	Ref. Certif. No.
IEC IECEE CB SCHEME	DE 2-020198

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Led Power Supply
Name and address of the applicant Nom et adresse du demandeur	Dongguan Rico Electronic Co., Ltd Huangtang Industrial Park, Hengli Town Dongguan City, 523460 Guangdong, China
Name and address of the manufacturer Nom et adresse du fabricant	Dongguan Rico Electronic Co., Ltd Huangtang Industrial Park, Hengli Town Dongguan City, 523460 Guangdong, China
Name and address of the factory Nom et adresse de l'usine Note: When more than one factory, please report on page 2 Note: Lorsque il y plus d'une usine, veuillez utiliser la 2ème page	Dongguan Rico Electronic Co., Ltd Huangtang Industrial Park, Hengli Town Dongguan City, 523460 Guangdong, China
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Input : AC 100-240V; 50/60Hz; 0,6A; Class II Output: refer to test report
Trade mark (if any) Marque de fabrique (si elle existe)	Trademark of Dongguan Rico Electronic Co., Ltd.
Model/type Ref. Ref. de type	RKPO-zzxxxyyyy (xxx, yyyy, zz = refer to the test report)
Additional information (if necessary may also be reported on page 2) Les Information complémentaire (si nécessaire, peuvent être indiqués sur la 2ème page)	For model differences, refer to the test report
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	**PUBLICATION** **EDITION** IEC 61347-1:2007+A1+A2 IEC 61347-2-13:2014 for national deviations see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	17057899 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

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Date: 19.04.2016

Signature: Ing. M. Eichenseder

TÜV Rheinland LGA Products GmbH TÜVRheinland® Zertifizierungsstelle

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 61347-2-13
Part 2: Particular requirements:
Section 13 – d.c. or a.c. supplied electronic controlgear for LED modules

Report Number. .....:	17057899 001
Date of issue .....:	Apr. 15, 2016
Total number of pages.....	70
Test report remark.....	Separated from 17032058 001 & 17032058 002 report
Name of Testing Laboratory preparing the Report.....:	TÜV Rheinland (Shenzhen) Co., Ltd. East of F/1, F/2~F/4, Building 1, Cybio Technology Building No. 6 Langshan No.2 Road, North Hi-tech Industry Park 518057 Shenzhen Nanshan District CHINA
Applicant's name.....:	Dongguan Rico Electronic Co., Ltd.
Address .....:	Huangtang Industrial Park, Hengli Town, Dongguan City, 523460 Guangdong, China
Test specification:	
Standard .....:	IEC 61347-2-13:2014 (Second Edition) used in conjunction with IEC 61347-1:2007 (Second Edition) + A1:2010 + A2:2012
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC61347_2_13E
Test Report Form(s) Originator.....:	Intertek Semko AB
Master TRF.....:	2014-12

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.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Led Power Supply
Trade Mark ..... :	Manufacturer name shown on rating label
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	RKPO-zzxxxyyyy (for xxx, yyyy and zz, see page 6 for details)
Ratings ..... :	I/P: 100-240Vac, 50/60Hz, 0.6A O/P: see page 7 for details

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **CB Testing Laboratory:**	TÜV Rheinland (Shenzhen) Co., Ltd.	
Testing location/ address ..... :	East of F/1, F/2~F/4, Building 1, Cybio Technology Building No. 6 Langshan No.2 Road, North Hi-tech Industry Park 518057 Shenzhen Nanshan District CHINA	
☐ **Associated CB Testing Laboratory:**		
Testing location/ address ..... :		
Tested by (name, function, signature) ..... :	Jet Luo	
Approved by (name, function, signature) .. :	Tristan Deng	
☐ **Testing procedure: TMP/CTF Stage 1:**		
Testing location/ address ..... :		
Tested by (name, function, signature) ..... :		
Approved by (name, function, signature) .. :		
☐ **Testing procedure: WMT/CTF Stage 2:**		
Testing location/ address ..... :		
Tested by (name + signature) ..... :		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
☐ **Testing procedure: SMT/CTF Stage 3 or 4:**		
Testing location/ address ..... :		
Tested by (name, function, signature) ..... :		
Witnessed by (name, function, signature) . :		
Approved by (name, function, signature) .. :		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):

- Attachment 1: IP test report for models RKPO-EUxxxyyyy (5 pages)
- Attachment 2: UK plug test report for model RKPO-UKxxxyyyy (5 pages)
- Attachment 3: EU plug test report for model RKPO-EUxxxyyyy (49 pages)
- 8 pages of photo document

Summary of testing:

Tests performed (name of test and test clause):

1. Maximum ambient temperature: 40°C

2. The following tests have been made on representative models:

Clause(s)	Test(s)
IEC 61347-2-13:2014	
7	Rubbing test
8	Protection against accidental contact with live part
11	Humidity test
12	Electric strength
14	Fault conditions
15	Transformer heating and Abnormal conditions
17	Creepage distance and clearances
19	Resistance to heat, fire and tracking
IEC 61347-1: 2007+A1: 2010+A2: 2012	
L.6	Heating
L.7	Short-circuit and overload protection
L.8	Insulation resistance and electric strength
N.4.3	Mandrel test for insulation tape
IEC 60598-1:2008	
4.10	Insulation of Class II luminaires
4.13.1	Impact test
4.13.3	Mechanical test 30 N
8	Protection against electric shock
9	Resistance To dust, solid objects and moisture

Unless otherwise specified, all tests were performed on models **RKPO-EU0503000**, **RKPO-EU1202000**, **RKPO-EU2401000** which represent all models.

The EUTs passed the test.

Testing location:

Unless otherwise indicated, all tests were performed at the location stated in “Testing procedure and testing location”.

Summary of compliance with National Differences:

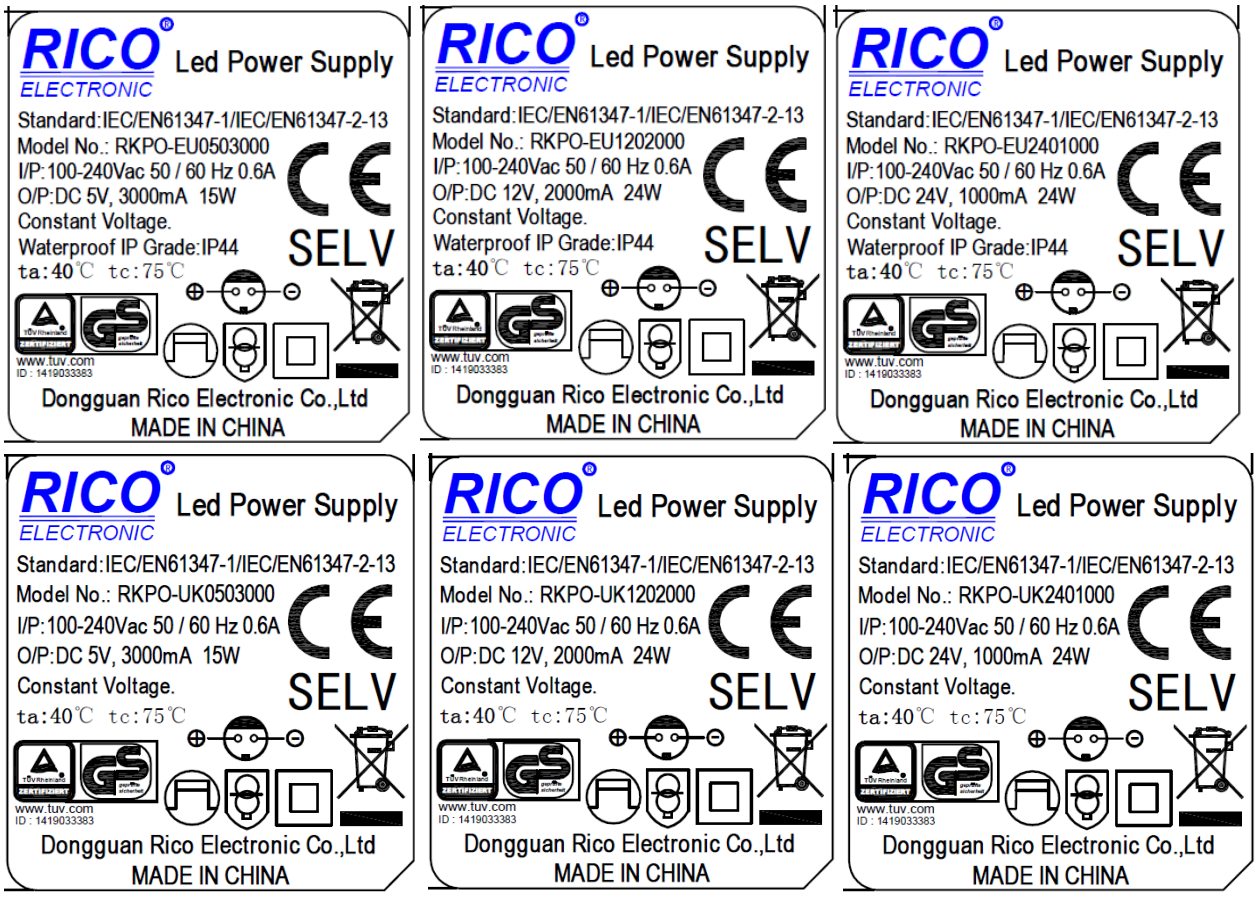
List of countries addressed: AU, DE, JP

AU=Australia, DE=Germany, JP=Japan

For National Differences see end of this test report.

