1 to 7.1.3).....	☒ 1	☐ 2	☐ 3	
Type of load – A.C. circuits (IEC 61058-1-1:2016, Table 102)	☒ 1	☐ 2	☐ 3	
	☐ AC	☐ DC	☐ both AC and	
	☐ DC Substantially resistive			
	☐ General purpose load			
	☐ Resistive and/or motor			
	☐ Circuit for specific load of motor with a locked rotor			
	☐ Circuit for an inductive load			
	☐ Resistive and capacitive			
	☐ Tungsten filament lamp			
	☐ load Circuit for specific			
	☐ lamp load Specific			

Attachment No.3		IEC 61058-1																																	
Clause	Requirement +Test	Result - Remark	Verdic																																
Type of load – D.C. circuits. (IEC 61058-1-1:2016, Table 103)	☐ Substantially resistive ☐ Tungsten filament lamp load ☐ Resistive and capacitive load ☐ Circuit for specific lamp load ☐ Declared specific load																																		
Ambient temperature (7.3)	☒ 7.3.1: $0^{\circ}\text{C} \leq T \leq 55^{\circ}\text{C}$ ☐ 7.3.2: not classified as 7.3.1 and 7.3.3 ☐ 7.3.3: accessible member and parts $0^{\circ}\text{C} \leq T \leq 55^{\circ}\text{C}$ and other parts of the switch not within $0^{\circ}\text{C} \leq T \leq 55^{\circ}\text{C}$																																		
Ambient temperature, actuating member ($^{\circ}\text{C}$)	$0^{\circ}\text{C} \leq T \leq 55^{\circ}\text{C}$																																		
Ambient temperature, other parts ($^{\circ}\text{C}$)	$0^{\circ}\text{C} \leq T \leq 55^{\circ}\text{C}$																																		
Number of cycles (7.4)	1E4																																		
IP number (7.5 and 7.6)	IP20																																		
Glow wire temperature ($^{\circ}\text{C}$) (7.11)	☐ 650 ☐ 750 ☒ 850 ☐ 960																																		
Rated Impulse Voltage U_{imp} (V) (7.12)	2500V																																		
Over voltage category (7.13)	☐ Category I; ☒ Category II; ☐ Category III																																		
Disconnection (3.4.5 to 3.4.9 and 7.14)	☒ disconnection ☐ micro-disconnection ☐ electronic-disconnection ☒ full-disconnection ☒ all-pole disconnection (7.16.4) ☐ combination declared																																		
Coating for rigid printed board (7.15)	☐ type 1 ☐ type 2																																		
According to type and/or connection of switches (7.16)	☒ 7.16.1 number of poles: 2 ☒ 7.16.2 number of ways: 1 ☐ 7.16.3 polarity reversal ☐ 7.16.5 number of non-switchable through connections:																																		
Type of circuit (7.16.6 according to code of switch type given in Table 2)	<table border="0"> <tr> <td>☐ 1.2</td> <td>☐ 2.2 [1.2]</td> <td>☐ 3.2</td> <td>☐ 4</td> </tr> <tr> <td>☒ 1.3</td> <td>☐ 2.3</td> <td>☐ 3.3</td> <td>☐ 4</td> </tr> <tr> <td>☐ 1.4 [1.2]</td> <td>☐ 2.4 [1.3]</td> <td>☐ 3.4</td> <td>☐ 4</td> </tr> <tr> <td>☐ 1.5 [1.2]</td> <td>☐ 2.5</td> <td>☐ 3.5</td> <td>☐ 4</td> </tr> <tr> <td>☐ 1.6</td> <td>☐ 2.6</td> <td>☐ 3.6</td> <td></td> </tr> <tr> <td>☐ 1.7</td> <td>☐ 2.7</td> <td>☐ 3.7 [3.3]</td> <td></td> </tr> <tr> <td>☐ 1.8</td> <td>☐ 2.8</td> <td>☐ 3.8</td> <td></td> </tr> <tr> <td>☐ Special</td> <td>☐ 2.9</td> <td>☐ 3.9 [3.3]</td> <td></td> </tr> </table>	☐ 1.2	☐ 2.2 [1.2]	☐ 3.2	☐ 4	☒ 1.3	☐ 2.3	☐ 3.3	☐ 4	☐ 1.4 [1.2]	☐ 2.4 [1.3]	☐ 3.4	☐ 4	☐ 1.5 [1.2]	☐ 2.5	☐ 3.5	☐ 4	☐ 1.6	☐ 2.6	☐ 3.6		☐ 1.7	☐ 2.7	☐ 3.7 [3.3]		☐ 1.8	☐ 2.8	☐ 3.8		☐ Special	☐ 2.9	☐ 3.9 [3.3]			
☐ 1.2	☐ 2.2 [1.2]	☐ 3.2	☐ 4																																
☒ 1.3	☐ 2.3	☐ 3.3	☐ 4																																
☐ 1.4 [1.2]	☐ 2.4 [1.3]	☐ 3.4	☐ 4																																
☐ 1.5 [1.2]	☐ 2.5	☐ 3.5	☐ 4																																
☐ 1.6	☐ 2.6	☐ 3.6																																	
☐ 1.7	☐ 2.7	☐ 3.7 [3.3]																																	
☐ 1.8	☐ 2.8	☐ 3.8																																	
☐ Special	☐ 2.9	☐ 3.9 [3.3]																																	
According to configuration of switching device Electronic switch with (7.17.1 – 7.17.5)	☐ SD without mechanical switching device; SD ☐ with series mechanical switching device; ☐ SD with parallel mechanical switching device; ☐ SD with series and parallel mechanical switching device; ☐ only mechanical switching device without SD. SD to be provided in the end application																																		
Mechanical switch with (7.17.6 – 7.17.7)	☒ or without electronics, which does not impact the safety of the switch; ☐ electronics, which impacts the safety of the switch																																		

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
According to duty type (7.18) :		☒ S1 – continuous duty ☐ S2 – short-time duty with defined ON and OFF ☐ S3 – intermittent periodic duty with defined ON and OFF ☐ as declared for a specific application	
Linkage between contact and actuator speed (7.19) Speed of contact closure :		☐ or opening is dependent on the actuator speed ☒ and opening is independent of the actuator speed	
According to the type of terminals (7.20) for :		☐ unprepared conductors (7.20.1) ☐ prepared conductors (7.20.2) ☐ flexible stranded conductors (7.20.3) ☐ rigid stranded conductors (7.20.4) ☐ solid conductors (7.20.5) ☐ conductor size range according to Table 4 (7.20.6) ☐ a declared limited conductor size range (7.20.7) ☐ only one conductor (7.20.8) ☐ the interconnection of two or more conductors (7.20.9) ☐ assembling one time (7.20.10) ☐ assembling and disassembling more than one time (7.20.11) ☐ welding or ridged terminals (7.20.16) ☐ wires for connections (7.20.17) ☐ piercing conductors (7.20.18) ☐ declared by the manufacturer (7.20.19)	
Type of built in protection (7.21)..... :		☐ Built in protection provided; ☒ None provided	
Type of forced cooling (7.22)..... :		☒ Not requiring forced cooling. ☐ Forced cooling required, with description of forced cooling.	
According to the capacitor provided with the switch (7.23.1 – 7.23.5) :		☐ Capacitor class X1 ☐ Capacitor class X2 ☐ Capacitor class X3 ☐ Capacitor class Y2 ☐ Capacitor class Y4	

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

8	MARKING AND DOCUMENTATION		P
8.1	Switch information		--
8.1.1	The switch manufacturer provide adequate information to ensure that the:		--
	• appliance manufacturer can select and install a switch; • end user can use a switch as intended by the switch manufacturer; • corresponding tests can be performed in accordance with this standard		P
	Information is provided in one or more of the following ways, as in Table 3.		--
8.1.2	By switch marking.	☒ Ma	P
8.1.3	By documentation.	☒ Do	P
	Documentation available in any suitable format.		P

Table 3	Switch information	Means of information:		P
No.	Characteristic	☐ C.T. ☒ U.T.		
1	SWITCH IDENTIFICATION			--
1.1	Manufacturer's name or trade mark.	See Page 1		P
1.2	Type reference.	See Page 1		P
2	SWITCH ENVIRONMENT/MOUNTING			--
2.1	Degree of protection provided for the switch when mounted according to documentation.	I P	20 code of IEC 60529	P
2.2	Degree of protection against electric shock, from outside an appliance.	☐ Class 0 ☒ Class II	☐ Class I ☐ Class III	P
2.3	Method of mounting and actuating the switch.			P
	Method of providing earthing if appropriate.			N/A
	Method(s) of mounting and orientation(s) declared.			N/A
2.4	Pollution degree micro.	☐ 1 ☒ 2 ☐ 3		P
2.5	Pollution degree macro.	☐ 1 ☒ 2 ☐ 3		P
3	TEMPERATURE			--
3.1	Ambient temperature limits if $\neq 0 - 55^{\circ}\text{C}$.		$^{\circ}\text{C}$	N/A
4	ELECTRICAL LOAD / CONNECTION			--
4.1	Rated voltage or voltage range.	250	V	P
4.2	Nature of supply.	~		P
4.3	Frequency or frequency range.		Hz	N/A
4.4	The rated current and the electrical load type.	16		P
4.5	For switches for more than one circuit, the current applicable to each circuit and to each			N/A

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
	If these are different from each other, then it shall be made clear to which circuit or which terminal the information applies.			N/A
4.6	Rated impulse withstand voltage.	2500	V	P
4.7	Overvoltage category.	Category II		P
4.8	Duty-type and relevant (ON/OFF-time)			N/A
4.9	Type and/or connection of switch.			N/A
4.10	Configuration of switching device:			P
5	TERMINALS / CONDUCTORS			--
5.1	All terminals suitably identified			N/A
	☐ or their purpose self-evident ☐ or the switch circuitry visually apparent			N/A
	For terminals intended for the connection of supply conductors, the identification may take	☐ of a letter L, ☐ a number or of an arrow		N/A
5.2	Terminals for earthing marked with the protective earth symbol			N/A
5.3	The method of connection and disconnection for push-in terminals.			N/A
5.4	The type of conductor to be connected to the terminal.	☐ solid, ☐ stranded and/or flexible		N/A
5.5	The suitability of the terminal for connection of conductors indicated:			--
	• maximum conductor diameter		mm	N/A
	• minimum conductor diameter		mm	N/A
5.6	Suitability for interconnection of two or more conductors to terminals.			N/A
5.7	The type of solder terminal mechanical securement before soldering, iron, bath, etc.			N/A
5.8	For terminals with specific connection method, such as:			--
	• solder temperatures or process declared			N/A
5.9	Terminals for prepared conductors indicate the method for preparing the conductors.			N/A
5.10	For tabs with dimensions other than those according to IEC 61210:			--
	• the appropriate female connector			N/A
6	OPERATING CYCLES / SEQUENCE			--
6.1	Number of operating cycles.	1E4		P
6.2	Operating sequence for switches with more than one circuit.			N/A
6.3	Forces applied to end stops or full travel of actuating member.			N/A
7	SIGNAL INDICATORS			--

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
7.1	Maximum power of tungsten filament signal lamps.		W	N/A
	Marking visible when replacing lamp.			N/A
7.2	Intended function or operation of the signal indicator.			N/A
8	CIRCUIT DISCONNECTION			--
8.1 – 8.4	☐ Electronic ☐ Micro ☒ Full ☐ Combination			P
9	INSULATING MATERIALS			--
9.1	Tracking ☒ PTI or ☐ CTI	175		P
9.2	Glow-wire temperatures.	850		P
10	COOLING CONDITION			--
10.1	☒ Not requiring forced			P
10.2	☐ cooling Requiring cooling			
10.3	☐ Direction of air for forced			
10.4	☐ cooling Speed of air for forced			
10.5	☐ cooling Thermal resistance of			
10.6	☐ heat sink Incoming temperature, density and other			
11	PROTECTIVE DEVICE			--
11.1	Rated current/fusing characteristic/breaking capacity of replaceable built-in protection			N/A
11.2	Type/function of non-replaceable built-in			N/A
11.3	External protective device rated current, fusing characteristic, breaking capacity.			N/A
12	TEST CONDITIONS			--
12.1	Test condition for switches having a contact making and breaking speed independent from the speed of actuation			N/A
12.2	Special requirements for testing such as minimum electric load in 3.2.11, thermal current			N/A
8.2	Symbols (when used)			--
	☒ Ampere (A) ☒ Volt (V) ☒ Watt (W) ☐ Volt-amperes (VA) Alternating current (single-phase) ☐ or a.c. ☐ or a.c. Direct current ☐ or d.c. or			P
	Tungsten filament lamp load:			N/A
	Protective earth symbol:			N/A
	Hertz – Frequency of supply	Hz		N/A
	Number of operating cycles	See 8.5		P
	Symbol for micro-disconnection	μ		N/A

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Clause	Requirement +Test	Result - Remark		Verdic
	☐ "OFF"-position or the direction of actuation to the "OFF" position ☐ "ON"-position or the direction of actuation to the			P
	Electronic disconnection	ε		N/A
8.3	Load rating			--
8.3.2	Substantially resistive			P
8.3.3	Resistive load and motor load			N/A
8.3.4	Resistive load and capacitive load			N/A
8.3.5	Resistive load and tungsten filament lamp load			N/A
8.3.6	Declared specific load			N/A
8.3.7	Inductive loads			N/A
8.3.8	General Purpose loads			N/A
8.4	Temperature rating			--
8.4.1	☐ 25 T 85 (-25 °C up to +85 °C) (<i>example</i>) ☐ T 85 (0 °C up to +85 °C) (<i>example</i>)			N/A
	If no information is given:			--
	• rated ambient temperature range is 0 – 55 °C			N/A
8.4.2	Switches only partially suitable for a rated ambient temperature > 55 °C:			--
	• T85/55 or 25T85/55 (<i>examples</i>)			N/A
8.5	Operating cycles			--
	Information about rated operating cycles by using symbol "E", indicating exponent.	1E4		P
8.6	Switches intended for use in Class II equipment or appliances			--
	The symbol  shall not be marked on the			P
8.7	Required marking			--
	Shall preferably be on the body of the switch.			P
	Not on screws, removable washers or other removable.			P
	Marking for replaceable fuse incorporated in a switch shall be placed on the fuse-holder or in the proximity of the fuse.			N/A
	The characteristics may be indicated by symbols (see IEC 60127).			N/A
8.8	Legibility and durability of marking			--
	The requirements of 8.1 to 8.8 is checked by inspection and by rubbing the marking by hand for 15 s with a piece of cotton cloth:			--
	a) soaked with water and			P

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Clause	Requirement +Test	Result - Remark	Verdic
	b) again for 15 s soaked with aliphatic solvent hexane		P
	After these tests, the marking shall still be legible.		P
8.9	Switches with their own enclosure		--
	• "OFF"-position, clearly indicated		N/A
	Switches with micro-disconnection or electronic disconnection:		--
	• not marked with symbol "O" for the "OFF"		N/A
	Switches where marking of switch position is impossible or leads to misunderstanding:		--
	• direction of actuation(s) is marked		N/A
	Switches having more than one actuating member:		--
	• marking shall indicate, for each of the actuating members, the effect achieved by		N/A
	For switches classified as unique type, 7.10.1, the OFF marking is according to the manufacturer's declaration.		N/A
	For push-button switches with a single button the OFF position is not required to be marked.		N/A