☒ **The product fulfils the requirements of EN 61347-1:2008+A1:2011+A2:2013, EN 61347-2-13:2014**

Copy of marking plate



Note(s): 1. Above label for representing the other models and it is only a draft.
2. IP44 for RKPO-EUxxxyyyy only.

Test item particulars..... :	LED Driver
Classification of installation and use ..... :	Class II, Independent SELV type
Supply Connection ..... :	Direct-plug in
..... :	
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing ..... :	
Date of receipt of test item..... :	2016-03-17
Date (s) of performance of tests..... :	2016-03-18 to 2016-04-11

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 61347-1

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	Dongguan Rico Electronic Co., Ltd. Huangtang Industrial Park, Hengli Town, Dongguan City, 523460 Guangdong, China

General product information:

1. The EUT covered by this report is a series of Independent LED drive with series name RKPO-zzxxxyyyy for LED modules or LED lamps.
2. RKPO-EUxxxyyyy and RKPO-UKxxxyyyy series are identical to each other except for models name, plug type and IP code.
   (IP20 for UK plug type with model RKPO-UKxxxyyyy, IP44 for EU plug type with model RKPO-EUxxxyyyy)
3. The bottom enclosure and top enclosure are fixed by ultrasonic welding.
4. All models have the same circuit diagram, construction and PCB layout, only have different ratings for some components.

Definition of variable in model name:

Variable:	Range of variable:	Content:
xxx	030, 035, 050, 090, 120, 240	Three digits, indicate 10 time of output voltage in Volt.
yyyy	0100, 0300, 0500, 1000, 1200, 1500, 2000, 2500, 3000	Four digits, indicate 1000 times of output current in mA.
zz	EU, UK	Represents the plug type for different countries. (EU=Europe, UK=United Kingdom)
Note: IP44 for RKPO-EUxxxyyyy, IP20 for RKPO-UKxxxyyyy.		

Rating:
Independent controlgear, non-inherently short circuit proof, constant voltage output, Class II, ta=40°C, tc=75°C (at the top of enclosure under transformer).

Model list:

Model list	Output Voltage (V)	Output Current (A)	Output power (W)	Transformer (T1)
RKPO-zzxxxyyyy	3	0.5	1.5	RK24-05V0 (aux. winding N4 Ø0.2mm*16Ts, sec. winding N3: Ø0.55mm*6Ts)
	3	1	3	
	3	1.5	4.5	
	3	2	6	
	3.5	0.5	1.75	
	3.5	1	3.5	
	3.5	1.2	4.2	
	3.5	1.5	5.25	
	5	0.5	2.5	
	5	1	5	
	5	1.5	7.5	
	5	2	10	
	5	2.5	12.5	
	5	3	15	
	9	0.5	4.5	RK24-12V0 (aux. winding N4 Ø0.2mm*16Ts, sec. winding N3: Ø0.6mm*12Ts)
	9	1	9	
	9	1.5	13.5	
	9	2	18	
	12	0.3	3.6	
	12	0.5	6	
	12	1	12	
	12	1.5	18	
	12	2	24	
	24	0.1	2.4	RK24-24V0 (aux. winding N4 Ø0.2mm*16Ts, sec. winding N3: Ø0.5mm*24Ts)
	24	0.3	7.2	
	24	0.5	12	
	24	1	24	

Notes:

1. All models have the same circuit diagram, PCB layout, construction, only turns of secondary of transformer may be different and ratings for some components are different.
2. The model RKPO-EU051200 from the report 17032058 001 and 17032058 002 was replaced by RKPO-EU0351200 in the new report 17057899 001 to meet three digits of output volts.
3. Two models have the same circuit diagram, PCB layout, construction, and secondary, only output digits xx changed to xxx
4. Factory (ies) have to use new models after report 17057899 001 approved by TUV Rheinland.

Model different list:

Model No.	R7, R8	R15	R16	D6	D7	C11	C12	T1
RKPO-zz0300500	3Ω-6.8Ω	2.67K	9.53K	3A/40V	3A/40V	1000uF/10V	1000uF/10V	RK24-05V0
RKPO-zz0301000								
RKPO-zz0301500	1Ω-3Ω							
RKPO-zz0302000								
RKPO-zz0350500	3Ω-6.8Ω	4.53K	9.53K	3A/40V	3A/40V	1000uF/10V	1000uF/10V	
RKPO-zz0351000								
RKPO-zz0351200								
RKPO-zz0351500								
RKPO-zz0500500	3Ω-6.8Ω	1.05K	1K	5A/40V	5A/40V	1000uF/10V	1000uF/10V	
RKPO-zz0501000								
RKPO-zz0501500								
RKPO-zz0502000	1Ω-3Ω							
RKPO-zz0502500								
RKPO-zz0503000								
RKPO-zz0900500	3Ω-6.8Ω	7.5K	2.74K	5A/100V	5A/100V	1000uF/16V	470uF/16V	RK24-12V0
RKPO-zz0901000								
RKPO-zz0901500	1Ω-3Ω							
RKPO-zz0902000								
RKPO-zz1200300	3Ω-6.8Ω	10.7K	2.74K	5A/100V	5A/100V	1000uF/16V	470uF/16V	
RKPO-zz1200500								
RKPO-zz1201000								
RKPO-zz1201500	1Ω-3Ω							
RKPO-								

zz1202000								
RKPO-zz2400100	3Ω-6.8Ω	24K	2.74K	3A/200V	3A/200V	470uF/50V	220uF/50V	RK24-24V0
RKPO-zz2400300								
RKPO-zz2400500	1Ω-3Ω							
RKPO-zz2401000								

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

4 (4)	GENERAL REQUIREMENTS		P
- (4)	Insulation materials according requirements in Annex N of IEC 61347-1	(see Annex N)	P
- (4)	Compliance of independent controlgear enclosure with IEC 60 598-1		P
- (4)	Built-in magnetic ballast with double or reinforced insulation comply with Annex I of IEC 61347-1		N/A
- (4)	Built-in electronic controlgear with double or reinforced insulation comply with Annex O of IEC 61347-1	(see Annex O)	N/A
4 (4)	SELV controlgear comply with Annex I of this part 2 and Annex L of IEC 61347-1	(see Annex L)	P
4 (-)	Transformer comply with IEC 61558		P
	Dielectric strength test of insulated winding wires is limited to 3 kV if input voltage ≤ 300 V		P

6 (6)	CLASSIFICATION		P
	Built-in controlgear ..... :	Yes ☐ No ☒	—
	Independent controlgear ..... :	Yes ☒ No ☐	—
	Integral controlgear ..... :	Yes ☐ No ☒	—
6 (-)	Auto-wound controlgear ..... :	Yes ☐ No ☒	—
	Separating controlgear ..... :	Yes ☐ No ☒	—
	Isolating controlgear ..... :	Yes ☒ No ☐	—
	SELV controlgear ..... :	Yes ☒ No ☐	—

7 (7)	MARKING		P
7.1 (7.1)	**Mandatory markings**		**P**
	a) mark of origin	See the copy of marking plate	P
	b) model number or type reference	See the copy of marking plate	P
	c) symbol for independent controlgear, if applicable	See the copy of marking plate	P
	d) correlation between interchangeable parts and controlgear marked		N/A
	e) rated supply voltage (V)	100-240Vac	P
	supply frequency (Hz)	50/60Hz	P
	supply current (A)	0.6A	P
	f) earthing symbol	Class II equipment.	N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	k) wiring diagram	See the copy of marking plate	P
	l) value of t_c	75°C	P
	m) symbol for declared temperature		N/A
	t) LUM earthing symbol		N/A
	u) if not SELV maximum working voltage U_{out} between:		N/A
	- output terminals (V) ..... :		N/A
	- output terminals and earth (V) ..... :		N/A
7.1 (-)	Constant voltage type:	Yes ☒ No ☐	—
	- rated output power P_{rated} (W) ..... :	See copy of marking plate	P
	- rated output voltage U_{rated} (V) ..... :	See copy of marking plate	P
	Constant current type:	Yes ☐ No ☒	—
	- rated output power P_{rated} (W) ..... :		N/A
	- rated output current I_{rated} (A) ..... :		N/A
	Indication if for LED modules only	See the copy of marking plate	P
7.1 (7.2)	Marking durable and legible		P
	Rubbing 15 s water, 15 s petroleum; marking legible		P
7.2 (7.1)	**Information to be provided, if applicable**		**P**
	h) declaration on protection against accidental contact	Mentioned in user manual	P
	i) cross-section of conductors (mm²)		N/A
	j) number, type and wattage of lamp(s)		N/A
	s) SELV symbol	SELV	P
7.2 (-)	- declaration of mains connected windings		P