9	PROTECTION AGAINST ELECTRIC SHOCK		--
9.1	Switches shall be constructed so that there is adequate protection against contact with live parts in any position of use when the switch is mounted and operated as in normal use. Checked by inspection and by the following test:		--
	a) applied to accessible parts of the switch when mounted in accordance with the manufacturer's documentation, with any detachable parts, except lamps with caps, removed;		P
	b) The insulating properties of lacquer, enamel, paper, cotton, oxide film on metal parts, beads and sealing compounds which soften in heat:		--
	• shall not be relied upon to give the required protection against contact with		N/A
	c) Probe B according to IEC 61032 (IEC 60529:1989, Figure 1) jointed test finger		--
	• applied without force in every possible		N/A
	If Probe B is able to enter the opening:		--
	• the finger is repeated with an electrical contact indicator to show contact		N/A
	d) Probe 11 according to IEC 61032 straight unjointed test finger is applied:		--
	• with 20 N of force to any opening that prevents the entry of probe B		N/A
	e) Test pin Probe 13 according to IEC 61032 is applied to:		--

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Clause	Requirement +Test	Result - Remark	Verdic
	openings in insulation materials and unearthed metal parts without force in every possible position		N/A
	It shall not be possible to touch bare live parts.		P
	For switches which have any parts of double insulation construction:		--
	not possible to touch with the jointed test finger unearthed metal parts separated from live parts by basic insulation, or by the basic		P
9.1.1	Accessible metal parts which are needed for the operation of a switch may be connected to live parts by means of a protective impedance:		--
	The protective impedance shall consist of resistors and/or capacitors comply with one of the following at least:		--
	☐ a) 2 independent resistors of the same nominal value in series complying with 24.4; ☐ b) 2 independent capacitors in series, of the same value complying with class Y2 according to IEC 60384-14; ☐ c) 1 resistor complying with 24.4 and 1 capacitor complying with class Y2 according to IEC 60384-14 in series		N/A
	The removal of protective impedances, or their short-circuiting, possible:		--
	only by destruction of the switch or by rendering the electronic switch obviously		N/A
	The protective impedances so designed and arranged that along their surfaces and between their surfaces:		--
	the requirements according to Clause 20 are		N/A
9.1.2	If a cover or cover-plate or a fuse can be removed without the use of a tool or if the instruction for use specifies that, for the purpose of maintenance, when replacing the fuse, covers and cover-plates fastened by means of a tool have to		--
	protection against contact with live parts assured even after removal of the cover or		N/A
	Checked with Probe C according to Figure 3 IEC 61032:1997, through the hole, applying up to 20 N of force.		--
	The pin shall not touch live parts.		N/A
9.1.3	An actuating member fixed adequately if the removal of the actuating member gives access to live parts.		N/A
9.2	For switches for appliances other than of Class III, actuating members shall be of one of the following types:		--
	a) insulating material;		P
	b) metal separated from basic insulated parts by supplementary insulation;		N/A
	c) metal separated from live parts by double or reinforced insulation;		N/A

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Clause	Requirement +Test	Result - Remark	Verdic

	d) for electronic switches, metal separated from live parts by protective impedances		N/A
	Item d) measurements carried out between either a single accessible metal part or any combination of accessible metal parts and earth, through a non-inductive resistor of 2 kΩ:		--
	☐ at rated voltage (and rated load in ON-state) in ON- and OFF-state and/or at lowest and highest setting value		N/A
	The current not exceed, in any measurement:		--
	• 0,7 mA (<i>peak</i>) for a.c. ≤ 1 kHz or 2 mA for d.c.	mA	N/A
	For frequencies > 1 kHz:		--
	• the limit of 0,7 mA is multiplied by the value of the frequency in kHz, but shall not exceed 70	mA	N/A
9.3	Capacitors not connected to unearthed metal parts which are accessible when the switch is		P
	Metal casing of capacitors separated by supplementary insulation from accessible unearthed metal parts, when the switch is		N/A

10	PROVISION FOR EARTHING		--
10.1	Switches for Class II appliances:		--
	• have no provision for earthing the switch or parts thereof		P
	Interconnections for maintaining the earthing circuit are permitted.		N/A
10.2	Earthing terminals, earthing terminations and other earthing means:		--
	• not connected electrically to any neutral terminal		N/A
10.3	Accessible metal parts of switches for Class I appliances:		--
	• have provision for earthing		N/A
10.3.1	Parts separated from live parts by double or reinforced insulation, and parts screened from live parts by metal parts connected to an earthing terminal, earthing termination, or other earthing means:		--
	• not regarded as likely to become live in the event of an insulation fault		N/A
10.3.2	Accessible metal parts of switches connected to earth through their fixing means:		--
	• provided the provision is made for clean metallic surfaces at the connection points		N/A
10.4	The connection between an earthing terminal/termination or other earthing means, and parts required to be connected thereto, is of low resistance.		--

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Clause	Requirement +Test	Result - Remark		Verdic
	a) a current of $1.5I_R$ but ≥ 25 A a.c. with ≤ 12 V, passed between the type of used earthing and each of the parts in turn		A	N/A



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Clause	Requirement +Test	Result - Remark		Verdic
	The resistance not exceeding 50 mΩ.		mΩ	N/A
10.5	Earthing terminals of all types for unprepared conductors:			--
	is of a size $\geq$ required for the corresponding current carrying terminal			N/A
	Not possible to loosen the clamping means without the aid of a tool, and they be adequately locked against unintentional loosening.			N/A
10.5.1	Terminals according to 11.1 and 11.2:			--
	provide sufficient resilience for adequate locking against unintentional loosening			N/A
10.5.2	Switch subjected to excessive vibration or temperature cycling:			--
	special provisions are used			N/A
10.6	Thread-cutting and thread-forming screws may be used to provide earthing continuity;			--
	provided it is not necessary to disturb the connection in normal use			N/A
	and at least 2 screws are used for each connection (<i>see tests in 19.2</i>)			N/A
10.7	All parts of an earthing terminal:			--
	no risk of corrosion			N/A
10.8	The body of an earthing terminal shall be:			--
	☐ of brass ☐ or other metal no less resistant to corrosion			N/A
	Unless:			--
	☐ it is a part of the enclosure when any screws or nuts be of brass plated steel complying with 19.3 or other metal no less resistant to corrosion and rusting ☐			N/A
10.9	If the body of an earthing terminal is part of a frame or enclosure of aluminium or aluminium alloy:			--
	precautions taken to avoid risk of corrosion resulting from contact between copper and aluminium or its			N/A
11	TERMINALS AND TERMINATIONS			N/A
11.1	Common requirements to terminals			--
11.1.1	General			--
	Terminals enable a safe and reliable connection for the conductors declared under the conditions of the intended use.			N/A
	Screws and nuts for clamping the conductors:			--

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Clause	Requirement +Test	Result - Remark	Verdic
	shall not serve to fix any other part		N/A
	they may hold the clamping part in place or prevent it from turning		N/A
	Clamping shall be between metal surfaces except for terminals:		--
	intended to be used in circuits carrying a current $\leq 0,2$ A, one of the surfaces may be non-		N/A
11.1.2	Design of terminals		--
	so designed that a suitable conductor may be inserted into the aperture to the designed depth without undue force and undue damage to the conductor and terminal		N/A
11.1.3	Insulation		--
	Terminals shall be designed so that there is no reduction of the insulation strength:		--
	when the conductor is attached to the terminal as declared by the manufacturer (<i>see clause</i>		N/A
11.1.4	Connection		--
	A terminal shall be designed so that a conductor cannot slip out:		--
	while being connected or while the switch is being operated as intended (<i>checked by TT1</i>)		N/A
11.2	Fixing of terminals		--
11.2.1	Terminals shall be fixed so, that they will not work loose:		--
	when the conductor is connected or		N/A
	The intended removal of a conductor shall require an action other than a pull at the		N/A
	Does not preclude floating terminals or terminals mounted on floating elements, used in some stack- type switches.		N/A
	For terminals declared 7.20.14 (<i>flat quick-connect termination</i>) the tab shall:		--
	allow the application and withdrawal of female connectors without damage to the switch (<i>checked by TT2</i>)		N/A
11.2.2	For terminals declared 7.20.13 (<i>push in</i>) in combination with conductors declared unprepared (7.20.1):		--
	checked by inspection and 11.8.4		N/A
11.3	Location and shielding of terminals		--
11.3.1	Terminals shall be located or shielded so that when wires are connected, there:		--
	is no reduction of the insulation strength of the terminals, live parts or to accessible		N/A
11.3.2	Terminals suitable for the connection of flexible conductors (7.20.3) shall be located or shielded so that:		--

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Clause	Requirement +Test	Result - Remark		Verdic
	there is no risk of contact between live parts and accessible metal parts			N/A
11.3.3	For switches for class II appliances there shall be no risk of contact:			--
	between live parts and metal parts separated from accessible metal parts by supplementary insulation only (<i>checked by inspection and for stranded wires by TT3</i>)			N/A
11.4	Terminals for interconnection of more than one conductors			--
	Terminals to be used for the interconnection of more than one conductor (7.20.9)			--
	designed so that the combination of the most onerous sizes connected simultaneously, does not result in a hazard (<i>checked by inspection and TT4</i>)			N/A
11.5	Thermal stress			--
	Terminals shall withstand thermal stress occurring in normal use.			--
	Checked according to TE2 in Clause 17 of :	☐ IEC 61058-1-1:2016 or ☐ IEC 61058-1-2:2016.		N/A
11.6	Test sequences			--
	Depending on terminals allowing the connection of prepared or unprepared conductors:			--
	the tests are conducted according Table 5 in the sequence with increasing TT-number	See table 5.		N/A
11.7	Conductor escape test (TT1)			--
	Conductors as declared by the manufacturer.		mm ²	N/A
	Or of maximum cross sectional areas in Table 4.		mm ²	N/A
	The conductor is inserted into the terminal over a length equal to the minimum distance			N/A
	Or, if no distance is prescribed, until an end-stop is reached.			N/A
	Or until the conductor just projects from the far side of the terminal and in the position most likely to assist a strand to escape.			N/A
	Test is repeated with the terminal fitted with conductors as declared.		mm ²	N/A
	Or of minimum cross sectional area in Table 4		mm ²	N/A
	Terminals declared suitable for prepared conductors (7.20.2), the declared type used.			N/A
	Terminals declared for rigid conductors (7.20.5), before insertion into the terminal:			--
	the wires are straightened			N/A
	Terminals declared for stranded conductors (7.20.3 or 7.20.4), these are twisted:			--

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Clause	Requirement +Test	Result - Remark		Verdic
	in one direction, so a twist of one complete turn in a length of approximately 2 cm is obtained			N/A
	Terminals declared screw type terminals (7.20.12) these are:			--
	tightened with the torque according to Table 10	See table 10.		N/A
	Terminals declared for the connection of two or more conductors(7.20.9):			--
	the test is repeated with the terminal fitted with the declared numbers of conductors			N/A
	Terminals declared for solder or welding terminals (7.20.15 or 7.20.16) or if the connection is designed so that a slip out is prevented by design:			--
	no test is necessary			N/A
	After the test, the conductor shall not have:			--
	escaped into or through the gap between the clamping means and retaining device			N/A
11.8	Terminal displacement test (TT2)			--
11.8.1	Connection test			--
	A conductor connected and disconnected 10 times using the parameters of TT1, if no test according to			N/A
	Terminals declared for only one time connection (7.20.10), test is not required.			N/A
	After the test the terminal:			--
	have not displaced from its intended position			N/A
11.8.2	Screw-type terminal			--
	a) is fitted with a conductor of the smallest		mm ²	N/A
	or declared cross sectional area as in Table 4	See table 4.		N/A
	The terminal screw being tightened with a torque as specified in appropriate column of	See table 10.		N/A
	b) If the screw has a hexagonal head with a slot, the torque applied is as in column III of Table	See table 10.		N/A
	c) The conductor is subjected to a pull force as in Table 6, applied without jerks, for 1 min, in the direction of the axis of the conductor		N	N/A
	d) Repeat a) to c) with the largest wire size.		mm ²	N/A
	Terminals declared for the connection of two or more conductors(7.20.9):			--
	the test is repeated with the terminal fitted with the declared number of conductors			N/A
	Terminals declared suitable for two or more conductors (7.20.9):			--
	the appropriate pull is applied consecutively to each conductor			N/A
	During the test:			--

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Clause	Requirement +Test	Result - Remark		Verdic
	the conductor shall not move noticeably in the terminal			N/A
11.8.3	Flat quick-connect termination			--
	For terminals declared 7.20.14 (flat quick-connect termination) compliance is:			--
	checked by applying the axial forces without jerks to the tab equal to those specified in IEC 61210:2010, Table 6 (<i>retention force</i>)		N	N/A
	No significant displacement or damage shall occur.			N/A
11.8.4	Push in terminals.			--
	Conductors fitted as declared by the manufacturer.		mm ²	N/A
	Or of maximum cross sectional areas as in Table	See table 4.		N/A
Step a)	Insert of the conductor into the terminal.			N/A
Step b)	Twist through 90° in an axial direction.			N/A
Step c)	Apply a pull force in opposite to direction of insertion as in Table 6; without jerks, for 1		N	N/A
Step d)	Disconnect the conductor by the designed disconnect means other than a pull on the conductor only.			N/A
Step e)	New conductor for each of the next 3 insertions indicated above.			N/A
Step f)	At the 5th insertion, the conductor for the 4th insertion is reused.			N/A
	The test repeated with the terminal fitted with conductors as declared .		mm ²	N/A
	Or of minimum cross sectional area according to Table 4.	See table 4.		N/A
	Compliance of the test:			--
	During the application of the pull, the conductor shall not come out of the terminal.			N/A
	After these tests, neither the terminal nor the clamping means shall have worked			N/A
11.9	Strand escape test (TT3)			--
	The insulation from the end of a stranded conductor having the minimum or declared cross sectional area as in Table 4 is removed for a	See table 4.		N/A
	One strand of the flexible conductor is separated and left free.			N/A
	The remainder are fully inserted into the terminal and clamped.			N/A
	Terminals declared for unprepared stranded conductors 7.20.3 and 7.20.4:			--

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Clause	Requirement +Test	Result - Remark		Verdic
	The free strand shall be bent without tearing the insulation back and without making sharp bends in every possible direction.			N/A
	The free strand of the flexible conductor shall not touch relevant parts mentioned in 11.3.			N/A
	The free strand of a flexible conductor connected to an earthing terminal shall not touch any live			N/A
11.10	Multiple conductors (TT4)			--
	Conductors fitted as declared by the manufacturer.		mm ²	N/A
	Or of maximum cross sectional areas as in Table 4	See table 4.		N/A
	For conductors classified 7.20.13, perform steps a) to c) of TT2 Clause 11.8.4.			--
Step a)	• Insert the conductor into the terminal, either as far as possible or insert so that adequate connection is obvious.			N/A
Step b)	• Twist it through 90° in an axial direction.			N/A
Step c)	• Apply a pull force in opposite to direction of insertion as in Table 6; applied without jerks, for 1 min.		N	N/A
	For conductors classified 7.20.12 perform steps a) to c) of TT2 Clause 11.8.2.			--
	a) The screw-type terminal is fitted with a conductor of the smallest or declared cross sectional area as in Table 4	See table 4.		N/A
	The terminal screw being tightened with a torque as specified in appropriate column of	See table 10.		N/A
	b) If the screw has a hexagonal head with a slot, the torque applied is as in column III of Table	See table 10.		N/A
	c) The conductor is subjected to a pull force as in Table 6, applied without jerks, for 1 min, in the direction of the axis of the conductor		N	N/A
	Compliance of the test:			--
	During the application of the pull, the conductor shall not come out of the terminal.			N/A
	After these tests, neither the terminal nor the clamping means shall have worked			N/A