8 (10)	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**P**
- (10.1)	Controlgear protected against accidental contact with live parts	Protected by accessible plastic enclosure	P
- (A2)	Voltage measured with 50 kΩ	(see Annex A)	P
- (A3)	Voltage > 35 V peak or > 60 V d.c. or protective impendance device	(see Annex A)	P
- (10.1)	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
- (10.2)	Capacitors > 0,5 μF: voltage after 1 min (V): < 50 V .....:	No such capacitors	N/A
- (10.3)	**Controlgear providing SELV**		**P**
	Accessible conductive parts are insulated from live parts by double or reinforced insulation in SELV controlgear	Double or reinforced insulation provided.	P
	No connection between output circuit and the body or protective earthing circuit		P
	No possibility of connection between output circuit and the body or protective earthing circuit through other conductive parts		P
	SELV outputs separated by at least basic insulation		P
	ELV conductive parts insulated as live parts		P
	Tests according Annex L of IEC 61347-1		P
- (10.4)	**Accessible conductive parts in SELV circuits**		**P**
	Output voltage under load ≤ 25 V r.m.s. or ≤ 60 V d.c.	(See Annex A)	P
	If output voltage > 25 V r.m.s. or > 60 V d.c.; No load output ≤ 35 V peak or ≤ 60 V d.c and touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:		P
	One conductive part is insulated if output voltage or current exceeding the values above and withstand test voltage 500 V		N/A
	Double or reinforced insulation bridged by appropriate and at least two resistors or two Y2 capacitors or one Y1 capacitor	Y1 capacitors CY1, CY2 used between primary circuit and SELV.	P
	Y1 or Y2 capacitors comply with IEC 60384-14	VDE approved Y1 capacitors provided.	P
	Resistors comply with test (a) in 14.1 of IEC 60065		N/A

9 (8)	**TERMINALS**		**N/A**
	Screw terminals according section 14 of IEC 60598-1:		N/A
	Separately approved; component list		N/A
	Part of the controlgear		N/A
	Screwless terminals according section 15 of IEC 60598-1:		N/A
	Separately approved; component list		N/A
	Part of the controlgear		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

10 (9)	**PROVISION FOR PROTECTIVE EARTHING**		**N/A**
- (9.1)	**Provisions for protective earthing**		**N/A**
	Terminal complying with clause 8		N/A
	Locked against loosening and not possible to loosen by hand		N/A
	Not possible to loosen clamping means unintentionally on screwless terminals		N/A
	Earthing via means of fixing		N/A
	Earthing terminal only used for the earthing of the control gear		N/A
	All parts of material minimizing the danger of electrolytic corrosion		N/A
	Made of brass or equivalent material		N/A
	Contact surface bare metal		N/A
- (9.2)	**Provision for functional earthing**		N/A
	Comply with clause 8 and 9.1		N/A
- (9.3)	**Earth contact via the track on the printed board**		N/A
	Test with a current of 25 A between earthing terminal and each of the accessible metal parts; measured resistance (Ω) at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A
- (9.4)	**Earthing of built-in lamp controlgear**		N/A
	Earth by means of fixing to earthed metal of luminaire in compliance of 7.2 of IEC 60598-1		N/A
	Earthing terminal only for earthing the built-in controlgear		N/A
- (9.5)	**Earthing via independent controlgear**		N/A
- (9.5.1)	Earth connection to other equipment		N/A
	Looping or through connection, conductor min. 1,5 mm² and of copper or equivalent		N/A
	Protective earthing wires in line with 5.3.1.1 and clause 7		N/A
- (9.5.2)	Earthing of the lamp compartments powered via the independent lamp controlgear		N/A
	Test with a current of 25 A between input and output earth terminals; measured resistance (Ω) between earthing terminal and each of the accessible metal parts at ≥ 10 A according 7.2.3 of IEC 60598-1: < 0,5 Ω ..... :		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Output earthing terminal marked as in 7.1 t) of IEC 61347-1		N/A

11 (11)	MOISTURE RESISTANCE AND INSULATION		P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	For basic insulation ≥ 2 MΩ ..... :	> 2 MΩ	P
	For double or reinforced insulation ≥ 4 MΩ ..... :	> 4 MΩ	P
	Between primary and secondary circuits in controlgear providing SELV, values in Annex L in IEC 61347-1	See annex L	P
11 (-)	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear		N/A

12 (12)	ELECTRIC STRENGTH		P
	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for SELV, test voltage 500 V		P
	Working voltage ≤ 50 V, test voltage 500 V		P
	Working voltage > 50 V ≤ 1000 V, test voltage (V):		P
	Basic insulation, 2U + 1000 V	1875 V (see annex L)	P
	Supplementary insulation, 2U + 1000 V		P
	Double or reinforced insulation, 4U + 2000 V	3750 V (see annex L)	P
	No flashover or breakdown		P
	Solid or thin sheet insulation for double or reinforced insulation fulfil the requirements in Annex N in IEC 61347-1	(see annex N)	P

14 (14)	FAULT CONDITIONS		P
- (14)	When operated under fault conditions the controlgear:		P
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		P
	Thermally protected controlgear does not exceed the marked temperature value		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected	(see appended table 14)	P
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)	(see appended table 14)	N/A
	Creepage distances on printed boards less than specified in clause 16 in Part 1 provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table 14)	P
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile	(see appended table 14)	N/A
- (14.4)	Short-circuit across electrolytic capacitors	(see appended table 14)	P
- (14.5)	After the tests has been carried out on three samples:		P
	The insulation resistance ≥ 1 MΩ ..... :	> 1 MΩ	P
	No flammable gases		P
	No accessible parts have become live		P
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		P
- (14.6)	Relevant fault condition tests with high-power supply		—
14 (-)	Temperature declared thermally protected lamp controlgear fulfil requirements in Annex C		N/A

15 (-)	**TRANSFORMER HEATING**		**P**
15.1	**General**		**P**
	Transformer comply with clause L.6 and L.7 of IEC 61347-1		P
	Output voltage of SELV controlgear not exceed limits in 10.4 of IEC 61347-1 during the test of 15.1 and 15.2		P
15.2 (-)	**Normal operation**		**P**
	Comply with clause L.6 of IEC 61347-1	(See annex 4)	P
15.3 (-)	**Abnormal operation**		**P**
	Comply with clause L.7 of IEC 61347-1	(See annex 4)	P
	Double LED modules or equivalent load connected in parallel to the output terminals of constant voltage type		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Double LED modules or equivalent load connected in parallel to the output terminals of constant current type		N/A
15 (-)	During and at the end of the tests no defect impairing safety, nor any smoke or flammable gases produced		P
16 (15)	**CONSTRUCTION**		**P**
- (15.1)	**Wood, cotton, silk, paper and similar fibrous material**		**P**
	Wood, cotton, silk, paper and similar fibrous material not used as insulation		P
- (15.2)	**Printed circuits**		**P**
	Printed circuits used as internal connections complies with clause 14		P
- (15.3)	**Plugs and socket-outlets used in SELV or ELV circuits**		**N/A**
	No dangerous compatibility between output socket-outlet and a plug for socket-outlets for input circuit in relation to installation rules, voltages and frequencies	No socket-outlet used.	N/A
	Plugs and socket-outlets for SELV comply with IEC 60906-3 and IEC 60884-2-4		N/A
	Plugs and socket-outlets for SELV ≤ 3 A, ≤ 25 V r.m.s. or ≤ 60 V d.c. and ≤ 72 W comply with IEC 60906-3 and IEC 60884-2-4 or:		N/A
	- plugs not able to enter socket-outlets of other standardised system		N/A
	- socket-outlets not admit plugs of other standardised system		N/A
	- socket-outlets without protective earth		N/A
17 (16)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
- (16)	Creepage distances and clearances according to Table 3 and 4, as appropriate	(see appended table 17(16))	P
	Controlgears providing SELV comply with L.1 in Annex L		P
	Insulating lining of metallic enclosures		N/A
	Basic insulation on printed boards tested according to clause 14		N/A
	Distances subjected to both sinusoidal voltage as non-sinusoidal pulses not less than value in either Table 3 or 4		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Creepage distances not less than minimum clearance		P

18 (17)	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		**P**
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)		N/A
(4.11)	**Electrical connections**		**N/A**
(4.11.1)	Contact pressure		N/A
(4.11.2)	**Screws:**		**N/A**
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
(4.11.3)	**Screw locking:**		**N/A**
	- spring washer		N/A
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood or mounting surface	No wood	P
(4.11.6)	Electro-mechanical contact systems		N/A
(4.12)	**Mechanical connections and glands**		**N/A**
(4.12.1)	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: torque (Nm); part ..... :		N/A
	Torque test: torque (Nm); part ..... :		N/A
	Torque test: torque (Nm); part ..... :		N/A
(4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
(4.12.4)	**Locked connections:**		**N/A**
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm ..... :		N/A
(4.12.5)	Screwed glands; force (Nm) ..... :		N/A

19 (18)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**P**
- (18.1)	Ball-pressure test:		P
	- part tested; temperature (°C)..... :	Enclosure: 125°C, 0.9mm Output connector: 125°C; 1.0mm	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- part tested; temperature (°C)..... :	Bobbin of transformer T1: accepted for phenolic material	P
- (18.2)	Test of printed boards:	Comply with relevant requirements.	P
	- part tested..... :		N/A
	- part tested..... :		N/A
- (18.3)	Glow-wire test (650°C):		P
	- part tested..... :	Enclosure, output connector	P
	- part tested..... :		N/A
- (18.4)	Needle flame test (10 s):		P
	- part tested..... :	Enclosure, output connector	P
	- part tested..... :		N/A
- (18.5)	Tracking test:		N/A
	- part tested..... :		N/A
	- part tested..... :		N/A