12	CONSTRUCTION	--
12.1	Constructional requirements relating to protection against electric shock	--
12.1.1	When double insulation is used the design shall be such that the:	
	• basic and the supplementary tested separately	N/A
	Unless compliance to the properties of both insulations is provided in another way:	--

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Clause	Requirement +Test	Result - Remark	Verdic
	a) Basic and supplementary insulation cannot be tested separately, the insulation is considered to be reinforced insulation.		P
	b) Specially prepared specimens, or specimens of the insulating parts.		P
12.1.2	Creepage distances and clearances not reduced, as a result of wear, below values in clause 20.		P
	If any conductive part of the switch becomes loose and moves out of position it:		--
	cannot get so disposed in normal use that creepage distances or clearances across supplementary or reinforced insulation are reduced		P
	For the purpose of this test:		--
	☒ not expected that two independent fixings will become loose at the same time ☐ parts fixed by screws or nuts provided with locking washers not liable to become loose ☐ springs and spring parts not become loose or fall out of position if they do not do so during the tests of Clauses 18 and 19		P
12.1.3	Integrated conductors is rigid and fixed,		N/A
	or insulated that creepage distances and clearances not reduced below values in Clause 20		N/A
	Insulation, if any, shall be such that it cannot be damaged during mounting or in normal		N/A
	If the insulation of a conductor is not at least electrically equivalent to that of cables and cords complying with the appropriate IEC standard or does not comply with the dielectric strength test made between the conductor and the metal foil wrapped around the insulation under the conditions specified in Clause		--
	the conductor is a bare conductor		N/A
12.1.4	Full disconnection or micro-disconnection can only be achieved using a:		--
	series mechanical contact		N/A
12.1.5	Electronic disconnection is formed by any parallel components or path across a series		N/A
	or when no mechanical contact is provided in the switch		N/A
12.2	Constructional requirements relating to safety during mounting and normal operation of the switch		--
12.2.1	Covers, cover plates, removable actuators and the like cannot be displaced or removed except by use of a tool.		P
	Fixings for a cover or cover plate do not serve to fix any other part except an actuating member.		P

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Clause	Requirement +Test	Result - Remark		Verdic
	Not possible to mount removable parts, such that indication of switch positions does not correspond with the actual switch position.			N/A
12.2.2	Fixing screws of covers or cover plates captive.			N/A
12.2.3	Switch not damaged when its actuating member is removed as intended.			N/A
12.2.4	Pull-cord insulated from live parts.			N/A
	Possible to fit or to replace it without removing parts causing live parts to become accessible.			N/A
12.2.5	Illuminated indicator incorporated in a switch, provides correct indication as declared by the manufacturer.			--
	Checked by connecting the switch to a voltage $\pm 10\%$ of marked U_L or U_N .		V	N/A
12.3	Constructional requirements relating to the mounting of switches and to the attachment of cords			--
12.3.1	Methods of mounting do not adversely affect compliance with this standard.			P
	Switch cannot rotate, or be displaced, and be removed from an appliance without the aid of a			P
	If removal of a part is necessary during the normal use, requirements of clauses 9, 15 and 20 is satisfied before and after such removal.			N/A
12.3.2	A conductor intended to be disconnected shall:			--
	• indicate an obvious method for insertion and disconnection of the conductors			P
	The intended disconnection of a conductor shall require an operation:			--
	• other than a pull at the conductor			P
12.3.3	Openings for the use of a tool intended to assist the insertion or disconnection			--
	• be clearly distinguishable from the opening for the conductor			N/A

13	MECHANISM		N/A
13.1	For DC switches with a voltage rating above 28 V dc in combination with a current rating above 0,1 A:		--
	• the speed of contact making and breaking shall be independent of the speed of		N/A
13.2	A switch with an intermediate position shall:		--
	• not create an unintended operation		N/A
13.3	When the actuating member is released		--

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Clause	Requirement +Test	Result - Remark	Verdic
	☐ it take automatically or stay in the ☐ position corresponding to the moving contacts except only one rest position		N/A
13.4	Cord-operated switch (pull cord) shall be constructed so that, after actuating the switch and releasing the cord:		--
	the relevant parts of the mechanism are in a position allowing the immediate performance of the next movement in the cycle of		N/A
13.5	Multi-pole switches makes and breaks all poles substantially together.		N/A
	Unless otherwise declared according to Table 3 "Operating sequence".		N/A
	The neutral may make before and break after the others.		N/A

14	PROTECTION AGAINST INGRESS OF SOLID FOREIGN OBJECTS, INGRESS OF WATER AND HUMID CONDITIONS		P
14.1	Protection against ingress of solid foreign objects		--
	Degree of protection as in 13.3 of IEC 60529.	IP20	P
	Detachable parts are removed.		N/A
	Switch which relies on mounting for the declared degree of protection:		--
	- mounted in or on a closed box to simulate the appliance - tests performed using this simulated assembly		N/A
	For numerals 5 and 6:		--
	test carried out according to category 2 with the specimen in the most unfavourable position to the manufacturer's declarations for a period of		N/A
	During the 8 h the specimen loaded alternatively 1 h with the maximum I _R and 1 h	A	N/A
	For the test for first characteristic numeral 5, the switch comply if:		--
	all actions function as declared		N/A
	pt at the terminals ≤ 55 K tested as in 16.2 at I_R and at 25 ± 10°C	K	N/A
	dielectric strength of 15.3 with no humidity treatment before application of test voltage 75 % of the test voltage in 15.3	V	N/A
	no transient fault between live parts and earth metal, accessible metal parts, or actuating members has occurred		N/A
	Test for 1 st characteristic numeral 6, no deposit of dust is inside the switch at the end		N/A

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
14.2	Protection against ingress of water Degree of protection against ingress of water when mounted and used as declared.			--
	Checked by tests in IEC 60529 with the switch placed in any position of normal use.			N/A
	Switches kept at 25 ± 10 °C for 24 h before being subjected to the test.		°C	N/A
	The test is carried out according to IEC 60529 as follows:			--
	☐ IPX1 – IPX2 switches as in 14.2.1 – 14.2.2 with the drain holes open ☐ IPX3 – IPX9 switches as in 14.2.3 – 14.2.9 with the drain holes closed			N/A
	a) Switch not electrically loaded during these tests.			N/A
	The water temperature shall not differ from that of the switch by more than 5 K.			N/A
	b) Detachable parts are removed.			N/A
	c) Switches incorporating separate gaskets, screwed glands, membranes or other sealing means, manufactured from rubber or thermoplastic materials			--
	• aged in a heating cabinet with an atmosphere having the composition and pressure of the ambient air and ventilated by			N/A
	d) Switches without T-rating (7.3.1), kept in the cabinet at a temperature of 70 ± 2 °C for		°C	N/A
	Switches with T-rating (7.3.2), kept in the cabinet at a temperature of $T + 30$ °C for		°C	N/A
	Switch according to 7.3.3, the “T” equals the lower of the two values following the letter T in 8.4.2.		°C	N/A
	Switches with glands or membranes are fitted and connected with conductors as in			N/A
	Glands tightened with a torque as in Table 11.	See table 11.		N/A
	Fixing screws for enclosures are tightened with a torque as in Table 10.	See table 10.		N/A
	e) Immediately after ageing, the parts are taken out of the cabinet and left at 25 ± 10 °C, avoiding direct daylight, for at least 16 h		°C	N/A
	f) Switch which relies on mounting for the declared degree of protection:			--
	• mounted in or on a closed box to simulate the appliance			N/A
	• tests performed using this simulated assembly			N/A
	g) For tests of 2 nd characteristic numerals 3 and 4, hand-held spray in IEC 60529 used.			N/A

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
	After the test, the switch shall withstand the dielectric strength test specified in 15.3.		V	N/A
	And inspection show no trace of water on insulation which could result in a reduction of creepage and clearance below the values			N/A
14.3	Protection against humid conditions			--
	Cable inlet openings and drain-holes left open. Drain-hole for a water-tight switch is	Yes	No	N/A
	a) Before being placed in the humidity cabinet, the specimens are brought to a temperature between t and t + 4 °C.	25	°C	—
	b) Detachable parts removed and subjected to the humidity treatment with the main part.	Yes	No	N/A
	c) Humidity treatment carried out in a humidity cabinet containing air maintained between 20 °C and 30 °C, with a relative humidity above	93	%	—
	The specimens kept in the cabinet for 96 h.	96	h	—
	d) After removing the specimens from the cabinet, the testing of 15.2 and 15.3:			--
	• completed within 2 h under ambient			P
	The switch does not show any damage			P

15	INSULATION RESISTANCE AND DIELECTRIC STRENGTH	P
15.1	General requirements.	--
	Checked by the tests of 15.2 and 15.3, immediately after test of 14.3.	P
	The foils not pressed into openings but are pushed into corners and the like by means of the jointed test finger (test probe B according to IEC	P
	Basic insulation and supplementary insulation cannot be tested separately:	--
	• The insulation is subjected to the test voltages specified for reinforced insulation.	P
	The tests are not carried out across protective impedances and poles interconnected by components.	N/A
15.2	Measurement of insulation resistance	--
	The insulation resistance is measured with a DC voltage of ~ 500 V applied, being made 60 s after application of the voltage.	P
	The insulation resistance not less than specified in Table 7.	See table 7. P
15.3	Insulation test voltage	--

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
	The test voltage raised uniformly from a value not greater than the rated U_N to the value specified in Table 8 within not more than 5 s and held at that value for 60 s.	See table 8.		P
16	HEATING			P
16.1	General requirements			--
	Switches shall be constructed so that they do not attain excessive temperatures in normal			P
	The materials used shall be such that the performance of the switches is not adversely affected by operation in normal use at the rated temperature of the switch.			P
16.2	Contacts and terminals			--
	The material and design of the contacts and terminals shall be such that the operation and performance of the switch is not adversely affected by their oxidation or other deterioration.			--
	Compliance is checked by Clause 17.			P
16.3	Other parts			--
16.3.1	Switch parts other than the contacts and terminals, in normal use shall not:			--
	attain temperatures which impair the performance or operation of the switch or create a hazard to the user (<i>checked by</i>			P
16.3.2	Insulation for conductors provided with the switch shall be rated:			--
	not less than the relevant maximum temperature rating of the switch (<i>checked/verified on data provided by switch</i>			P
16.4	Heating test			--
	Unless declared otherwise, the test is carried out on 3 specimens mounted as declared by the manufacturer.			--
	a) Conductors of an approximate length of 1 m, are fitted to the terminals or leads.			N/A
	The cross-sectional area as declared.		mm ²	N/A
	Or specified in Table 4 "medium".	See table 4.		N/A
	b) Connected conductors when provided are joined to conductors in item a) per the manufacturer's instructions.			N/A
	c) Screw terminals and/or nuts are tightened with a torque equal to 2/3 of the appropriate column of Table 10.		Nm	N/A
	d) Heating cabinets for testing switches without forced convection or a draught free			P

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
	e) The temperature of the air in the heating cabinet is measured as near as possible to the centre of the space occupied by the specimens and at a distance not closer than			P
	f) Switches declared as 7.3.2 or 7.3.3, are placed in a heating cabinet and the temperature is raised to the maximum T-rating of the switch.		°C	N/A
	The temperature of the cabinet maintained at $T \pm 5^{\circ}\text{C}$ ($T \pm 5\%$ ($T \pm 0.05T$))		°C	N/A
	g) Partially suitable rated switches as 7.3.3, with accessible parts rated 0 to 55 °C, exposed to a temperature $\leq 55^{\circ}\text{C}$.		°C	N/A
	The internal switch enclosure with a T rating is tested as described for "all parts".		°C	N/A
	h) The temperature of mounting surfaces of the test equipment is between T and 20 °C.		°C	N/A
	i) The specimens are subjected to 20 operating cycles with no current flowing.			P
	The actuating member is left in the most unfavourable "ON" position.			P
	If more "ON" positions, then the verification shall be realized at the most unfavourable one			N/A
	Actuating members of biased switches are fixed in the declared "ON" position.			N/A
	j) Multi-way switches are loaded as specified in 5.3 resulting in the maximum heating.			N/A
	k) Switches for DC or AC and DC voltage where no polarity is given, the test with DC voltage is performed in both polarities and an average value calculated.			N/A
	l) During the test, the switch state does not			P
	Fuses and other protective devices not operate.			P
	m) Any convenient AC or DC voltage may be used for the test circuit as far as the result is not affected.			N/A
	n) The load is adjusted to allow the maximum rated current I_r if not other declared.			P
	o) Switch provided with components generating heat in addition to the heat generated by the contacts, are operated in the most			N/A
	p) The ON period is maintained with the test current until a constant temperature at the terminals is attained.			N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	A temperature considered constant when 3 successive readings taken at intervals of 5 min indicate no change greater than $\pm 2^{\circ}\text{C}$.		N/A
	For a cycling load, after 1 h, the maximum temperature of the cycle is		P
	q) Thermocouples shall measure the temperature of the surfaces of the switch indicated below.		P
	During the test, the temperatures necessary to perform the ball pressure test of 21.1		P
	The non-metallic surfaces likely to attain the highest temperature are measured without disassembling the switch.		P

17	ENDURANCE		P
	See IEC 61058-1-1 for mechanical switch testing.		P
	See IEC 61058-1-2 for electronic switch testing.		N/A

18	Mechanical strength			P
18.1	General requirements			--
	Accessible parts shall have adequate mechanical strength to withstand a minimum level of force during normal use.			P
18.2	Impact			--
	Switches rated;			--
	• $\geq 0\text{ }^{\circ}\text{C}$ are tested at $25\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$	25	$^{\circ}\text{C}$	P
	• $< 0\text{ }^{\circ}\text{C}$, are cooled to the minimum rated temperature $T + 0/-5\text{ }^{\circ}\text{C}$ for 2 h prior to		$^{\circ}\text{C}$	N/A
	The impact is delivered using the spring hammer test apparatus of IEC 60068-2-			--
	The impact is equal to:			--
	• $0,5\text{ Nm} \pm 0,04\text{ Nm}$,			P
	• for foot operated switches: $1,0\text{ Nm} \pm 0,05\text{ Nm}$			N/A
	One specimen is mounted in the test plate of Figure 11.			P
	Remove the mounting device and specimen from the cold cabinet, when required.			P
	Immediately apply 3 blows, in a direction perpendicular to the switch.			P
18.3	Pull			--
18.3.1	Cord-operated switches are submitted to an additional pull test as follows:			--

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
	- mounted as declared by the manufacturer - the pull-cord is subjected to a force, without jerks - first for 60 s in the normal direction - then for 60 s in a direction 45° maximum from the normal direction - minimum values of the pull force as in Table 9 or three times the values of the normal operating force if that is greater			--
	The sample shall not be damaged in a way that reduces the electrical safety.	See table 9.		N/A
18.3.2	Pull (switches other than cord operated switches).			--
	Testing is completed at 25 °C ± 10 C.		°C	N/A
	A pull force is applied for 60 s to try to pull off the actuating member.			N/A
	The pull to be applied is 15 N.			N/A
	But if the actuating member is intended to be pulled in normal use,			--
	The pull force is increased to 30 N.			N/A
18.4	Push			--
	A push force of 30 N, using a switch not subjected to the pull force, shall be:			--
	applied for 60 s to try to push in the actuating members			N/A
	The sample shall not be damaged in a way that reduces the electrical safety.			N/A