20 (19)	**RESISTANCE TO CORROSION**	**N/A**
	- test according 4.18.1 of IEC 60598-1	N/A
	- adequate varnish on the outer surface	N/A

14	**TABLE: tests of fault conditions**	**P**
Part	Simulated fault	Hazard
For model: RKPO-EU0503000		
D1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
C1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
C2	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
U1 Pin 8-1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO

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Clause	Requirement + Test	Result - Remark	Verdict
U1 Pin 3-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.061A/2.5W O/P: 0A		NO
U1 Pin 6-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.053A/2.6W O/P: 0A		NO
U2 pin 1-2	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
U2 pin 3-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
U2 pin 3	Open circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
U2 pin 1	Open circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
R8	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A		NO
T1 Pin1-2	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
T1 Pin 3-5	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.026A/3.6W O/P: 0A/0W		NO
T1 Pin OA-OB	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.031A/3.6W O/P: 0A/0W		NO
D7	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.061A/2.5W O/P: 0A/0W		NO
Output	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.051A/2.8W O/P: 0A/0W		NO
For model: RKPO-EU1202000			
D1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A		NO

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Clause	Requirement + Test	Result - Remark	Verdict
C1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A		NO
C2	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A		NO
U1 Pin 8-1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A		NO
U1 Pin 3-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.044A/4.6W O/P: 0A		NO
U1 Pin 6-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.034A/2.6W O/P: 0A		NO
U2 pin 1-2	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
U2 pin 3-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
U2 pin 3	Open circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
U2 pin 1	Open circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
R8	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A		NO
T1 Pin1-2	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W		NO
T1 Pin 3-5	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.026A/3.6W O/P: 0A/0W		NO
T1 Pin OA-OB	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.031A/3.6W O/P: 0A/0W		NO
D7	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.041A/3.8W O/P: 0A/0W		NO

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Clause	Requirement + Test	Result - Remark	Verdict

Output	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.051A/2.8W O/P: 0A/0W	NO
For model: RKPO-EU2401000		
D1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
C1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
C2	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
U1 Pin 8-1	Short circuit: 90V/264 V test result: Fuse opened immediately. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
U1 Pin 3-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.042A/4.1W O/P: 0A	NO
U1 Pin 6-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.029A/2.5W O/P: 0A	NO
U2 pin 1-2	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W	NO
U2 pin 3-4	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W	NO
U2 pin 3	Open circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W	NO
U2 pin 1	Open circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W	NO
R8	Short circuit: 90V/264 V test result: Fuse opened immediately. Q1 damage. Observed 1 S. No hazards. I/P: 0A O/P: 0A	NO
T1 Pin1-2	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.028A/3.6W O/P: 0A/0W	NO

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Clause	Requirement + Test	Result - Remark	Verdict
T1 Pin 3-5	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.026A/3.6W O/P: 0A/0W		NO
T1 Pin OA-OB	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.031A/3.6W O/P: 0A/0W		NO
D7	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.031A/3.6W O/P: 0A/0W		NO
Output	Short circuit: 90V/264 V test result: Unit shut down immediately. Observed 10mins. No hazards. I/P: 0.051A/2.8W O/P: 0A/0W		NO
Remark: 1) Each fault where F1 opened was repeated three times with each current fuse source and with same result.			

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Clause	Requirement + Test	Result - Remark	Verdict

17 (16)	**TABLES: Creepage distances and clearances**						
Table 3	**Minimum distances (mm) for a.c. (50/60 Hz) sinusoidal voltages**						
RMS working voltage (V) not exceeding		50	150	250	500	750	1000
Creepage distances							
Required basic insulation, PTI ≥ 600		0,6	0,8	1,5	3	4	5,5
Measured							
Required basic insulation, PTI < 600		1,2	1,6	2,5	5	8	10
Measured							
Required supplementary insulation PTI ≥ 600		-	0,8	1,5	3	4	5,5
Measured							
Required supplementary insulation PTI < 600		-	1,6	2,5	5	8	10
Measured							
Required reinforced insulation		-	3,2	5	6	8	11
Measured							
Clearances							
Required basic insulation		0,2	0,8	1,5	3	4	5,5
Measured							
Required supplementary insulation		-	0,8	1,5	3	4	5,5
Measured							
Required reinforced insulation		-	1,6	3	6	8	11
Measured							

Table 4	**Minimum distances (mm) for non-sinusoidal pulse voltages**						
Rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
Required clearances	1,0	1,5	2	3	4	5,5	8
Measured							
Rated pulse voltage (peak kV)	10	12	15	20	25	30	40
Required clearances	11	14	18	25	33	40	60
Measured							
Rated pulse voltage (peak kV)	50	60	80	100	-	-	-
Required clearances	75	90	130	170	-	-	-
Measured							

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Clause	Requirement + Test	Result - Remark	Verdict

Limits according to L.11 applied to this product.					
Clearance cl and creepage distance dcr at/of:	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
For all models					
On primary					
L-N on PCB before F1 (B)*	250	2.5	3.7	2.6	3.7
Different polarity of fuse F1 (B)	250	2.5	4.9	2.6	4.9
Primary components to accessible part					
Primary component C2 to accessible enclosure (R*)	250	4.7	5.2	5.0	5.2
Primary components to secondary components					
Primary trace to secondary trace under CY1 (R)	250	4.7	6.5	5.0	6.5
Primary trace to secondary trace of U2/CY2 (R)	333	5.8	7.0	6.7	7.0
Trace of primary component R4 to secondary component R14 (R)	250	4.7	7.0	5.0	7.0
Primary trace to secondary trace under T1 (R)	327	5.8	6.8	6.7	6.8
Core to secondary pin of T1 (R)	327	5.8	6.9	6.7	6.9
Core to secondary pin of CY1 (R)	327	5.8	11.0	6.7	11.0
Core to secondary pin of U2 (R)	327	5.8	10.0	6.7	10.0
Core to secondary component U3 (R)	327	5.8	12.0	6.7	12.0
Core to secondary pin of CY2 (R)	327	5.8	12.0	6.7	12.0

Note(s): * B=basic insulation, R=reinforced insulation.

1) 2 layers insulation tape wrapped around transformer and bottom of core.
2) Triple insulated wire used for secondary winding of the transformer.
3) Core of transformer considered as primary part.
4) Insulation tube and tape are used at primary windings and secondary windings crossing each other.

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Clause	Requirement + Test	Result - Remark	Verdict

A (A)	**ANNEX A - TEST TO ESTABLISH WHETHER A CONDUCTIVE PART IS A LIVE PART WHICH MAY CAUSE AN ELECTRIC SHOCK**		**P**
(A.1)	Comply with A.2 or A.3		P
(A.2)	Voltage ≤ 35 V peak or ≤ 60 V d.c .....:	Max. 24.21Vdc	P
(A.3)	If voltage > 35 V peak or > 60 V d.c. or protective impendance device; touch current does not exceed 0,7 mA (peak) or 2 mA d.c. .....:	Max.0.13 mA <0.7 mA (peak)	P
	Comply with Annex G of IEC 60598-1		P