19	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
19.1	General requirements for electrical connections		--
	Contact pressure is not transmitted through insulating material other than		
	☐ cerami ☐ c pure ☐ mica other material no less suitable there is visual evidence of sufficient resiliency in the metallic parts to compensate for any		N/A
	The suitability of the material is considered in respect to the stability of the dimensions within the temperature range applicable to the switch.		N/A
	This requirement is not applicable to connections internal to a switch where the connection is used for:		--
	• lamps for indicating purposes		N/A
	• and where the current in this circuit is ≤ 20 mA		N/A
19.2	Screwed connections		--
19.2.1	Screwed connections, not tested in Clause 11, electrical or other:		
	• withstand the mechanical stresses occurring in normal use		N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
19.2.2	Screws transmitting contact pressure		--
	• is in engagement with a metal thread		N/A
	Such screws not be of metal which is		--
	• soft or liable to creep, as zinc or aluminium		N/A
19.2.3	Mechanical connections used during installation of switches may be made of using thread-forming or thread-cutting tapping screws:		--
	• only if the screws are supplied together with the piece in which they are intended to be		N/A
	Thread-cutting tapping screws intended to be used during installation:		--
	• captive with the relevant part of the switch		N/A
19.2.4	☐ Thread-forming (<i>metal sheet</i>) screws not used:		--
	☒ for the connection of current-carrying parts unless they clamp directly in contact with each other and are provided with means of		N/A
	☐ Thread-cutting (<i>self-tapping</i>) screws not used:		--
	☐ for electrical connection of current-carrying parts unless they generate a full metric ISO thread or a thread of equivalent effectiveness		N/A
	☒ Such screws not used:		--
	☒ if likely to be operated by the user or installer unless the thread is formed by a swaging		N/A
	☐ The screws or nuts are tightened and loosened:		--
	☒ 10 times with thread of insulating material; 5 times in all other cases		N/A
	☐ Nuts concentric with the button or lever are tightened and loosened 5 times.		--
	☒ insulating material $\Rightarrow$ the torque is 0.8 Nm are of metal $\Rightarrow$ the torque is 1.8 Nm		N/A
	Screws and nuts are tightened and loosened by means of a suitable test screwdriver or		N/A
	The torque applied when tightening being equal to that specified in the appropriate column of Table 10, if not otherwise specified.	See table 10.	N/A
	During the test:		--
	• terminals shall not work loose		N/A
	• and damage that could impair the further use of the screwed connection		N/A
19.2.5	Switches having screwed glands are submitted to the following test.		--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Screwed glands fitted with a cylindrical metal rod having a diameter equal to the nearest integer value less than the internal diameter of the packing, in millimetres		N/A
	The glands then tightened by means of a suitable spanner, the torque specified in Table 11 being applied to the spanner for 60 s.	See table 11.	N/A
19.2.6	Correct introduction of the screws which are operated during mounting or connection of the switch into the screw holes or nuts shall be ensured.		--
	Compliance checked by inspection and manual		N/A
19.2.7	Screws which make a mechanical connection between different parts of the switch shall be locked against loosening if the connection carries current.		--
	Rivets used for current carrying connections shall be secured:		--
	against loosening if these connections are subject to torsion in normal use		N/A
	Sealing compound which softens in heat provides adequate locking:		--
	only for screw connections not being subject to torsion in normal use		N/A
19.2.8	Screws and nuts for clamping the conductors shall have:		--
	a metric ISO standard thread or a thread comparable in pitch and mechanical		N/A
19.3	Current-carrying parts		--
	Current-carrying parts and parts in an earthing path:		--
	have adequate mechanical strength and resistance to corrosion	inspection checked by Clause 22	P

20	CLEARANCES, CREEPAGE DISTANCES, SOLID INSULATION AND COATINGS OF RIGID PRINTED BOARD ASSEMBLIES		P
20.1	Generally requirements		--
	Compliance is checked:		--
	with detachable parts removed		P
	and movable parts which can be assembled in different orientations placed in the most unfavourable position		P
	Distances through slots or openings in surfaces of insulating material are:		--
	measured to a metal foil in contact with the surface		P
	The foil is pushed into comers and the like by means of:		--
	the jointed test finger of IEC 61032 Probe B but is not pressed into openings		P
	A force is applied to bare conductors and accessible surfaces in order to attempt to reduce clearances when making the measurement. The force is:		--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	2 N for bare conductors. 30 N for accessible surfaces.		P
	When applied to openings as specified in 9.1, the distance through insulation between live parts and the metal foil:		--
	not reduced below the specified values		N/A
20.2	Clearances		--
20.2.1	General		--
	The clearances shall be dimensioned to withstand the rated impulse voltage declared by the manufacturer according to 7.12 considering the:		--
	rated U_n and overvoltage category in annex E		P
	pollution degree declared by the manufacturer		P
20.2.2	Clearances for basic insulation $\geq$ the values given in Table 12	See table 12.	N/A
	Smaller clearances except those in Table 12 with note 5 may be used if the switch meets the U_{imp} test of annex G:		--
	but only if the parts are rigid or located by mouldings,		N/A
	or if the construction is such that there is no likelihood of the distances being reduced by distortion		N/A
	or by movement of the parts during mounting, connection and normal use		N/A
20.2.3	Clearances for functional insulation $\geq$ the values for basic insulation in 20.2.2.		P
20.2.4	Clearances for supplementary insulation $\geq$ the values given in Table 12.	See table 12.	N/A
20.2.5	Clearances for reinforced insulation $\geq$ the values for basic insulation in 20.2.2 but using the next higher step for the rated U_{imp} in Table 12.	See table 12.	P
20.3	Clearances for disconnection		--
20.3.1	Electronic disconnection.		--
	No clearances specified for electronic disconnection.		N/A
20.3.2	Micro disconnection		--
	Clearances between terminals and terminations fulfil functional insulation according to 20.2.3.		N/A
	No clearances are specified for the distance across the contacts.		N/A
	For switches with a rated impulse withstand voltage $< 1,5$ kV, clearances between other current-carrying parts which are separated by the action of the		--
	$\geq$ the actual value of the distance between the relevant contacts		N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Switches with a rated impulse withstand voltage of 1,5 kV the clearance of the other current carrying parts which are separated by action of the switch:		--
	• shall be at least 0,5 mm		N/A
20.3.3	Full disconnection		--
	Clearances for full disconnection $\geq$ the values in Table 12.	See table 12.	P
	Switches provided by two or more breaks in series:		--
	• the separation is the sum of the distances of the breaks		N/A
	Each break $\geq$ 1/3 of the prescribed distance.		P
20.4	Creepage distances		--
20.4.1	General – The creepage distances shall be dimensioned for the voltage expected to occur in normal use taking into account the pollution degree declared by the manufacturer according to 7.8 and 7.9 and the material group.		--
	Relationship between material group and proof tracking index (PTI) values:		--
	Material group.....: IIIa	$\Rightarrow$ PTI: 175	P
	PTI values obtained in accordance with annex C.		P
	CTI (Comparative tracking index) may be substituted for PTI in Clause	V	N/A
	Creepage distances for:		--
20.4.2	☐ basic insulation $\geq$ the values in Table 13	See table 13 and 14.	N/A
20.4.3	☒ functional insulation $\geq$ the values in Table 14	See table 13 and 14.	P
20.4.4	☐ supplementary insulation $\geq$ the values for basic insulation in 20.4.2	See table 13 and 14.	N/A
20.4.5	☒ reinforced insulation $\geq$ double the values for basic insulation in 20.4.2	See table 13 and 14.	P
20.4.6	☒ disconnection $\geq$ the values for functional insulation in 20.4.3	See table 13 and 14.	P
20.5	Solid insulation – withstanding electrical and mechanical stresses, thermal and environmental influences which may occur during the anticipated life of the		--
	• checked during tests of clauses 14, 15, 16 and 17 in IEC 61058-1-1:2016 or IEC 61058-1-		P
	Distance through accessible supplementary solid insulation		--
	• have a minimum value of 0.8 mm		N/A
	Distances through accessible reinforced solid insulation have minimum values:		--
	☐ for rated $U_{imp} \leq 1500$ V: ≥ 0.8 mm; for rated $U_{imp} \geq 2500$ V:		P
20.6	Coatings of rigid printed board assemblies.		--
20.6.2	Type 1 coating: The insulation distances of a printed board assembly with type 1 coating declared:		--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	comply with pollution degree 1 of clearances in Table 12 and of creepage distances in		N/A
	☐ Test specimens:		--
	☐ as in 5.1 and 5.2 of IEC 60664-3 ☐ or any representative rigid printed board assemblies as in 5.3 of IEC		N/A
20.6.3	Type 2 coating: A printed board assembly with type 2 coating declared shall comply with the requirements for solid insulation as specified in 20.5.		--
	checked by the relevant test of Clause 6 of IEC 60664-3:2003 with the test levels or conditions as given in Table 15 and the test specimens as in 20.6.2		N/A

21	FIRE HAZARD		P
21.1	Resistance to heat		--
21.1.2	Compliance is checked with new samples using the ball pressure test according to IEC 60695-10-2 at:		--
	☒ the temperatures using either the (A) heating test results (<i>see 21.1.3</i>) ☐ or (B) calculated temperatures (<i>see 21.1.4</i>)		P
	The Ø of the impression by the ball not > 2 mm.	See table ""Fire hazard"	P
21.2	Resistance to abnormal heat		--
	☐ Parts of non-metallic material shall be resistant to abnormal heat	See table "Resistance to abnormal heat"	P

22	Resistance to rusting		N/A
	Ferrous parts, the rusting of which might impair safety, adequately protected against		N/A

23	ABNORMAL OPERATION AND FAULT CONDITIONS FOR ELECTRONIC SWITCHES.		P
	See IEC 61058-1-1 for mechanical switch testing.		P
	See IEC 61058-1-2 for electronic switch testing.		N/A

24	Components for switches		N/A
24.1	General requirements Components which, if they fail, may cause risk of electric shock or fire shall comply - either with the requirements of this standard - or with the relevant IEC component standard as far as they reasonably apply		--
24.2	Protective devices		--

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
24.2.1	General Protective devices shall be in accordance with the relevant IEC publications and/or the additional requirements specified in the following sub-clauses: 24.2.2 fuses; 24.2.3 cut-outs; 24.2.7 protective devices which only decrease the current; 24.2.8 fusing resistors			--
24.2.2	Fuses:			--
	• comply with IEC 60127 or IEC 60269-3 and have a rated breaking capacity $\geq 1\ 500\ \text{A}$			N/A
	• unless any fault current through the fuse is limited to the breaking capacity of the fuse			N/A
24.2.3	Cut-outs – have adequate making and breaking capacity. If the cut-out in the switch is subjected to a reference temperature outside the range $0\ ^\circ\text{C}$ to $35\ ^\circ\text{C}$ or $55\ ^\circ\text{C}$:			--
	• samples tested at this reference temperature		$^\circ\text{C}$	N/A
	During the test:			--
	• the other conditions shall be similar to those occurring in the switch			N/A
	• no sustained arcing shall occur			N/A
	After the test:			--
	• the specimens show no damage impairing their further use or the safety of the switch			N/A
24.2.4	Non-resettable cut-outs: thermal links in accordance with IEC 60691 or bi-metallic single operation devices (<i>SOD</i>) according to IEC 60730-2-9 Compliance checked by the tests according to 24.2.3. After the test the supply shall be:			--
	• cut out and the temperature neither exceed the maximum temperatures specified by the manufacturer for abnormal conditions	See table "Non-resettable cut- outs – After the test"		N/A
24.2.5	Resettable, non-self-resetting cut-outs shall be:			--
	• in accordance with IEC 60730-1 and appropriate parts of IEC 60730-2			N/A
	• checked by the tests according to 24.2.3 and the following additional tests			N/A
	Resettable, non-self-resetting cut-outs in the load circuit of the switch:			--
	• tested at $1.1U_N$ of the switch and with loads as specified below		V	N/A
	The cut-outs are reset after each operation and caused to operate 10 times:			--
	• Cut-outs in switches for incandescent lamps tested in a non-inductive circuit and loaded with the conventional fusing current of the protecting fuse		A	N/A

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
	- Cut-outs in switches for speed control circuits, subjected to 2 series of 10 operations. In the: 1st series the cut-out closes a circuit with $9I_N$ 2nd series, the circuit $6I_N$ ($\cos \varphi = 0.6 \pm 0.05$). - Cut-outs for other types of load are tested with the opening and closing current as			--
		A		N/A
		A		N/A
		A		N/A
24.2.6	Self-resetting cut-outs – shall be in compliance with IEC 60730 series. Checked by the tests according to 24.2.3 and the following additional			--
	Self-resetting cut-outs in the load circuit of the switch tested at $1.1U_N$:	V		N/A
	Cut-outs in switches for incandescent lamps operated automatically for 200 cycles in a non- inductive circuit and loaded with conventional fusing current of the protecting	A		N/A
24.2.7	Protective devices which only decrease the current (for example PTC resistors) be:			--
	☐ of a thermistor type according to Annex J in IEC 60730-1:2013 ☐ or PTC-S thermistors according to IEC 60738-1			N/A
	Checked by the tests according to 24.2.3 and the following additional tests. For PTC-S thermistors, with power dissipation > 15 W for the rated zero-power resistance at an ambient temperature of 25 °C, the			--
	with flammability category V-1 or better according to IEC 60695-11-10 and IEC 60695-			N/A
24.2.8	Fusing resistors:			--
	have adequate breaking capacity and does not cause emission of flames or burning			N/A
24.3	Capacitors			--
	comply with Table 16 or as declared (7.23)	See table 16.		N/A
24.4	Resistors			--
	Resistors for protective impedances according to 9.1.1 and resistors the short-circuiting or disconnecting of which would cause an infringement of the requirements for operation under fault conditions (<i>see Clause 23</i>):			--
	have an adequate stable resistance value under overload and complies with the requirements of 14.1 of IEC 60065:2014			N/A
25	EMC REQUIREMENTS			N/A
25.1	General			--
	Tests in Clause 25:			--
	carried out on requested by the manufacturer			N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Electronic switches for appliances		--
	fulfil the requirements for immunity and emission when used in accordance with the manufacturer's specification		N/A
	Electronic switches intended to be built in or incorporated in an appliance.		--
	comply with the requirements for immunity and emission as evaluated in the end		N/A
25.2	Immunity		--
25.2.1	General Electronic switches so designed that the switch state (ON or OFF) and/or setting value is protected against electromagnetic interference.		
	The electronic switch is mounted as in normal use		N/A
	Loaded as specified in clause 17 at U_N	V	N/A
	Each electronic switch is tested, if applicable, in the following states:		--
	☒ O ☒ highest ☐ lowest ☒ N, ☒ setting; ☐ setting;		N/A
25.2.2	Voltage dips and short interruptions		--
	Electronic switch tested as in 25.2.1 with Table 17 using the test equipment specified in IEC 61000-4- 11, 3 dips/interruptions with ≥ 10 s minimum (between each test event).		N/A
	Abrupt changes in supply voltage occurs at zero crossings.		N/A
	The change between the test voltage U_T and the changed voltage is abrupt.		N/A
	U_T = to the rated voltage.		N/A
	Test level of 0 % = to a total supply voltage interruption.		N/A
	During the test: the electronic switch state and/or setting may alter		N/A
	Occasional flickering of luminaires and irregular running of motors during the test		N/A
	After the test, the electronic switch:		--
	be in the original state and the setting		N/A
25.2.3	Surge immunity test		--
	Tests carried out according to IEC 61000-4-5 with an open-circuit test voltage of 1 kV (<i>/level/</i>		N/A
	During the tests, the switch state and/or setting shall not alter.		N/A
	After the tests the electronic switch is in the original state and the setting is unchanged.		N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
25.2.4	Electrical fast transient test		--
	The electronic switch subjected to repetitive fast transients (<i>bursts</i>) on supply and control terminals/ terminations.		N/A
	The test is carried out according to IEC 61000-4-4 with the following specification:		--
	The level of the repetitive fast transients consisting of bursts is in accordance with Table 18.		--
	☒ Supply terminals/terminations 1 kV (level 2) ☐ Control terminals/terminations 0,5 kV (level 2)		N/A
	The duration of the test ≥ 1 min.		N/A
	During the test, the electronic switch state and/or setting may alter.		N/A
	After the test, the switch shall remain in its original state.		N/A
25.2.5	Electrostatic discharge test		--
	The electronic switch mounted as in normal use.		N/A
	The following levels apply:		--
	☐ test voltage of contact discharge: 4 kV; test voltage of air discharge: 8 kV		N/A
	During the test, the electronic switch state and/or setting may alter.		N/A
	After the test, the switch shall remain in its original state.		N/A
25.2.6	Radiated electromagnetic field test Electronic switch subjected to electromagnetic fields tested as follows:		--
	Test carried out according to IEC 61000-4-3, applying a field strength of 3 V/m.		N/A
	After the test, the electronic switch is in the original state and the setting is unchanged.		N/A
	During the test, the electronic switch state and/or setting may alter:		--
	• no other changes observed		N/A
25.2.7	Power-frequency magnetic field test		--
	• carried out according to IEC 61000-4-8 by applying a magnetic field of 3 A/m,		N/A
	During the test, the state of the electronic switch shall not change.		N/A
	Occasional flickering of lamps or irregular running of motors during the test does not occur.		N/A
25.3 25.3.1	Emission Low frequency emission Checked by tests according to IEC 61000-3-2 and IEC 61000-3-3 or IEC61000-3-		--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	Requirements met if the electronic switch complies with the criteria's specified in these		N/A
	If overview shows an envelope of the spectrum with a monotonal decrease according to the increasing order of harmonics:		--
	measurements restricted to harmonics up to order 11		N/A
25.3.2	Radio-frequency emission		--
	The electronic switch complies with the requirements of	☐ CISPR 14-1 ☒ CISPR 15	N/A
	Electronic switch used for electrical lighting application, complies with		N/A