C (C)	**ANNEX C – PARTICULAR REQUIREMENTS FOR ELECTRONIC LAMP CONTROLGEAR WITH MEANS OF PROTECTION AGAINST OVERHEATING**		**N/A**
(C3)	**GENERAL REQUIREMENTS**		**N/A**
(C3.1)	Thermal protection means integral with the convertor, protected against mechanical damage		N/A
	Renewable only by means of a tool		N/A
	If function depending on polarity, for cord-connected equipment protection means in both leads		N/A
	Thermal links comply with IEC 60691		N/A
	Electrical controls comply with IEC 60730-2-3		N/A
(C3.2)	No risk of fire by breaking (clause C7)		N/A
(C5)	**CLASSIFICATION**		**N/A**
	a) automatic resetting type		—
	b) manual resetting type		—
	c) non-renewable, non-resetting type		—
	d) renewable, non-resetting type		—
	e) other type of thermal protection; description ..:		N/A
(C6)	**MARKING**		N/A
(C6.1)	Symbol for temperature declared thermally protected ballasts		N/A
(C6.2)	Declaration of the type of protection provided		N/A
(C7)	**LIMITATION OF HEATING**		N/A
(C7.1)	**Preselection test:**		N/A
	Test sample placed for at least 12 h in an oven having temperature (t_c - 5) K		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No operation of the protection device		N/A
(C7.2)	**Functioning of protection means:**		N/A
	Normal operation of the sample in a test enclosure according to Annex D at an ambient temperature such that (t_c +0; -5) °C is obtained		N/A
	No operation of the protection device		N/A
	Introducing of the most onerous test condition determined during test of clause 14		N/A
	Output of windings connected to the mains supply short-circuited, and other part of the convertor operated under normal conditions		N/A
	Increasing of the current through the windings continuously until operation of the protection means		N/A
	Continuous measuring of the highest surface temperature		N/A
	Ballasts according to C5 a) or C5 e) operated until stable conditions are achieved		N/A
	Automatic-resetting thermal protectors working 3 times		N/A
	Ballasts according to C5 b) working 6 times		N/A
	Ballasts according to C5 c) and C5) d) working once		N/A
	Highest temperature does not exceed the marked value		N/A
	Any overshoot of 10% over the marked value within 15 min		N/A
D (D)	**ANNEX D – REQUIREMENTS FOR CARRY OUT THE HEATING TESTS OF THERMALLY PROTECTED LAMP CONTROLGEAR**		**N/A**
	Tests in C7 performed in accordance with Annex D, if applicable		N/A
E (E)	**ANNEX E – USE OF CONSTANT S OTHER THAN 4500 IN t_w TESTS**		**N/A**
	Comply with tests according Annex E		N/A
F	**ANNEX F - DRAUGHT-PROOF ENCLOSURE**		**P**
	Draught-proof enclosure in accordance with the description		P
	Dimensions of the enclosure		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Other design; description		N/A
H (H)	**ANNEX H - TESTS**		P
	All tests performed in accordance with the advice given in Annex H, if applicable		P
I (L)	**ANNEX I: PARTICULAR ADDITIONAL REQUIREMENTS FOR SELV D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR LED MODULES**		**P**
(L.3)	**Classification**		**P**
	Class I	Yes ☐ No ☒	—
	Class II	Yes ☒ No ☐	—
	Class III	Yes ☐ No ☒	—
	non-inherently short circuit proof controlgear	Yes ☒ No ☐	—
	inherently short circuit proof controlgear	Yes ☐ No ☒	—
	fail safe controlgear	Yes ☐ No ☒	—
	non-short-circuit proof controlgear	Yes ☐ No ☒	—
(L.4)	**Marking**		**P**
	Adequate symbols are used	See copy of marking plate for details.	P
(L.5)	**Protection against electric shock**		**N/A**
	Comply with 9.2 of IEC 61558-1		N/A
(L.6)	**Heating**		**P**
	No excessive temperatures in normal use		P
	Value if capacitor t_c marked ..... :	See annex 1	—
	Winding insulation classified as Class ..... :	Class B	—
	Comply with tests of clause 14 of IEC 61558-1 with adjustments		P
(L.7)	**Short-circuit and overload protection**		**P**
	Comply with tests of clause 15 of IEC 61558-1 with adjustments	See annex 4, test at 264VAC	P
(L.8)	**Insulation resistance and electric strength**		**P**
(L.8.1)	Conditioned 48 h between 91 % and 95 %		P
(L.8.2)	Insulation resistance		P
	Between input- and output circuits not less than 5 MΩ ..... :	100 MΩ	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Between metal parts of class II convertors which are separated from live parts by basic insulation only and the body not less than 5 MΩ ..... :		N/A
	Between metal foil in contact with the inner and outer surfaces of enclosures of insulating material not less than 2 MΩ ..... :	Min. 500 MΩ measured.	P
(L.8.3)	Electric strength		P
	1) Between live parts of input circuits and live parts of output circuits ..... :	3750 V (Between input and output and between transformer T1 secondary and core)	P
	2) Over basic or supplementary insulation between:		P
	a) live parts having different polarity ..... :	1875 V (Between L and N after current fuse F1 removed)	P
	b) live parts and body if intended to be connected to protective earth ..... :		N/A
	c) accessible metal parts and a metal rod of the same diameter as the flexible cable or cord ..... :		N/A
	d) live parts and an intermediate metal part ..... :		N/A
	e) intermediate metal parts and the body ..... :		N/A
	f) each input circuit and all other input circuits ... :		N/A
	3) Over reinforced insulation between the body and live parts ..... :	3750 V	P
(L.9)	**Construction**		**P**
(L.9.1)	Transformer comply with 19.12 of IEC 61558-1 and 19 of IEC 61558-2-6	All windings fixed by bobbin and insulation tape VDE approved triple insulated wires used for secondary winding of transformer T1	P
	HF transformer comply with 19 of IEC 61558-2-16	Insulation tape and tube used where secondary triple insulated wire can contact core/primary enamelled wires	P
(L.10)	**Components**		**P**
	Protective devices comply with 20.6 – 20.11 of IEC 61558-1	VDE approval current fuse used, repeated 3 times for each source at current fuse opened where component fault.	P
(L.11)	**Creepage distances and clearances**		**P**
	1. Insulation between input and output circuits, basic insulation:		N/A
	a) measured values ≥ specified values (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	b) measured values ≥ specified values (mm) ..... :		N/A
	c) measured values ≥ specified values (mm) ..... :		N/A
	2. Insulation between input and output circuits, double or reinforced insulation:		P
	a) measured values ≥ specified values (mm) ..... :	See table 17 (16).	P
	b) measured values ≥ specified values (mm) ..... :	See table 17 (16).	P
	c) measured values ≥ specified values (mm) ..... :	See table 17 (16).	P
	3. Insulation between adjacent input circuits		P
	- measured values ≥ specified values (mm) ..... :	See table 17 (16).	P
	3. Insulation between adjacent output circuits		N/A
	- measured values ≥ specified values (mm) ..... :		N/A
	4. Insulation between terminals for external connection:		N/A
	- measured values ≥ specified values (mm) ..... :		N/A
	5. Basic or supplementary insulation:		P
	a) measured values ≥ specified values (mm) ..... :	See table 17 (16).	P
	b) measured values ≥ specified values (mm) ..... :	See table 17 (16).	P
	c) measured values ≥ specified values (mm) ..... :		N/A
	d) measured values ≥ specified values (mm) ..... :		N/A
	e) measured values ≥ specified values (mm) ..... :		N/A
	6. Reinforced insulation or insulation:		P
	Between body and output circuit: measured values ≥ specified values (mm) ..... :		P
	Between body and output circuit if provision against transient voltages: measured values ≥ specified values (mm) ..... :		P
	7. Distance through insulation:		N/A
	a) measured values ≥ specified values (mm) ..... :		N/A
	b) measured values ≥ specified values (mm) ..... :		N/A
	c) measured values ≥ specified values (mm) ..... :		N/A

(N)	**ANNEX N: REQUIREMENTS FOR INSULATION MATERIALS USED FOR DOUBLE OR REINFORCED INSULATION**		**P**
(N.4)	**General requirements**		**P**
(N.4.1)	Material comply with IEC 60085 and IEC 60216 series		N/A
(N.4.2)	**Solid insulation**		**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
	Electric strength test at least 5 kV or 1,35 x test voltage in Table N.1		N/A
	If not classified according IEC 60085 and IEC 60216 series: Electric strength test increased 10 % of 5,5 kV or 1,5 x test voltage in Table N.1		N/A
(N.4.3)	**Thin sheet insulation**		**P**
(N.4.3.1)	Thickness and composition of thin sheet insulation		P
	- Inside the ballast and not subjected to handling or abrasion during the production and during maintenance		P
	- Non-separated layers: Min. 3 layers and fulfil mandrel test of 150N		N/A
	- Separated layers: Min. 2 layers and each layer fulfil mandrel test of 50N	Two layers insulation tape wrapped around transformer T1, over transformer bottom core.	P
	- Separated layers (alternative): Min. 3 layers and 2/3 of the layers fulfil mandrel test of 100N		N/A
(N.4.3.2)	Mandrel test (electric strength test during mechanical stress)		P
	Electric strength test after mandrel test:		P
	- Non-separated layers: min. 5 kV or 1,35 x test voltage in Table N.1		N/A
	- 2/3 of min. 3 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1		N/A
	- one of 2 separated layers: min. 5 kV or 1,25 x test voltage in Table N.1	One layer insulation tape with 50N pull force applied Test voltage: 5000V	P
	No flashover or breakdown occurred		P

(O)	**ANNEX O: ADDITIONAL REQUIREMENTS FOR BUILT-IN ELECTRONIC CONTROLGEAR WITH DOUBLE OR REINFORCED INSULATION**		**N/A**
(O.6)	**Marking**		**N/A**
	Marking according clause 7 (7)	See clause 7	N/A
	Special symbol		N/A
	Meaning of the special symbol explained in catalogue		N/A
(O.7)	**Protection against accidental contact with live parts**		**N/A**
	Requirements of clause 8 (10)	See clause 8	N/A
	Test finger not possible to make contact with basic insulated metal parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(O.8)	**Terminals**		**N/A**
	Clause 9 (8)	See clause 9	N/A
(O.9)	**Provision for earthing**		**N/A**
	Functional earthing terminals comply with clause 9 of part 1	Class II equipment	N/A
	No protective earthing terminal		N/A
(O.10)	**Moisture resistance and insulation**		**N/A**
	Clause 11 (11)	See clause 11	N/A
(O.11)	**Electric strength**		**N/A**
	Clause 12 (12)	See clause 12	N/A
(O.13)	**Fault conditions**		**N/A**
	Clause 14 (14)	See clause 14	N/A
	End of test, between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface comply with dielectric strength test reduced to 35 % of values according Table 1 in part 1		N/A
	Insulation resistance according to O.10 between live part and accessible metal parts or external parts of insulating material in contact with the supporting surface not less than 4 MΩ		N/A
(O.14)	**Construction**		**N/A**
	Clause 17 (15)	See clause 17	N/A
	Accessible metal parts insulated from live parts by double or reinforced insulation		N/A
	Live part insulated from supporting surface in contact with external faces by double or reinforced insulation		N/A
(O.15)	**Creepage distances and clearances**		**N/A**
	Clause 18 (16)	See clause 18	N/A
	Comply with corresponding values for luminaries in IEC 60598-1		N/A
(O.16)	**Screws, current-carrying parts and connections**		**N/A**
	Clause 19 (17)	See clause 19	N/A
(O.17)	**Resistance to heat and fire**		**N/A**
	Clause 20 (18)	See clause 20	N/A
(O.18)	**Resistance to corrosion**		**N/A**
	Clause 21 (19)	See clause 21	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