Annex C	PROOF TRACKING TEST (PTI) (normative)	P
	Proof tracking test made according to IEC 60112.	P

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

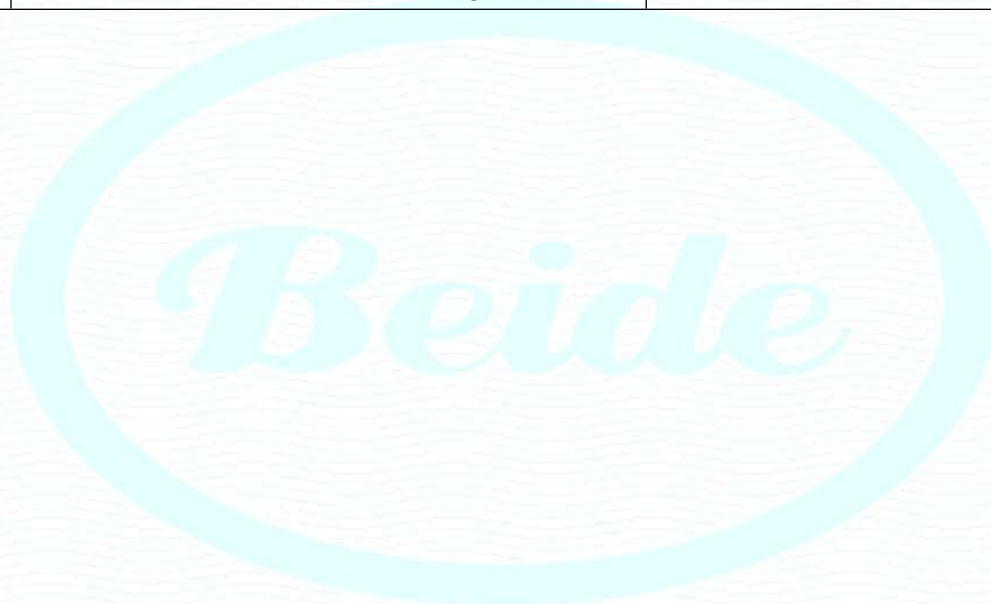
Annex E	RELATION BETWEEN RATED IMPULSE WITHSTAND VOLTAGE U_{IMP} , RATED VOLTAGE U_N AND OVERVOLTAGE CATEGORY (<i>normative</i>)						P
Table E1	Rated impulse withstand voltage for switches energized directly from the low voltage mains						--
	Nominal voltage of the supply system based IEC 60038 (V) Three phase Single	Voltage line to derived from nominal voltages a.c. or d.c. to including (V)	$U_{imp}^{(1.2/50)}$ (kV) Overvoltage category			—	
			I	II	III	—	
	--	250	≤300	--	2.5	--	P

Annex G	IMPULSE VOLTAGE TEST (<i>normative</i>)				N/A
	To verify that clearances will withstand specified transient overvoltage.				--
	Impulse withstand voltage test U_{imp} is carried out with a voltage having a 1.2/50 μ s wave-form as in IEC 60060-1 and is intended to simulate overvoltage of atmospheric origin.		V		N/A
	The test is conducted for a minimum of 3 impulses of each polarity with an interval > 1 s between pulses.				N/A
	When surge suppression is provided inside the specimen, the impulse have the following characteristics: Waveform				--
	☐ 1.2/50 μ s for the no-load voltage with amplitudes equal to the values in Table G1; ☐ 8/20 μ s for an appropriate surge current.				N/A
Table G1	Test voltages for verifying clearances at sea level				--
	Rated impulse withstand	Impulse test voltage at sea level $\hat{U}$			—
					N/A

Annex H	ALTITUDE CORRECTION FACTORS (<i>normative</i>)				N/A
	Dimensions given in Table 22 are valid for altitudes ≤ 2000 m above sea level, clearances for altitudes > 2000 m sea level is multiplied by the altitude correction factor specified as follows:				--
Table	Altitude correction factors				--
	Altitude	Normal barometric	Multiplication factor for		—
					N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

Annex I	TYPES OF COATINGS FOR RIGID PRINTED BOARD ASSEMBLIES (<i>normative</i>)		N/A
	Type 1 coating:		--
	Provides only protection against pollution by coating to pollution degree 1.		N/A
	Clearance and creepage distance of 20.1 and 20.2 apply to the rigid printed board assembly under the coating		N/A
	Type 2 coating:		--
	Provides protection against pollution and insulation that the clearance and creepage distance of 20.1 and 20.2 are not applicable between conductors under the coating.		N/A



Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

11.1.1	General			--
Table 4	Resistive current carried by the terminal and related cross-sectional areas of terminals for unprepared conductors			--
	Flexible conductors			--
	Terminal size.....	--		—
	Resistive current carried by the terminal	--	A	—
	Cross-sectional areas	--	mm ²	N/A
	Supplementary information:			--
	Rigid conductors			--
	Terminal size.....	--		—
	Resistive current carried by the terminal	--	A	—
	Cross-sectional areas	--	mm ²	N/A
	Supplementary information:			--

11.6	Test sequences							--
Table 5	Terminal test sequence							--
	Reconnectio	Conductor	TT	TT	TT	TT	Examples of terminals	—
	Possi ble (7.20.	Unprepar ed (7.20.1).					☐ Screw 7.20.12, ☐ Piercing 7.20.18, ☐ Push in 7.20.13	N/A
	Possi ble (7.20. 11)	Prepar ed (7.20. 2)					☐ Screw 7.20.12, ☐ Piercing 7.20.18, ☐ Push in ☒ 7.20.13,	N/A
	Not possible	unprepar ed					☐ Solder 7.20.15 ☐ Welding 7.20.16	P
	Not possible (7.20.10)	Prepar ed (7.20.					Fixed wires (7.20.17) and terminations in	N/A
	Supplementary information:							--

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test		Result - Remark	Verdic
15.2	Measurement of insulation resistance			--
	The insulation resistance measured with a DC voltage ~ 500 V, the measurement being made 60 s after application of the voltage.			--
Table 7	Minimum insulation resistance			--
	Insulation to be tested	Insulation		--
	Functional	$\geq 2 \text{ M}\Omega$	>100 M Ω	P
	Basic	$\geq 2 \text{ M}\Omega$	>100 M Ω	P
	Supplementary	$\geq 5 \text{ M}\Omega$		N/A
	Reinforced	$\geq 7 \text{ M}\Omega$	>100 M Ω	P
	Across disconnections	$\geq 2 \text{ M}\Omega$	>100 M Ω	P
	Supplementary information:			--

15.3	Insulation test voltage			--
	The insulation is subjected to a voltage of substantially sine wave form, 50 or 60			--
Table 8	Dielectric strength	Rated voltage	250	--
	Insulation or disconnection to be tested	Test voltage (V)		--
	Functional	1500		P
	Basic	1500		P
	Supplementary	--		N/A
	Reinforced	3000		P
	Electronic disconnection	--		N/A
	Micro-disconnection	--		N/A
	Full disconnection	500		P
	No flash over or breakdown occurs.			P
	Supplementary information:			

Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic

16.4	Heating test			--
	Test voltage.....	250	V	—
	Resistive or declared current	16	A	—
	Cross-sectional areas	--	mm ²	—
Thermocouple locations			Max. temperature	--
Terminal L _{in}			32.2	P
Terminal N _{in}			34.8	P
Enclosure outside of switch			18.7	P
	Supplementary information:			--

18.3	Pull			--
Table 9	Minimum values of pull force			--
	Rated	Force (N)		—
	A	Normal direction	45° from normal	—
	☐ ≤ 4 ☐ >	☐ 50 ☐	☐ 25 ☐ 50	N/A
	Supplementary information:			--

19.2	Screwed connections			--
Table 10	Torque values			--
	Type of screw	Nominal thread Ø (mm)	Torque (Nm)	—
	Terminal:			N/A
	Assembly:			N/A
	Cord			N/A
	Other:			N/A
19.2.5	Switches having screwed glands are submitted to the following test.			--
Table 11	Torque values for screwed glands			--
	Ø of the test rod	Torque for glands of		—
		Metal	Nm	N/A
		Insulating material	Nm	N/A
	Supplementary information:			--
	After the test neither the glands nor the enclosure of the specimen shall show any damage.			N/A

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

20	CLEARANCES, CREEPAGE DISTANCES, SOLID INSULATION AND COATINGS OF RIGID PRINTED BOARD ASSEMBLIES				P
	Working voltage (V):	250			—
	Degree of pollution, micro:	☐ 1	☒ 2	☐ 3	—
	Degree of pollution, macro:	☐ 1	☒ 2	☐ 3	—
Table 12	Creepage distance Cd and clearance Cl across:	requir ed Cd	C d	requir ed Cl	C l
	Functional, sealed or incapsulated				
	Functional,	≥2.5	>2.5	≥1.5	>2.5
	Basic	≥2.5	>2.5	≥1.5	>2.5
	Supplementary				
	Reinforced	≥5.0	>6.0	≥3.0	>6.0
	Full disconnection	≥2.5	>2.5	≥1.5	>2.5
	Micro disconnection				
	Supplementary information:				--

20.6	Coatings of rigid printed board assemblies.			--
Table 15	Test levels and conditions (Type 2 coating)			--
	IEC 60664-3 sub-	Test levels and		—
	6.6.1 cold storage	- 25°C		N/A
	6.6.3 Rapid change of temperature	Degree of severity 2 (-		N/A
	Supplementary information:			--

21	Fire hazard			--
21.1.2	Ball pressure test according to IEC 60695-10-2 at the temperatures using:			--
	☒ (A) heating test results (<i>clause 10</i>)			
	☐ (B) calculated temperatures			
Non-metallic materials to be tested:		Ball pressure	Max 2.0 mm	--
Plastic enclosure of switch		125	1.1	P
Rocker		125	1.1	P
	Supplementary information:			--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

21.2	Resistance to abnormal heat		--
Non-metallic materials to be tested:	Test temperature (°C)	- extinguish within 30 s - no ignition of the layer of wrapping tissue	--
Plastic enclosure of switch	850	No flame	P
Rocker	850	No flame	P
	Supplementary information:		--

24.2.4	Non-resettable cut-outs – After the test:		--
Thermocouple locations	Max. temperature	Max permitted (°C)	--
			N/A
			N/A
			N/A
	Supplementary information:		--

24.3	Capacitors		--
Table 16	Requirements for capacitors		--
	Application of capacitors	Type(s) of capacitors (according IEC 60384-	—
	Between live conductor	$U_N \leq$ 125V < $U_N \leq$ 250V Over-current	—
	(Z = impedance)	Without With	--
	L or N and earth (PE)	Y Y2 Y2	N/A
	L and N or L1 and L2		--
	• without Z in series	☐ X ☐ X1 ☐ X2	N/A
	• with Z in series, by short-circuiting of capacitor, limits the current to ≥ 0.5 A	X3 X2 X3	N/A
	•		N/A
	< 0.5 A No special requirement		
	1) Fusing resistor (built in or external).		--
	Supplementary information:		--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
8	MARKING AND DOCUMENTATION		P
	This clause of part 1 is applicable.		--
9	PROTECTION AGAINST ELECTRIC SHOCK		P
	This clause of part 1 is applicable.		--
10	PROVISION FOR EARTHING		P
	This clause of part 1 is applicable.		--
11	TERMINALS AND TERMINATIONS		P
	This clause of part 1 is applicable.		--
12	CONSTRUCTION		P
	This clause of part 1 is applicable.		--
13	MECHANISM		N/A
	This clause of part 1 is applicable.		--
14	PROTECTION AGAINST SOLID FOREIGN OBJECTS, INGRESS OF WATER AND HUMID CONDITIONS		P
	This clause of part 1 is applicable.		--
15	INSULATION RESISTANCE AND DIELECTRIC STRENGTH		P
	This clause of part 1 is applicable.		--
16	HEATING		P
	This clause of part 1 is applicable.		--
17	ENDURANCE		P
17.1	General requirements		--
17.1.2	The sequence of tests to be completed on the same 3 specimens is as follows:		--
		Carried out:	--
	• TC3: a test at high speed specified in 17.5.3	☐ yes, ☐ no	N/A
	• TC2: a test at slow speed specified in 17.5.2	☒ yes, ☐ no	P

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	TC1: an increased-voltage test at accelerated speed as specified in 17.5.1	yes, no	P



Attachment No.3		IEC 61058-1		
Clause	Requirement +Test	Result - Remark		Verdic
		☐	☐	
	• TC9: a locked-rotor test as specified in 17.5.5 at accelerated speed	☒ yes,	☐ no	N/A
	• TC4: a test at accelerated speed as specified in 17.5.4;	☒ yes,	☐ no	P
17.1.3	When required by Clause 13, TC10, is conducted on a different set of 3 specimens:			--
	• a test at very slow speed as in 17.5.6; only applies to switches according to the			N/A
17.2	Electrical endurance tests	☒		—
	The switch loaded as in Table 102 and/or Table 103 and connected in accordance with the circuit as given in Table 2.	☐	Table 102 and/or Table 103	P
a)	Where in Table 2 an auxiliary switch (A) is symbolised in the test circuit,			--
	• tests for two ON-positions of the specimen (S) performed on 2 separate sets of test			N/A
b)	Multiway switches loaded according to 61058- 1:2016, Table 1.	See table 1.		N/A
c)	For specific lamp load (7.2.7),			--
	• the connection and test load as specified by the manufacturer using the maximum occurring inrush current at room temperature			N/A
	• the specimen operated with loads that are used in the field rather than with synthetic	☐	☐	N/A
	• forced cooling of the specific lamp load applied in order to ensure cold resistance for each operating cycle and shorten the test time	☐ used	☐ not used	N/A
d)	No electrical endurance tests applied for switches for 20 mA load as classified to 7.2.6			N/A
17.3	Thermal conditions (air temperatures)			--
17.3.1	☐ Switches according to 7.3.2 during tests in 17.5.4 (TC4) all parts exposed to:			
	☐ 1 st half of test at maximum T-rating (+5 / 0)°C		°C	N/A
	☐ 2 nd half of test at 25°C ± 10°C or at the minimum T-rating (0 / -5)°C if T < 0°C		°C	N/A
17.3.2	Switches according to 7.3.3, during tests in 17.5.4 (TC4):			--
	• parts for 0 °C to 55 °C, exposed to a temperature within this range for the complete			N/A
	☐ 1 st half of test, the remainder of the switch maintained at (T +5/0) °C		°C	N/A
	☐ 2 nd half of test, carried out at 25 °C ± 10 °C or at the minimum T-rating (T 0/-		°C	N/A
17.3.3	Switches according to 7.3.1, during the tests in 17.5.4 (TC4):			--
	• the switch exposed to 25 °C ± 10 °C			P

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
17.4	Actuating conditions		--
17.4.1	The operating speed for the operating cycles shall be as follows: ☐ a) For very slow speed approximately:		
	☐ 1°/s for rotary actuation; 0.5 mm/s for linear actuation.		N/A
	☐ b) For slow speed approximately:		--
	☐ 9°/s for rotary actuations at an angle ☐ ≤ 45°; 18°/s for rotary actuations at an angle > 45°; 20 mm/s for linear actuations		N/A
	c) For high speed:		--
	• actuating member actuated by hand as fast as possible		N/A
	☐ d) For accelerated speed approximately:		--
	☐ 45°/s for rotary actuations at an angle ☐ ≤ 45°; 90°/s for rotary actuations at an angle > 45°; 80 mm / s for linear		N/A
17.4.2	For biased switches, the actuating member is moved to the limit of travel of the opposite		N/A
17.4.3	During the testing, care is taken that the test apparatus drives the actuating member, without impeding the designed movements of		N/A
17.4.4	During the accelerated speed test:		--
	a) Care taken that test apparatus allows actuating member to operate freely.		P
	b) Switches for a rotary actuation where movement is not limited in either direction:		--
	• 3/4 of operating cycles made in a clockwise and 1/4 in an anti-clockwise direction		P
	c) Switches for rotary actuation in one direction only, test is performed in the designed		N/A
	d) Additional lubrication not applied during tests.		P
	e) Forces applied to the end stops of the actuating members do not exceed declared		P
17.4.5	☐ Switches are operated with the following conditions. Table 104:		--
	☒ IR ≤ 10 A; 1 (s) ON and 3 (s) ☐ OFF IR > 10 A but < 25 A; 2 (s) ON and 6 (s) OFF		P
	Capacitive and simulated lamp load (<i>IEC 61058-1:2016, Figures 8 and 9</i>);		--
	• 2 (s) ON and 15 (s) OFF		P
	Tungsten lamp loads:		--
	• Minimum 1 (s) ON and Minimum 55 (s) OFF		P

Attachment No.3		IEC 61058-1			
Clause	Requirement + Test	Result - Remark			Verdic
	Very slow speed TC10:				--
	• Minimum 2 (s) ON and Minimum 6 (s) OFF				N/A
	Locked rotor (TC9):				--
	• 1 (s) ON and 30 (s) OFF				N/A
	Switches with test circuit as in Table 2 for codes 2.3, 2.5, 2.7 or 2.9:				--
	• the ON periods is approximately 50 %				N/A
	Multi-way switches comply with the table 104	(s)		(s) OFF	N/A
	• or be actuated with the speed indicated in 17.4.1 and a minimum ON period of 25 %				N/A
17.5	Type of test condition (TC)				--
17.5.2	Increased-voltage test at accelerated speed (TC1):				--
	• Electrical conditions as in Table 102, 1.15 U _N and 1.0 I _N . • Capacitive and simulated lamp load 1.0 U _N and 1.15 I _N . • Thermal conditions 25 ± 10 °C. • Method of operation as in 17.4.	See table TC.			P
17.5.2	Test at slow speed (TC2)				--
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed as in 17.4 slow speed. • 100 operating cycles	See table TC.			P
17.5.3	Test at high speed (TC3) (<i>only switches with more than one pole and with reversal polarity</i>).				--
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed as in 17.4 high speed. • 100 operating speed.	See table TC.			N/A
17.5.4	Test at accelerated speed (TC4)				--
	• Electrical conditions as in 17.2. • Thermal conditions as in 17.3. • Actuating speed, accelerated as in 17.4. • Operating cycles as number declared in (7.4) reduced with the number already tested in 17.5.1,	See table TC.			P
17.5.5	Locked-rotor test (TC9):				--
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed, accelerated as in 17.4. • 50 operating cycles.	See table TC.			N/A
17.5.6	Test at very slow speed (TC10):				--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	- Electrical conditions as in 17.2. - Thermal conditions 25 ± 10 °C. - Actuating speed, very slow speed in 17.4. 100 operating cycles.	See table TC.	N/A
17.6	Evaluation of compliance	See table TE1 – TE3.	P
18	MECHANICAL STRENGTH		P
	This clause of part 1 is applicable.		--
19	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
	This clause of part 1 is applicable.		--
20	CLEARANCES, CREEPAGE DISTANCES, SOLID INSULATION AND COATINGS OF RIGID PRINTED BOARD ASSEMBLIES		P
	This clause of part 1 is applicable.		--
21	FIRE HAZARD		P
	This clause of part 1 is applicable.		--
22	Resistance to rusting		N/A
	This clause of part 1 is applicable.		--
23	ABNORMAL OPERATION AND FAULT CONDITIONS FOR ELECTRONIC SWITCHES.		P
	Mechanical switches with electronic components checked by clause 23 of IEC		N/A
	Switches with rigid printed boards with creepage distances and clearances that do not comply with the required distances of Table 12 to Table 14 of IEC 61058-		--
	• checked by Clause 23 of IEC 61058-1-2:2016		N/A
24	COMPONENTS		P
	This clause of part 1 is applicable.		--
25	EMC REQUIREMENTS		N/A
	This clause of part 1 is applicable.		--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic

	Results of endurance testing in clause 17								
Type:	Substanti ally		Tested for:		Simulated test		Circuit code:	1.3	
Table 1	Test loads for multi way switches								--
	Cycles of		Switch position of		Circuit ⇒ Load (A)				—
	1st half		Highest load		I _R				N/A
			Next lower load		0.8 I _R				N/A
			Further next lower		0.533 I _R				N/A
	2nd half		Highest load		I _R				N/A
			Next lower load		0.5 I _R				N/A
			Further next lower		0.333 I _R				N/A
Table TC									--
Sub -	TC test	Volt (V)	Test load (A) Make		Cos (φ) Make		Time consta	Cycles	--
17.5.1	TC1	287.	18.	--	--	--	--	100	P
17.5.2	TC2	250	16	--	--	--	--	100	P
17.5.3	TC3								N/A
17.5.4	TC4	250	16	--	--	--	--	9800	P
17.5.5	TC9								N/A
17.5.6	TC1								N/A
TE1 –									--
17.6.1	☒ Functional compliance (TE1). Switch complies if								--
	☒ all actions function as declared ☒ no loosening of electrical / mechanical connections occur; ☒ sealing compound does not flow to such an extent that live parts are exposed								P
17.6.2	Thermal compliance (TE2) • Δt at the terminals < 55K tested in accordance with Clause 16 at I _R and 25°C± 10 °C								--
	Test current							A	—
	Samples 1, 2, 3:					1) 2	33.2 31.5 32.7	K K	P
17.6.3	Insulating compliance (TE3) • test voltage 75 % of the corresponding test voltage specified in sub-clause 15.3:								--

Attachment No.3		IEC 61058-1	
Clause	Requirement +Test	Result - Remark	Verdic
	☒ Over contact gap(s) ☒ Between live parts of different polarity ☒ Between live parts and earth metal ☐ Between live parts and accessible metal parts or actuating members etc. Samples 1, 2, 3: No transient fault occurred		P
	Supplementary information:		--



Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		—
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.4	Specified ambient temperature for outdoor use (°C):		N/A
4.1.5	Constructions and components not specifically covered		P
4.1.8	Liquids, refrigerants and liquid filled components (LFCs)	(See G.15)	N/A
4.1.15	Markings and instructions	(See Annex F)	P
4.4.3	Safeguard robustness		P
4.4.3.1	General		P
4.4.3.2	Steady force tests	(See Clause T.3, T.4, T.5)	P
4.4.3.3	Drop tests		P
4.4.3.4	Impact tests		P
4.4.3.5	Internal accessible safeguard tests		N/A
4.4.3.6	Glass impact tests	(See Clause T.9, Annex U)	N/A
4.4.3.7	Glass fixation tests		N/A
	Glass impact test (1J)		N/A
	Push/pull test (10 N)		N/A
4.4.3.8	Thermoplastic material tests		P
4.4.3.9	Air comprising a safeguard		N/A
4.4.3.10	Accessibility, glass, safeguard effectiveness		N/A
4.4.4	Displacement of a safeguard by an insulating liquid		N/A
4.4.5	Safety interlocks	(See Annex K)	N/A
4.5	Explosion		N/A
4.5.1	General	(See Annex M for batteries)	N/A
4.5.2	No explosion during normal/abnormal operating condition	(See Clause B.2, B.3)	N/A
	No harm by explosion during single fault conditions	(See Clause B.4)	N/A
4.6	Fixing of conductors		P
	Fix conductors not to defeat a safeguard		P
	Compliance is checked by test:	(See Clause T.2)	P
4.7	Equipment for direct insertion into mains socket-outlets		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
4.7.2	Mains plug part complies with relevant standard ...:		N/A
4.7.3	Torque (Nm).....:		N/A
4.8	Equipment containing coin/button cell batteries		N/A
4.8.1	General		N/A
4.8.2	Instructional safeguard.....:		N/A
4.8.3	Coin or button cell battery compartment, door or cover construction		N/A
	Open torque test		N/A
4.8.4.2	Stress relief test		N/A
4.8.4.3	Battery replacement test		N/A
4.8.4.4	Drop test		N/A
4.8.4.5	Impact test		N/A
4.8.4.6	Crush test		N/A
4.8.5	Compliance		N/A
	30N force test with test probe		N/A
	20N force test with test hook		N/A
4.9	Likelihood of fire or shock due to entry of conductive object		N/A
4.10	Component requirements		N/A
4.10.1	Disconnect Device	(See Annex L)	N/A
4.10.2	Switches and relays	(See Annex G)	N/A
4.10.3	Mains power supply cords	(See Clause G.7)	N/A
4.10.4	Batteries and their protection circuits	(See Annex M)	N/A

5	ELECTRICALLY-CAUSED INJURY		—
5.2	Classification and limits of electrical energy sources		P
5.2.2	ES1 and ES2 limits		P
5.2.2.2	Steady-state voltage and current limits :	(See appended table 5.2)	P
5.2.2.3	Capacitance limits :	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits :	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses :	(See appended table 5.2)	N/A
5.2.2.6	Ringing signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
5.3.1 a)	ES2/ES3 circuits that are not ES2/ES3 mains		P
5.3.1 b)	Skilled persons not unintentional contact ES3 bare conductors		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
	Accessibility to outdoor equipment bare parts		N/A
5.3.2.2	Contact requirements		P
	Test with test probe from Annex V		—
5.3.2.2 a)	Air gap – electric strength test potential (V) :	(See appended table 5.4.9)	N/A
5.3.2.2 b)	Air gap – distance (mm) :		N/A
5.3.2.3	Compliance		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Material is non-hygroscopic		P
5.4.1.4	Maximum operating temperature for insulating materials :	(See appended table)	P
5.4.1.5	Pollution degrees :	PD2	P
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling test		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage :		P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat test :	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure test :	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.1	General requirements		P
	Clearances in circuits connected to AC Mains, Alternative method	(See Annex X)	P
5.4.2.2	Procedure 1 for determining clearance		P
	Temporary overvoltage :		—
5.4.2.3	Procedure 2 for determining clearance		P
5.4.2.3.2.2	a.c. mains transient voltage :	2500V	—
5.4.2.3.2.3	d.c. mains transient voltage :		—