J	**ANNEX J: PARTICULAR ADDITIONAL SAFETY REQUIREMENTS FOR A.C., A.C./D.C. OR D.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR EMERGENCY LIGHTING**		**N/A**
J.1	**General**		**N/A**
	Intended for centralized emergency power supply	Yes ☐ No ☐	—
J.2	**Marking**		**N/A**
J.2.1	Mandatory markings		N/A
	a) symbol EL		N/A
	b) rated emergency supply voltage (V)		N/A
J.2.2	Information to be provided if applicable		N/A
	a) Limits of ambient temperature		N/A
	b) Emergency output factor (EOF_X)		N/A
	c) Information if intended for use in luminaires for high-risk task area lighting		N/A
J.3	General notes on tests		N/A
	Length of output cable in tests..... :		N/A
	Load instead of LED lamps/modules..... :		N/A
J.4	Starting conditions		N/A
	Start rated load in emergency mode without adversely affecting the performance		N/A
J.5	Operating condition		N/A
	Comply with the requirements of 7.2 of IEC 62384 at 90% and 110% of rated emergency supply voltage		N/A
J.6	Emergency supply current		N/A
	Emergency supply current not differ more than ±15 %		N/A
	Supply of low impedance and low inductance		N/A
J.7	EMC immunity		N/A
	Comply with the requirements of IEC 61547		N/A
J.8	Pulse voltage from central battery systems		N/A
	Withstand pulses according Table J.1		N/A
J.9	Tests for abnormal conditions		N/A
	Comply with the requirements of 12 of IEC 62384		N/A
J.10	Comply with the requirements of 13 of IEC 62384		N/A
J.11	Functional safety (EOF_x)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Declared emergency output factor (EOF_x) achieved during emergency operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 1: components						P
object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
EU Plug portion	C	Dongguan Rico Electronic Co., Ltd.	RKPO-EUxxxyyyy	250Vac, 0.6A	DIN VDE 0620-1:2010-02	Tested with appliance
UK plug portion	C	Dongguan Rico Electronic Co., Ltd.	RKPO-UKxxxyyyy	250Vac, 0.6A	BS 1363-1	Tested with appliance
Enclosure	B	SABIC INNOVATIVE PLASTICS B V	357M(f1)	V-0, min. 1.5mm thickness, 120°C	UL 94	UL E45329
Plastic of output Connector	B	DONGGUAN QILONG ELECTRICITY CO LTD	QL 80A	PVC, V-0, 50°C	UL 94	UL E351522
Internal input wire	D	Interchangeable	Interchangeable	24-18AWG, 80ºC, 300V	UL 758	UL E352132
Internal output wire	D	Interchangeable	Interchangeable	22-18AWG, 80ºC, 300V	UL 758	UL E352132
PCB	B,C	SHANDONG JINBAO ELECTRONICS CO LTD	ZD-95(G)F	V-0 or better, 130 °C	UL 94	UL E141940
(Alternative)	D	Interchangeable	Interchangeable	V-0 or better, 130 °C	UL 94	UL
Heat Shrinkable tube for fuse	B	DONGGUAN SALIPT CO LTD	SALIPT S-901-300	300V, 125°C, VW-1	UL 224	UL
Fuse (F1)	A	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY	31TC	T2A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40028150
(Alternative)	D	Walter Electronic Co., Ltd	ICP-Series	T2A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40012824
(Alternative)	D	Dongguan Better Electronic Technology Co., Ltd.	334-Serie(s)	T2A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40025428

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Clause	Requirement + Test	Result - Remark	Verdict

(Alternative)	D	Littelfuse Phils. Inc.	877	T2A, 250Vac	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40023242
Y- capacitor (CY1, CY2) (Y1 type) (Optional)	A	Dongguan Easy-gather Electronic Co., Ltd.	DCF	Max. 3300pF, 400VAC, 125°C	IEC/EN 60384-14	VDE 40022942
(Alternative) (Optional)	D	Guangdong South Hongming Electronic Science and Technology Co., Ltd.	F	Max. 3300pF, 250VAC, 125°C	IEC/EN 60384-14	VDE 40036393
Opto-coupler (U2)	A	Everlight Electronics Co., Ltd.	EL817 V	Ext. dcr.=7.7mm, 110°C	IEC/EN 60747-5-5	VDE 132249
(Alternative)	D	Changzhou Galaxy Century Micro-electronics Co., Ltd.	BPC-817 C	Ext. dcr≥7.8mm, 110 ºC	IEC/EN 60747-5-5	VDE 40034140
Line Filter (L1)	B	Dongguan Rico Electronic Co., Ltd.	UU9.8	130ºC	IEC/EN 61347-2-13	Tested with appliance
-Bobbin	B	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, V-0, 150°C	UL 94	UL E59481
- Magnet Wire	B	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155	155°C	UL 1446	UL E344055
(Alternative)	C	Interchangeable	Interchangeable	130°C	UL 1446	UL
Bridge Diodes (D1-D4)	C	Interchangeable	Interchangeable	Min. 1A, Min. 600V	IEC/EN 61347-2-13	Tested with appliance
Electrolytic Capacitor (C2)	C	Interchangeable	Interchangeable	33uF, Min .400V, 105°C	IEC/EN 61347-2-13	Tested with appliance
Transistors (C1)	C	Interchangeable	Interchangeable	22uF, Min .400V, 105°C	IEC/EN 61347-2-13	Tested with appliance

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Clause	Requirement + Test	Result - Remark	Verdict

Transformer (T1) (For output: 3Vdc, 3.5Vdc, 5Vdc)	B	Dongguan Rico Electronic Co., Ltd.	RK24-05V0	Class B	IEC/EN 61347-2-13	Tested with appliance
Transformer (T1) (For output: 9Vdc, 12Vdc)	B	Dongguan Rico Electronic Co., Ltd.	RK24-12V0	Class B	IEC/EN 61347-2-13	Tested with appliance
Transformer (T1) (For output: 24Vdc)	B	Dongguan Rico Electronic Co., Ltd.	RK24-24V0	Class B	IEC/EN 61347-2-13	Tested with appliance
-Bobbin	B,C	Chang Chun Plastics Co., Ltd.	T375J	Phenolic, V-0, 150 °C, min. thickness 0.7mm.	UL 94, UL 746C	UL E59481
-Magnet wire	B,C	DONG GUAN YIDA INDUSTRIAL CO LTD	UEW/155	155°C	UL 1446	UL E344055
(Alternative)	D	Interchangeable	Interchangeable	130°C	UL 1446	UL
-Insulation tape	B,C	Jingjiang Yahua Pressure Sensitive Glue Co Ltd	PZ ,CT	130°C	UL 510	UL E165111
(Alternative)	D	SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD	JY312	130 °C.	UL510	UL E188295
-Triple insulated wire	B,C	Furukawa Electric Co., Ltd	TEX-E	130°C	IEC 60950-1	VDE 6735
Silicone Rubber	B	Shen Zhen Anpin Silicone Material Co Ltd	AP-905B	V-0, 105ºC	UL 94	UL E257078
(Alternative)	D	Shenzhen Bonic Science & Technology Ltd	BN160	V-0, 150ºC	UL 94	UL E254560
(Alternative)	D	TIANHUAN TECH(DONGGUAN) CO LTD	TH100A/B--2	V-0,,130 ºC	UL 94	UL E257593

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Clause	Requirement + Test	Result - Remark	Verdict

The codes above have the following meaning:

A - The component is replaceable with another one, also certified, with equivalent characteristics

B - The component is replaceable if authorised by the test house

C - Integrated component tested together with the appliance

D - Alternative component

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 2: screw terminals (part of the luminaire)	**N/A**

(14)	**SCREW TERMINALS**		**N/A**
(14.2)	Type of terminal		—
	Rated current (A)		—
(14.3.2.1)	One or more conductors		N/A
(14.3.2.2)	Special preparation		N/A
(14.3.2.3)	Terminal size		N/A
	Cross-sectional area (mm²)		N/A
(14.3.3)	Conductor space (mm)		N/A
(14.4)	Mechanical tests		N/A
(14.4.1)	Minimum distance		N/A
(14.4.2)	Cannot slip out		N/A
(14.4.3)	Special preparation		N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) .		N/A
	External wiring		N/A
	No soft metal		N/A
(14.4.5)	Corrosion		N/A
(14.4.6)	Nominal diameter of thread (mm).....		N/A
	Torque (Nm)		N/A
(14.4.7)	Between metal surfaces		N/A
	Lug terminal		N/A
	Mantle terminal		N/A
	Pull test; pull (N)		N/A
(14.4.8)	Without undue damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	ANNEX 3: screwless terminals (part of the luminaire)	**N/A**