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
5.4.2.3.2.4	External circuit transient voltage :		—
5.4.2.3.2.5	Transient voltage determined by measurement :		—
5.4.2.3.3	Exceptions of determining required withstand voltage :		N/A
5.4.2.3.4	Determining clearances using required withstand voltage :		N/A
5.4.2.4	Determining the adequacy of a clearance using an electric strength test :	(See appended table 5.4.2)	P
5.4.2.5	Multiplication factors for clearances and test voltages :		N/A
5.4.2.6	Clearance measurement :	(See appended table 5.4.2)	P
5.4.3	Creepage distances		P
5.4.3.1	General		P
5.4.3.3	Material group :	Material group IIIb assumed.	—
5.4.3.4	Creepage distances measurement :	(See appended table 5.4.3)	P
5.4.4	Solid insulation		P
5.4.4.1	General requirements		P
5.4.4.2	Minimum distance through insulation :	(See appended table 5.4.4.2)	P
5.4.4.3	Insulating compound forming solid insulation		P
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Insulating compound forming cemented joints		N/A
5.4.4.6	Thin sheet material		P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs) :		P
5.4.4.6.3	Non-separable thin sheet material		N/A
	Number of layers (pcs) :		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material :	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz, EP, KR, d, VPW (V) :	(See appended Table 5.4.4.9)	N/A
	Alternative by electric strength test, tested voltage (V), KR :	(See appended Tables 5.4.4.9 and 5.4.9)	N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
5.4.5.3	Insulation resistance (MΩ) :		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Electric strength test :	(See appended table 5.4.9)	N/A
5.4.6	Insulation of internal wire as part of supplementary safeguard		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		P
	Relative humidity (%), temperature (°C), duration (h) :	93%; 25°C; 48h	—
5.4.9	Electric strength test		P
5.4.9.1	Test procedure for type test of solid insulation :	(See appended table 5.4.9)	P
5.4.9.2	Test procedure for routine test		N/A
5.4.10	Safeguards against transient voltages from external circuits		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test :	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test :	(See appended table 5.4.9)	N/A
5.4.10.3	Verification for insulation breakdown for impulse test :		N/A
5.4.11	Separation between external circuits and earth		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Surge suppressors bridge separation between external circuit and earth		N/A
	Rated operating voltage U _{op} (V):		—
	Nominal voltage U _{peak} (V) :		—
	Max increase due to variation ΔU _{sp} :		—
	Max increase due to ageing ΔU _{sa} :		—
5.4.11.3	Test method and compliance :	(See appended table 5.4.9)	N/A
	Test voltage (V) of additional test :		N/A
	Measured current (mA) of additional test :		N/A
5.4.12	Insulating liquid		N/A
5.4.12.1	General requirements		N/A
5.4.12.2	Electric strength of an insulating liquid :	(See appended table 5.4.9)	N/A
5.4.12.3	Compatibility of an insulating liquid :	(See appended table 5.4.9)	N/A
5.4.12.4	Container for insulating liquid :		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector :	(See appended table 5.5.2.2)	N/A
5.5.3	Transformers		P
5.5.4	Optocouplers	(See sub-clause 5.4 or Clause G.12)	N/A
5.5.5	Relays	(See sub-clause 5.4)	N/A
5.5.6	Resistors	(See Clause G.10)	N/A
5.5.7	Surge suppressors	(See Clause G.8)	N/A
	GDT.....:		N/A
5.5.8	Insulation between the mains and an external circuit consisting of a coaxial cable :		N/A
	Insulation resistance (MΩ) :		N/A
	Electric strength test :		N/A
5.5.9	Safeguards for socket-outlets in outdoor equipment		N/A
	RCD rated residual operating current (mA) :		—
5.6	Protective conductor		P
5.6.2	Requirement for protective conductors		P
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²) :		—
	Protective earthing conductor serving as a reinforced safeguard		N/A
	Protective earthing conductor serving as a double safeguard		N/A
5.6.4	Requirements for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²). :		—
5.6.4.2	Protective current rating (A) :		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Terminal size for connecting protective earthing conductors (mm) :		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Terminal size for connecting protective bonding conductors (mm) :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective bonding system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method :	(See appended table 5.6.6)	N/A
5.6.6.3	Resistance (Ω) or voltage drop :	(See appended table 5.6.6)	N/A
5.6.7	Reliable connection of a protective earthing conductor		N/A
5.6.8	Functional earthing		N/A
	Conductor size (mm ²) :		N/A
	Class II with functional earthing marking :		N/A
	Appliance inlet cl & cr (mm) :		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks		P
5.7.2.1	Measurement of touch current		P
5.7.2.2	Measurement of voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
5.7.4	Unearthed accessible parts :		N/A
5.7.5	Earthed accessible conductive parts :		N/A
5.7.6	Requirements when touch current exceeds ES2 limits		N/A
	Protective conductor current (mA) :		N/A
	Instructional Safeguard :		N/A
5.7.7	Prospective touch voltage and touch current associated with external circuits		N/A
5.7.7.1	Touch current from coaxial cables		N/A
5.7.7.2	Prospective touch voltage and touch current associated with paired conductor cables		N/A
5.7.8	Summation of touch currents from external circuits		N/A
	a) Equipment connected to earthed external circuits, current (mA) :		N/A
	b) Equipment connected to unearthed external circuits, current (mA) :		N/A
5.8	Backfeed safeguard in battery backed up supplies		N/A
	Mains terminal ES :	(See appended table 5.8)	N/A
	Air gap (mm) :		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
6	Electrically- caused fire		—
6.2	Classification of power sources and potential ignition sources		P
6.2.2	Power source circuit classifications :		P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS :		N/A
6.2.3.2	Resistive PIS :		N/A
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials :	(See appended table B.1.5 and B.3)	P
	Combustible materials not inside a fire enclosure:		P
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	Supplementary safeguards		P
6.4.3.2	Single Fault Conditions :	(See appended table B.4)	P
	Special conditions for temperature limited by fuse		P
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		N/A
6.4.5.2	Supplementary safeguards		N/A
6.4.6	Control of fire spread in PS3 circuits		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.2	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		P
6.4.8.2.2	Requirements for a fire enclosure		P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top openings and properties		N/A
	Openings dimensions (mm) :		N/A

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Clause	Requirement - Test	Result - Remark	Verdict

6.4.8.3.4	Bottom openings and properties		N/A
	Openings dimensions (mm) :		N/A
	Flammability tests for the bottom of a fire enclosure	(See Clause S.3)	N/A
	Instructional Safeguard :		N/A
6.4.8.3.5	Side openings and properties		N/A
	Openings dimensions (mm) :		N/A
6.4.8.3.6	Integrity of a fire enclosure, condition met: a), b) or c) :		N/A
6.4.8.4	Separation of a PIS from a fire enclosure and a fire barrier distance (mm) or flammability rating :	Fire enclosure used	P
6.4.9	Flammability of insulating liquid :		N/A
6.5	Internal and external wiring		P
6.5.1	General requirements		P
6.5.2	Requirements for interconnection to building wiring :		N/A
6.5.3	Internal wiring size (mm ²) for socket-outlets :		N/A
6.6	Safeguards against fire due to the connection to additional equipment		N/A

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

8	MECHANICALLY-CAUSED INJURY		—
8.2	Mechanical energy source classifications		P
8.3	Safeguards against mechanical energy sources		P
8.4	Safeguards against parts with sharp edges and corners		P
8.4.1	Safeguards		P
	Instructional Safeguard :		P
8.4.2	Sharp edges or corners		P

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
8.5	Safeguards against moving parts		N/A
8.5.1	Fingers, jewellery, clothing, hair, etc., contact with MS2 or MS3 parts		N/A
	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
	Moving MS3 parts only accessible to skilled person		N/A
8.5.2	Instructional safeguard :		N/A
8.5.4	Special categories of equipment containing moving parts		N/A
8.5.4.1	General		N/A
8.5.4.2	Equipment containing work cells with MS3 parts		N/A
8.5.4.2.1	Protection of persons in the work cell		N/A
8.5.4.2.2	Access protection override		N/A
8.5.4.2.2.1	Override system		N/A
8.5.4.2.2.2	Visual indicator		N/A
8.5.4.2.3	Emergency stop system		N/A
	Maximum stopping distance from the point of activation (m) :		N/A
	Space between end point and nearest fixed mechanical part (mm) :		N/A
8.5.4.2.4	Endurance requirements		N/A
	Mechanical system subjected to 100 000 cycles of operation		N/A
	- Mechanical function check and visual inspection		N/A
	- Cable assembly :		N/A
8.5.4.3	Equipment having electromechanical device for destruction of media		N/A
8.5.4.3.1	Equipment safeguards		N/A
8.5.4.3.2	Instructional safeguards against moving parts :		N/A
8.5.4.3.3	Disconnection from the supply		N/A
8.5.4.3.4	Cut type and test force (N) :		N/A
8.5.4.3.5	Compliance		N/A
8.5.5	High pressure lamps		N/A
	Explosion test :		N/A
8.5.5.3	Glass particles dimensions (mm) :		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
8.6	Stability of equipment		N/A
8.6.1	General		N/A
	Instructional safeguard :		N/A
8.6.2	Static stability		N/A
8.6.2.2	Static stability test :		N/A
8.6.2.3	Downward force test		N/A
8.6.3	Relocation stability		N/A
	Wheels diameter (mm) :		—
	Tilt test		N/A
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test :		N/A
8.7	Equipment mounted to wall, ceiling or other structure		N/A
8.7.1	Mount means type :		N/A
8.7.2	Test methods		N/A
	Test 1, additional downwards force (N) :		N/A
	Test 2, number of attachment points and test force (N) :		N/A
	Test 3 Nominal diameter (mm) and applied torque (Nm) :		N/A
8.8	Handles strength		N/A
8.8.1	General		N/A
8.8.2	Handle strength test		N/A
	Number of handles :		—
	Force applied (N) :		—
8.9	Wheels or casters attachment requirements		N/A
8.9.2	Pull test		N/A
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions :		N/A
8.10.3	Cart, stand or carrier loading test		N/A
	Loading force applied (N) :		N/A
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
	Force applied (N) :		N/A
8.10.6	Thermoplastic temperature stability		N/A
8.11	Mounting means for slide-rail mounted equipment (SRME)		N/A
8.11.1	General		N/A
8.11.2	Requirements for slide rails		N/A
	Instructional Safeguard :		N/A
8.11.3	Mechanical strength test		N/A
8.11.3.1	Downward force test, force (N) applied :		N/A
8.11.3.2	Lateral push force test		N/A
8.11.3.3	Integrity of slide rail end stops		N/A
8.11.4	Compliance		N/A
8.12	Telescoping or rod antennas		N/A
	Button/ball diameter (mm) :		—

9	THERMAL BURN INJURY		—
9.2	Thermal energy source classifications		P
9.3	Touch temperature limits		P
9.3.1	Touch temperatures of accessible parts :	(See appended table)	P
9.3.2	Test method and compliance		P
9.4	Safeguards against thermal energy sources		P
9.5	Requirements for safeguards		N/A
9.5.1	Equipment safeguard		N/A
9.5.2	Instructional safeguard :		N/A
9.6	Requirements for wireless power transmitters		N/A
9.6.1	General		N/A
9.6.2	Specification of the foreign objects		N/A
9.6.3	Test method and compliance :	(See appended table 9.6)	N/A

10	RADIATION		—
10.2	Radiation energy source classification		N/A
10.2.1	General classification	No such radiation energy source	N/A
	Lasers		—
	Lamps and lamp systems		—

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
	Image projectors		—
	X-Ray		—
	Personal music player.....		—
10.3	Safeguards against laser radiation		N/A
	The standard(s) equipment containing laser(s) comply		N/A
10.4	Safeguards against optical radiation from lamps and lamp systems (including LED types)		N/A
10.4.1	General requirements		N/A
	Instructional safeguard provided for accessible radiation level needs to exceed		N/A
	Risk group marking and location.....		N/A
	Information for safe operation and installation		N/A
10.4.2	Requirements for enclosures		N/A
	UV radiation exposure	(See Annex C)	N/A
10.4.3	Instructional safeguard.....		
10.5	Safeguards against X-radiation		N/A
10.5.1	Requirements		N/A
	Instructional safeguard for skilled persons.....		—
10.5.3	Maximum radiation (pA/kg)	(See appended tables B.3 & B.4)	—
10.6	Safeguards against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output $L_{Aeq,T}$, dB(A)		N/A
	Unweighted RMS output voltage (mV).....		N/A
	Digital output signal (dBFS).....		N/A
10.6.3	Requirements for dose-based systems		N/A
10.6.3.1	General requirements		N/A
10.6.3.2	Dose-based warning and automatic decrease		N/A
10.6.3.3	Exposure-based warning and requirements		N/A
	30 s integrated exposure level (MEL30)		N/A
	Warning for MEL ≥ 100 dB(A)		N/A
10.6.4	Measurement methods		N/A
10.6.5	Protection of persons		N/A
	Instructional safeguards.....		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
10.6.6	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.6.1	Corded listening devices with analogue input		N/A

	Listening device input voltage (mV)		N/A
10.6.6.2	Corded listening devices with digital input		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A
10.6.6.3	Cordless listening devices		N/A
	Max. acoustic output $L_{Aeq,T}$, dB(A)		N/A

B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		—
B.1	General		P
B.1.5	Temperature measurement conditions	(See appended table B.1.5)	P
B.1.6	Specific output conditions		N/A
B.2	Normal operating conditions		P
B.2.1	General requirements	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers.....	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test	(See appended table B.2.5)	P
B.2.6.4	Equipment intended for building-in or rack-mounting		N/A
B.3	Simulated abnormal operating conditions		P
B.3.1	General		P
B.3.2	Covering of ventilation openings		P
	Instructional safeguard.....		P
B.3.3	DC mains polarity test		N/A
B.3.4	Setting of voltage selector		N/A
B.3.5	Maximum load at output terminals		N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Audio amplifier abnormal operating conditions		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	(See appended table B.3)	P
B.4	Simulated single fault conditions		P
B.4.1	General		P

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
B.4.2	Temperature controlling device		N/A
B.4.3	Blocked motor test		N/A
B.4.4	Functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors		P
B.4.6	Short circuit or disconnection of passive components		N/A
B.4.7	Continuous operation of components		N/A
B.4.8	Compliance during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging and discharging under single fault conditions	(See Annex M)	N/A
C	UV RADIATION		—
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure test		N/A
C.2.4	Xenon-arc light-exposure test		N/A
D	TEST GENERATORS		—
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		—
E.1	Electrical energy source classification for audio signals		N/A
	Maximum non-clipped output power (W)		—
	Rated load impedance (Ω)		—
	Open-circuit output voltage (V)		—
	Instructional safeguard.....	See Clause F.5	—

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
E.2	Audio amplifier normal operating conditions		N/A
E.2.1	Pink noise test signal		N/A
E.2.2	Sine-wave signal		N/A
E.3	Audio amplifier abnormal operating conditions		N/A
E.3.1	Normal operating conditions		N/A
E.3.2	Abnormal operating conditions		N/A
E.3.3	Audio equipment temperature measurement conditions.....:		N/A

F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		—
F.1	General		P
	Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols according to IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification	See marking plate	P
F.3.2.2	Model identification	See marking plate	P
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		P
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of the supply voltage	See marking plate	P
F.3.3.4	Rated voltage	See marking plate	P
F.3.3.5	Rated frequency.....	See marking plate	P
F.3.3.6	Rated current or rated power	See marking plate	P
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings		N/A
F.3.5.2	Switch position identification marking		P
F.3.5.3	Replacement fuse identification and rating markings		P
	Instructional safeguards for neutral fuse.....		N/A
F.3.5.4	Replacement battery identification marking		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
F.3.5.5	Neutral conductor terminal		N/A
F.3.5.6	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Protective bonding conductor terminals		N/A
F.3.6.2	Equipment class marking		N/A
F.3.6.3	Functional earthing terminal marking		N/A
F.3.7	Equipment IP rating marking		N/A
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Information prior to installation and initial use		P
	b) Equipment for use in locations where children not likely to be present		N/A
	c) Instructions for installation and interconnection		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Equipment intended to be fastened in place		N/A
	f) Instructions for audio equipment terminals		N/A
	g) Protective earthing used as a safeguard		N/A
	h) Protective conductor current exceeding ES2 limits		N/A
	i) Graphic symbols used on equipment		P
	j) Permanently connected equipment not provided with all-pole mains switch		N/A
	k) Replaceable components or modules providing safeguard function		P
	l) Equipment containing insulating liquid		N/A
	m) Installation instructions for outdoor equipment		N/A
F.5	Instructional safeguards		P
G	COMPONENTS		—
G.1	Switches		N/A
G.1.1	General		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
G.1.3	Test method and compliance		N/A
G.2	Relays		N/A
G.2.1	Requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supplying power to other equipment		N/A
G.2.4	Test method and compliance		N/A
G.3	Protective devices		P
G.3.1	Thermal cut-offs		N/A
	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Test method and compliance		N/A
G.3.2	Thermal links		N/A
G.3.2.1	a) Thermal links tested separately according to IEC 60691 with specifics		N/A
	b) Thermal links tested as part of the equipment		N/A
G.3.2.2	Test method and compliance		N/A
G.3.3	PTC thermistors		N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		P
G.3.5.1	Non-resettable devices suitably rated and marking provided		P
G.3.5.2	Single faults conditions	(See appended table B.4)	P
G.4	Connectors		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound components		P
G.5.1	Wire insulation in wound components		P
G.5.1.2	Protection against mechanical stress		P
G.5.2	Endurance test		N/A
G.5.2.1	General test requirements		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
G.5.2.2	Heat run test		N/A
	Test time (days per cycle)		—
	Test temperature (°C)		—
G.5.2.3	Wound components supplied from the mains		N/A
G.5.2.4	No insulation breakdown		N/A
G.5.3	Transformers		P
G.5.3.1	Compliance method		P
	Position	T1	P
	Method of protection	Protection by external network	P
G.5.3.2	Insulation		P
	Protection from displacement of windings		—
G.5.3.3	Transformer overload tests		P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding temperatures		P
G.5.3.3.3	Winding temperatures - alternative test method		N/A
G.5.3.4	Transformers using FIW		N/A
G.5.3.4.1	General		N/A
	FIW wire nominal diameter		—
G.5.3.4.2	Transformers with basic insulation only		N/A
G.5.3.4.3	Transformers with double insulation or reinforced insulation		N/A
G.5.3.4.4	Transformers with FIW wound on metal or ferrite core		N/A
G.5.3.4.5	Thermal cycling test and compliance		N/A
G.5.3.4.6	Partial discharge test		N/A
G.5.3.4.7	Routine test		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
G.5.4.2	Motor overload test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)		—
G.5.4.5	Running overload test for DC motors		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
G.5.4.5.3	Alternative method		N/A
	Electric strength test		N/A
G.5.4.6	Locked-rotor overload test for DC motors		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature		N/A
	Electric strength test		N/A
G.5.4.6.3	Alternative method		N/A
	Electric strength test		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage		—
G.6	Wire Insulation		N/A
G.6.1	General		N/A
G.6.2	Enamelled winding wire insulation		N/A
G.7	Mains power supply cords and interconnection cables		N/A
G.7.1	General requirements		N/A
	Type		—
G.7.2	Cross sectional area (mm ² or AWG)		N/A
G.7.3	Cord anchorages and strain relief		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N)		N/A
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm).....		N/A
G.7.3.2.4	Strain relief and cord anchorage material		N/A
G.7.4	Cord Entry		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Test method and compliance		N/A
	Overall diameter or minor overall dimension, D (mm).....		—
	Radius of curvature after test (mm)		—
G.7.6	Supply wiring space		N/A
G.7.6.1	General requirements		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Requirements		N/A
G.7.6.2.2	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguards against fire		N/A
G.8.2.1	General		N/A
G.8.2.2	Varistor overload test		N/A
G.8.2.3	Temporary overvoltage test		N/A
G.9	Integrated circuit (IC) current limiters		N/A
G.9.1	Requirements		N/A
	IC limiter output current (max. 5A)		—
	Manufacturers' defined drift		—
G.9.2	Test Program		N/A
G.9.3	Compliance		N/A
G.10	Resistors		N/A
G.10.1	General		N/A
G.10.2	Conditioning		N/A
G.10.3	Resistor test		N/A
G.10.4	Voltage surge test		N/A
G.10.5	Impulse test		N/A
G.10.6	Overload test		N/A
G.11	Capacitors and RC units		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	Optocouplers		N/A
	Optocouplers comply with IEC 60747-5-5 with specifics		N/A
	Type test voltage $V_{ini,a}$		—
	Routine test voltage, $V_{ini,b}$		—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
G.13.4	Insulation between conductors on the same inner surface		N/A
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs)		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2	Test method and compliance		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	(See Clause G.13)	N/A
G.15	Pressurized liquid filled components		N/A
G.15.1	Requirements		N/A
G.15.2	Test methods and compliance criteria for self-contained LFC		N/A
G.15.2.1	Hydrostatic pressure test		N/A
G.15.2.2	Creep resistance test		N/A
G.15.2.3	Tubing and fittings compatibility test		N/A
G.15.2.4	Vibration test		N/A
G.15.2.5	Thermal cycling test		N/A
G.15.2.6	Force test		N/A
G.15.2.7	Compliance criteria		N/A
G.15.3	Test methods and compliance for a modular LFC		N/A
G.15.3.2	Hydrostatic pressure test, applied test pressure		N/A
G.15.3.3	Creep resistance test		N/A
G.15.3.4	Tubing and fittings compatibility test, the change of tensile strength (%)		N/A
G.15.3.5	Thermal cycle test, test temperature (°C)		N/A
G.15.3.6	Force test		N/A
G.15.3.7	Compliance criteria		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
G.16.1	Condition for fault tested is not required		N/A
	ICX with associated circuitry tested in equipment		N/A
	ICX tested separately		N/A
G.16.2	Tests		N/A
	Smallest capacitance and smallest resistance specified by ICX manufacturer for impulse test		—

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
	Mains voltage that impulses to be superimposed on		—
	Largest capacitance and smallest resistance for ICX tested by itself for 10000 cycles test		—
G.16.3	Capacitor discharge test		N/A
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		—
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz)		—
H.3.1.2	Voltage (V)		—
H.3.1.3	Cadence; time (s) and voltage (V)		—
H.3.1.4	Single fault current (mA):		—
H.3.2	Tripping device and monitoring voltage		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V)		N/A
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		—
J.1	General		N/A
	Winding wire insulation		—
	Solid round winding wire, diameter (mm)		N/A
	Solid square and rectangular (flatwise bending) winding wire, cross-sectional area (mm ²)		N/A
J.2/J.3	Tests and Manufacturing	(See separate test report)	—
K	SAFETY INTERLOCKS		—
K.1	General requirements		N/A
	Instructional safeguard		N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
K.5.1	Under single fault condition		N/A
K.6	Mechanically operated safety interlocks		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
K.6.1	Endurance requirement		N/A
K.6.2	Test method and compliance		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements		N/A
	In circuit connected to mains, separation distance for contact gaps (mm)		N/A
	In circuit isolated from mains, separation distance for contact gaps (mm)		N/A
	Electric strength test before and after the test of K.7.2.....	(See appended table 5.4.9)	N/A
K.7.2	Overload test, Current (A)		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test		N/A
L	DISCONNECT DEVICES		—
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single-phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
	Instructional safeguard.....		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		—
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Batteries and their cells comply with relevant IEC standards		N/A
M.3	Protection circuits for batteries provided within the equipment		N/A
M.3.1	Requirements		N/A
M.3.2	Test method		N/A
	Overcharging of a rechargeable battery		N/A
	Excessive discharging		N/A
	Unintentional charging of a non-rechargeable battery		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
	Reverse charging of a rechargeable battery		N/A
M.3.3	Compliance	(See appended table M.3)	N/A
M.4	Additional safeguards for equipment containing a portable secondary lithium battery		N/A
M.4.1	General		N/A
	IEC 62133-2 batteries used for sub-system power powering application		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Requirements		N/A
M.4.2.2	Test	(See appended table M.4.2)	N/A
M.4.2.2.1	General		N/A
M.4.2.2.2	Abnormal operating conditions		N/A
M.4.2.2.3	Single fault conditions		N/A
M.4.2.3	Compliance criteria		N/A
M.4.3	Fire enclosure		N/A
M.4.4	Drop test of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation and procedure for the drop test		N/A
M.4.4.3	Drop, Voltage on reference and dropped batteries (V); voltage difference during 24 h period (%):		N/A
M.4.4.4	Check of the charge/discharge function		N/A
M.4.4.5	Charge / discharge cycle test		N/A
M.4.4.6	Compliance		N/A
M.5	Risk of burn due to short-circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Test method and compliance		N/A
M.6	Safeguards against short-circuits		N/A
M.6.1	External and internal faults		N/A
M.6.2	Compliance		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
	Calculated hydrogen generation rate		N/A
M.7.2	Test method and compliance		N/A
	Minimum air flow rate, Q (m ³ /h)		N/A
M.7.3	Ventilation tests		N/A
M.7.3.1	General		N/A
M.7.3.2	Ventilation test – alternative 1		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
	Hydrogen gas concentration (%)		N/A
M.7.3.3	Ventilation test – alternative 2		N/A
	Obtained hydrogen generation rate		N/A
M.7.3.4	Ventilation test – alternative 3		N/A
	Hydrogen gas concentration (%)		N/A
M.7.4	Marking		N/A
M.8	Protection against internal ignition from external spark sources of batteries with aqueous electrolyte		N/A
M.8.1	General		N/A
M.8.2	Test method		N/A
M.8.2.1	General		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s)		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance d (mm)		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse		N/A
	Instructional safeguard.....		N/A
N	ELECTROCHEMICAL POTENTIALS		—
	Material(s) used		—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		—
	Value of X (mm)	Considered	—
P	SAFEGUARDS AGAINST CONDUCTIVE OBJECTS		—
P.1	General		N/A
P.2	Safeguards against entry or consequences of entry of a foreign object		N/A
P.2.1	General		N/A
P.2.2	Safeguard requirements		N/A
	The ES3 and PS3 keep-out volume in Figure P.4 not applicable to transportable equipment		—
	Transportable equipment with metalized plastic parts		N/A
P.2.3	Consequence of entry test		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Compliance		N/A
P.4	Metallized coatings and adhesives securing parts		N/A
P.4.1	General		N/A
P.4.2	Tests		N/A
	Conditioning, T _C (°C).....:		—
	Duration (weeks).....:		—
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		—
Q.1	Limited power sources		N/A
Q.1.1	Requirements		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output		N/A
	d) Overcurrent protective device limited output		N/A
	e) IC current limiter complying with G.9		N/A
Q.1.2	Test method and compliance.....:		N/A
	Current rating of overcurrent protective device (A):		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A):		N/A
	Current limiting method.....:		—
R	LIMITED SHORT CIRCUIT TEST		—
R.1	General		N/A
R.2	Test setup		N/A
	Overcurrent protective device for test.....:		—
R.3	Test method		N/A
	Cord/cable used for test.....:		—
R.4	Compliance		N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		—
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm).....:		—
	Conditioning (°C).....:		—

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
S.3	Flammability test for the bottom of a fire enclosure		N/A
S.3.1	Mounting of samples		N/A
S.3.2	Test method and compliance		N/A
	Mounting of samples		—
	Wall thickness (mm).....		—
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosure materials of equipment with a steady state power exceeding 4 000 W		N/A
	Samples, material		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
S.6	Grille covering material, cloth, and reticulated foam		N/A
	Samples, material		N/A
	Measured distance from the centre of the fuel tablet (mm).....		N/A
T	MECHANICAL STRENGTH TESTS		—
T.1	General		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N	(See appended table T.3)	N/A
T.4	Steady force test, 100 N	(See appended table T.4)	N/A
T.5	Steady force test, 250 N	(See appended table T.5)	N/A
T.6	Enclosure impact test	(See appended table T.6)	P
	Fall test		P
	Swing test		N/A
T.7	Drop test	(See appended table T.7)	P

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
T.8	Stress relief test	(See appended table T.8)	P
T.9	Glass Impact Test.....	(See appended table T.9)	N/A
T.10	Glass fragmentation test		N/A
	Number of particles counted		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)		N/A
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		—
U.1	General		N/A
	Instructional safeguard :		N/A
U.2	Test method and compliance for non-intrinsically protected CRTs		N/A
U.3	Protective screen		N/A
V	DETERMINATION OF ACCESSIBLE PARTS		—
V.1	Accessible parts of equipment		N/A
V.1.1	General		N/A
V.1.2	Surfaces and openings tested with jointed test probes		N/A
V.1.3	Openings tested with straight unjointed test probes		N/A
V.1.4	Plugs, jacks, connectors tested with blunt probe		N/A
V.1.5	Slot openings tested with wedge probe		N/A
V.1.6	Terminals tested with rigid test wire		N/A
V.2	Accessible part criterion		N/A
X	ALTERNATIVE METHOD FOR DETERMINING CLEARANCES FOR INSULATION IN CIRCUITS CONNECTED TO AN AC MAINS NOT EXCEEDING 420 V PEAK (300 V RMS)		—
	Clearance	(See appended table X)	N/A
Y	CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES		—
Y.1	General		N/A
Y.2	Resistance to UV radiation		N/A
Y.3	Resistance to corrosion		N/A
Y.3	Resistance to corrosion		N/A
Y.3.1	Metallic parts of outdoor enclosures are resistant to effects of water-borne contaminants by		N/A
Y.3.2	Test apparatus		N/A
Y.3.3	Water – saturated sulphur dioxide atmosphere		N/A
Y.3.4	Test procedure		N/A

Attachment No.5		EN IEC 62368-1	
Clause	Requirement - Test	Result - Remark	Verdict
Y.3.5	Compliance		N/A
Y.4	Gaskets		N/A
Y.4.1	General		N/A
Y.4.2	Gasket tests		N/A
Y.4.3	Tensile strength and elongation tests		N/A
	Alternative test methods		N/A
Y.4.4	Compression test		N/A
Y.4.5	Oil resistance		N/A
Y.4.6	Securing means	(See Annex P.4)	N/A
Y.5	Protection of equipment within an outdoor enclosure		N/A
Y.5.1	General		N/A
Y.5.2	Protection from moisture		N/A
	Relevant tests of IEC 60529 or Y.5.3.....		N/A
Y.5.3	Water spray test		N/A
Y.5.4	Protection from plants and vermin		N/A
Y.5.5	Protection from excessive dust		N/A
Y.5.5.1	General		N/A
Y.5.5.2	IP5X equipment		N/A
Y.5.5.3	IP6X equipment		N/A
Y.6	Mechanical strength of enclosures		N/A
Y.6.1	General		N/A
Y.6.2	Impact test	(See Table T.6)	N/A

Attachment No.6			
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES for IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

	National Differences		--
Introduction	This informative annex relates to changed requirements. It informs where compliance checks are not required and where compliance checks are required to be carried out in order that a switch can be declared to meet the requirements of the new edition of EN 61058-1, if this switch already complies with EN 61058-1:1992+A1:1993.		P
Clause 8	Marking and documentation according to EN 61058-1:1992+A1:1993 shall be aligned with the new edition of EN 61058-1, specifically for -pollution degree, -rate dim pulse withstand voltage, -type and/or connection of switch.		P
9.1.2 and 9.1.3	Compliance shall be checked if relevant.		P
14.2	Compliance shall be checked for numeral 5 and 6 if relevant.		P
14.4	No compliance checks are necessary.		P
15.3	No compliance checks are necessary.		P
Clause 17	No compliance checks are necessary.		P
Clause 20	Compliance checks are required.		P
21.1.1 and 21.1.5	Compliance checks are required.		P
Clause 25	No compliance checks are necessary.		P



Figure 1 External View



Figure 2 External View

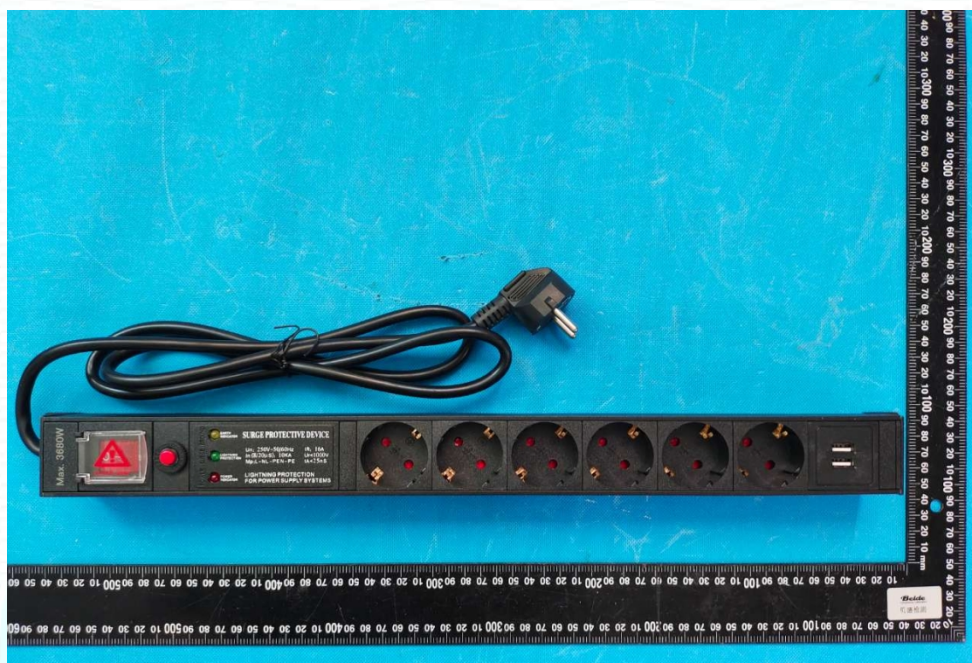


Figure 3 External View



Figure 4 External View

--- END OF TEST REPORT ---