(15)	**SCREWLESS TERMINALS**		**N/A**
(15.2)	Type of terminal ..... :		—
	Rated current (A) ..... :		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5)	Terminals and connections for internal wiring		N/A
(15.5.1)	Mechanical tests		N/A
(15.5.1.1.1)	Pull test spring-type terminals (4 N, 4 samples)….:		N/A
(15.5.1.1.2)	Pull test pin or tab terminals (4 N, 4 samples)……:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.1.2)	Permanent connections: pull-off test (20 N)		N/A
(15.6)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples) ..... :		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles ..... :		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples) ..... :		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples) ..... :		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples)..... :		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples)..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

(15.7)	Terminals external wiring		N/A
	Terminal size and rating		N/A
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) ..... :		N/A
	Pull test pin or tab terminals (4 samples); pull (N) ..... :		N/A
(15.9)	Contact resistance test		N/A
	Voltage drop (mV) after 1 h		N/A

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

	Voltage drop of two inseparable joints	
	Voltage drop after 10th alt. 25th cycle	
	Max. allowed voltage drop (mV) ..... :	—

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

	Voltage drop after 50th alt. 100th cycle	
	Max. allowed voltage drop (mV) ..... :	—

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

	Continued ageing: voltage drop after 10th alt. 25th cycle	
	Max. allowed voltage drop (mV) ..... :	—

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

	Continued ageing: voltage drop after 50th alt. 100th cycle	
	Max. allowed voltage drop (mV) ..... :	—

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

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Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 4 : temperature measurements, thermal tests			
	Type reference ..... :	**RKPO-EU0503000**	—
	Load used ..... :	Equivalent load or LED module	—
	Mounting position of luminaire ..... :	On the black testing board	—
	Ta ..... :	40°C	—
	- test : rated voltage ..... :	100V-240V	—
	- test : test voltage(normal) ..... :	Input : 1.06U_R=106V; I=0.374A; P=19.3W; 1.06U_R=254.4V; I=0.179A; P=19.5W; Output: U=5.03V; I=3A	—
	- test : test voltage(abnormal) ..... :	1. Double the LED modules or equivalent load (connected in parallel) 1.1U_R=264V; I= 0.01A; P=0.09W 2. Over load: 1.1U_R= 264V; I= 0.201A; P=23.0W; Output: U=5.03V; I= 3.56A 0.9U_R= 90V; I= 0.485A; P=21.6W; Output: U=5.01V; I= 3.32A	—

Normal operation

temperature (K/°C) of part	106V/60Hz		254.4V50Hz		Limit
	Horizontal	Vertical	Horizontal	Vertical	
Internal input wire	58.9	62.5	55.1	59.1	80
Ripple capacitor (C1)	68.9	71.3	62.7	66.5	105
Line choke (L1) winding	78.7	81.0	65.7	69.4	130
Line choke (L1) core	68.9	71.5	59.9	64.0	130
Ripple capacitor (C2)	78.6	78.7	76.1	77.9	105
Ripple capacitor (C4)	83.3	80.5	82.9	82.1	105
Y capacitor (CY1)	91.4	89.6	95.2	94.6	125
Transformer (T1) winding 1	98.6	96.4	105.3	104.6	110
Transformer (T1) winding 2	99.3	97.3	106.3	105.7	110
Transformer (T1) core	95.2	93.1	101.5	101.0	110
Optocoupler (U2)	75.6	71.1	77.9	74.4	110

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Clause	Requirement + Test	Result - Remark	Verdict

PCB under near Transformer (T1)	85.5	81.2	89.6	86.1	130
Ripple capacitor (C11)	93.9	95.4	99.0	96.5	105
Ripple capacitor (C12)	75.7	71.6	78.5	75.2	105
Line choke (L2) winding	82.7	79.0	85.9	82.9	130
Internal output wire	67.1	64.3	69.1	67.0	80
Output connector	48.9	48.3	49.6	49.7	50
Plastic enclosure near plug pin holder (internal)	78.5	74.1	82.1	78.8	120
Plastic enclosure near T1 (internal)	64.3	60.8	66.0	63.3	120
Plastic enclosure near output connector (internal)	75.3	74.5	78.9	79.6	120
Plastic enclosure near plug pin holder (external)	68.6	69.0	71.0	70.4	75
Plastic enclosure near T1 (external)	57.7	55.0	59.0	56.8	70
Plastic enclosure near output connector (external)	63.8	62.8	65.9	66.1	70
Plastic enclosure near plug pin holder	47.7	49.1	47.9	49.3	70
Support	48.5	48.6	49.5	49.9	90
Ambient	40.0	40.0	40.0	40.0	--

Abnormal condition			
temperature (K/°C) of part	Abnormal		
	90V/60Hz	264V50Hz	Limit
--	--	--	--

Overload condition			
temperature (K/°C) of part	Abnormal		
	--	264V/50Hz/ Horizontal	Limit
Internal input wire	--	57.5	85
Line choke (L1) winding	--	69.8	175-10=165.0
Line choke (L1) core	--	62.7	175-10=165.0
Transformer (T1) winding 1	--	115.2	175-10=165.0
Transformer (T1) winding 2	--	116.5	175-10=165.0
Transformer (T1) core	--	110.5	175-10=165.0
Line choke (L2) winding	--	94.7	175-10=165.0
Internal output wire	--	74.7	85
Plastic enclosure near plug pin holder (external)	--	75.9	105

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Clause	Requirement + Test	Result - Remark	Verdict

Plastic enclosure near T1 (external)	--	60.8	105
Plastic enclosure near output connector (external)	--	70.0	105
Plastic enclosure near plug pin holder	--	49.1	105
Support	--	51.8	105
Ambient	--	40.0	--

According to normal heating result, The overload heating performed at 264V/50Hz, Horizontal condition will be worse.
Due to test result of clause 14, the heating result can be referred to the normal condition.
Due to test result of clause 15.3, unit shut down, no output, so the heating result can be referred to abnormal condition.

	Type reference ..... :	**RKPO-EU1202000**	—
	Load used ..... :	Equivalent load or LED module	—
	Mounting position of luminaire ..... :	On the black testing board	—
	Ta ..... :	40°C	—
	- test : rated voltage ..... :	100V-240V	—
	- test : test voltage(normal) ..... :	Input : 1.06U_R=106V; I=0.524A; P=28.9W; 1.06U_R=254.4V; I=0.240A; P=28.5W; Output: U=12.11V; I=2.0A;	—
	- test : test voltage(abnormal) ..... :	1. Double the LED modules or equivalent load (connected in parallel) 1.1U_R=264V; I= 0.01A; P=0.11W 2. Over load: 1.1U_R= 264V; I= 0.296A, P=36.8W, Output: U=12.11V; I= 2.6A; 0.9U_R= 90V; I= 0.691A, P=34.8W; Output: U=12.11V; I= 2.3A	—

Normal operation

temperature (K/°C) of part	106V/60Hz		254.4V50Hz		Limit
	Horizontal	Vertical	Horizontal	Vertical	
Internal input wire	65.0	70.0	59.8	65.0	80
Ripple capacitor (C1)	79.9	85.4	68.5	73.9	105
Line choke (L1) winding	98.0	103.7	72.0	77.3	130
Line choke (L1) core	89.7	95.6	67.4	72.8	130

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Clause	Requirement + Test	Result - Remark	Verdict

Ripple capacitor (C2)	89.3	91.2	81.2	84.1	105
Ripple capacitor (C4)	96.1	93.0	90.2	89.2	105
Y capacitor (CY1)	96.5	95.8	96.9	97.0	125
Transformer (T1) winding 1	101.8	100.4	106.3	103.9	110
Transformer (T1) winding 2	98.4	99.7	109.3	100.5	110
Transformer (T1) core	99.0	97.7	104.8	99.6	110
Optocoupler (U2)	84.9	79.9	84.8	80.7	110
PCB under near Transformer (T1)	88.0	82.7	89.7	84.5	130
Ripple capacitor (C11)	97.5	92.7	94.2	93.9	105
Ripple capacitor (C12)	77.0	72.0	78.1	72.8	105
Line choke (L2) winding	85.6	81.1	86.8	82.1	130
Internal output wire	71.4	68.3	72.5	69.1	80
Output connector	45.2	44.7	45.4	44.7	50
Plastic enclosure near plug pin holder (internal)	93.6	88.7	91.7	87.8	120
Plastic enclosure near T1 (internal)	69.3	65.7	69.4	66.1	120
Plastic enclosure near output connector (internal)	72.2	69.5	73.0	70.4	120
Plastic enclosure near plug pin holder (external)	70.1	67.6	67.3	69.4	75
Plastic enclosure near T1 (external)	61.5	58.7	62.1	59.2	70
Plastic enclosure near output connector (external)	63.8	60.4	65.2	61.5	70
Plastic enclosure near plug pin holder	51.0	54.8	50.4	53.6	70
Support	44.9	44.4	45.2	44.9	90
Ambient	40.0	40.0	40.0	40.0	--

Abnormal condition

temperature (K/°C) of part	Abnormal		
	90V/60Hz	264V50Hz	Limit
--	--	--	--

Overload condition

temperature (K/°C) of part	Abnormal		
	--	264V/50Hz/ Horizontal	Limit
Internal input wire	--	62.9	85
Line choke (L1) winding	--	76.4	175-10=165.0

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Clause	Requirement + Test	Result - Remark	Verdict

Line choke (L1) core	--	71.4	175-10=165.0
Transformer (T1) winding 1	--	121.0	175-10=165.0
Transformer (T1) winding 2	--	140.5	175-10=165.0
Transformer (T1) core	--	123.0	175-10=165.0
Line choke (L2) winding	--	93.4	175-10=165.0
Internal output wire	--	76.7	85
Plastic enclosure near plug pin holder (external)	--	83.0	105
Plastic enclosure near T1 (external)	--	64.8	105
Plastic enclosure near output connector (external)	--	67.9	105
Plastic enclosure near plug pin holder	--	51.4	105
Support	--	46.3	105
Ambient	--	40.0	--

According to normal heating result, The overload heating performed at 264V/50Hz, Horizontal condition will be worse.
Due to test result of clause 14, the heating result can be referred to the normal condition.
Due to test result of clause 15.3, unit shut down, no output, so the heating result can be referred to abnormal condition.

	Type reference ..... :	**RKPO-EU2401000**	—
	Load used ..... :	Equivalent load or LED module	—
	Mounting position of luminaire ..... :	On the black testing board	—
	Ta ..... :	40°C	—
	- test : rated voltage ..... :	100V-240V	—
	- test : test voltage(normal) ..... :	Input : 1.06U_R=106V; I=0.523A; P=28.0W; 1.06U_R=254.4V; I=0.237A; P=27.7W; Output: U=24.15V; I=1.0A;	—
	- test : test voltage(abnormal) ..... :	1. Double the LED modules or equivalent load (connected in parallel) 1.1U_R=264V; I= 0.01A; P=0.12W 2. Over load: 0.9U_R= 90V; I= 0.757A; P=38.4W; Output: U=24.13V; I= 1.29A; 1.1U_R= 264V; I= 0.312A;	—

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Clause	Requirement + Test	Result - Remark	Verdict

		P=39.0W; Output: U=24.13V; I= 1.43A	

Normal operation

temperature (K/°C) of part	106V/60Hz		254.4V50Hz		Limit
	Horizontal	Vertical	Horizontal	Vertical	
Internal input wire	61.7	62.5	55.0	56.6	80
Ripple capacitor (C1)	77.1	76.4	63.7	65.0	105
Line choke (L1) winding	98.3	97.4	69.2	70.4	130
Line choke (L1) core	91.7	89.9	69.8	70.7	130
Ripple capacitor (C2)	88.7	84.5	78.1	77.6	105
Ripple capacitor (C4)	90.5	80.7	83.3	77.9	105
Y capacitor (CY1)	92.6	85.8	90.0	87.1	125
Transformer (T1) winding 1	106.4	98.9	107.6	104.1	110
Transformer (T1) winding 2	109.8	102.1	107.4	107.8	110
Transformer (T1) core	105.4	97.8	107.3	103.7	110
Optocoupler (U2)	83.1	73.0	81.0	74.3	110
PCB under near Transformer (T1)	81.9	72.5	80.8	73.9	130
Ripple capacitor (C11)	76.6	68.0	75.1	68.8	105
Ripple capacitor (C12)	71.8	63.0	70.5	64.0	105
Line choke (L2) winding	88.7	80.2	87.1	81.2	130
Internal output wire	60.6	53.9	59.7	54.7	80
Output connector	46.2	42.9	46.1	43.3	50
Plastic enclosure near plug pin holder (internal)	87.7	76.8	83.3	77.3	120
Plastic enclosure near T1 (internal)	73.4	69.1	69.7	68.8	120
Plastic enclosure near output connector (internal)	73.0	67.8	74.5	71.0	120
Plastic enclosure near plug pin holder (external)	70.0	69.9	67.3	70.9	75
Plastic enclosure near T1 (external)	61.5	52.9	60.3	53.9	70
Plastic enclosure near output connector (external)	61.0	59.6	61.0	57.3	70
Plastic enclosure near plug pin holder	49.6	49.8	47.3	48.4	70
Support	46.0	43.1	45.9	43.1	90
Ambient	40.0	40.0	40.0	40.0	--
Abnormal condition					

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Clause	Requirement + Test	Result - Remark	Verdict

temperature (K/°C) of part	Abnormal		
	90V/60Hz	264V50Hz	Limit
--	--	--	--
Overload condition			
temperature (K/°C) of part	Abnormal		
	--	264V/50Hz/ Horizontal	Limit
Internal input wire	--	57.8	85
Line choke (L1) winding	--	75.6	175-10=165.0
Line choke (L1) core	--	75.4	175-10=165.0
Transformer (T1) winding 1	--	117.0	175-10=165.0
Transformer (T1) winding 2	--	121.5	175-10=165.0
Transformer (T1) core	--	116.4	175-10=165.0
Line choke (L2) winding	--	93.9	175-10=165.0
Internal output wire	--	63.1	85
Plastic enclosure near plug pin holder (external)	--	72.0	105
Plastic enclosure near T1 (external)	--	63.3	105
Plastic enclosure near output connector (external)	--	62.8	105
Plastic enclosure near plug pin holder	--	48.7	105
Support	--	46.7	105
Ambient	--	40.0	--
According to normal heating result, The overload heating performed at 264V/60Hz, label up condition will be worse. Due to test result of clause 14, the heating result can be referred to the normal condition. Due to test result of clause 15.3, unit shut down, no output, so the heating result can be referred to abnormal condition.			

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Clause	Requirement + Test	Result - Remark	Verdict

Annex 5	**Tests according to EN 60598-1:2008+A11 and IEC 60598-1:2008**		
Clause	Requirement – Test	Result – Remark	Verdict
4.10	Insulation of Class II luminaires		P
4.10.1	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		P
	Interference suppression capacitors according to IEC 60384-14		P
4.10.2	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
4.10.3	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
4.13.1	Impact tests:		P
	- fragile parts; energy (Nm) .....:	--	N/A
	- other parts; energy (Nm).....:	0.5 Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
4.13.2	Metal parts have adequate mechanical strength		P
4.13.3	Straight test finger		P
4.14.6	Strain on socket-outlets	0.05Nm	P
5.2.2	Type of cable.....:		N/A
	Nominal cross-sectional area (mm²) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.3	Type of attachment, X, Y or Z		N/A
5.2.7	Cable entries through rigid material have rounded edges		N/A
5.2.10.3	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) .....:		N/A
	- torque test: torque (Nm).....:		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
5.2.18	Used plug in accordance with		P
	- IEC 60083		N/A
	- other standard	Plug in, Tested with appliance	P
5.3	Internal wiring		P
5.3.1	Internal wiring of suitable size and type	UL approved, Min.24AWG	P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures .....:	(see Annex 4)	N/A
	Green-yellow for earth only		N/A
5.3.1.1	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm²) .....:		N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
5.3.1.2	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness		P
5.3.1.3	Double or reinforced insulation for class II		P
5.3.1.4	Conductors without insulation		N/A
5.3.1.5	SELV current-carrying parts		P
5.3.1.6	Insulation thickness other than PVC or rubber		P
5.3.2	Sharp edges etc.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		P
	No twisting over 360°		P
5.3.3	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.3.4	Joints and junctions effectively insulated		N/A
5.3.5	Strain on internal wiring		N/A
5.3.6	Wire carriers		N/A
5.3.7	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A

8	**PROTECTION AGAINST ELECTRIC SHOCK**		**P**
8.2.1	Live parts not accessible with standard test finger		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
8.2.2	Portable luminaire adjusted in most unfavourable position		P

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Clause	Requirement + Test	Result - Remark	Verdict

8.2.3.a	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		P
	- glass protective shields not used as supplementary insulation	No such part	N/A
8.2.3.b	BC lampholder of metal in class I luminaires shall be earthed		N/A
8.2.3.c	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current ..... :		N/A
	- no-load voltage..... :		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage ..... :	< 60 VDC	N/A
8.2.4	Portable luminaire:		P
	- protection independent of supporting surface		P
	- terminal block completely covered		N/A
8.2.5	Compliance with the standard test finger or relevant probe		P
8.2.6	Covers reliably secured		P
8.2.7	Discharging of capacitors ≥ 0,5 μF		N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

9	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
9.2.0	Tests for ingress of dust, solid objects and moisture:		P
	IP44 test	Only for models RKPO-EUxxxyyyy, see attachment 1 for details.	P

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 61347-2-13 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Part 2: Particular requirements Section Thirteen – d.c. or a.c. supplied electronic controlgear for LED modules	
Differences according to.....:	EN 61347-2-13:2014 used in conjunction with EN 61347-1:2008 + A1:2011 + A2:2013
Attachment Form No.....:	EU_GD_IEC61347_2_13E
Attachment Originator .....:	IMQ SpA
Master Attachment.....:	Date 2015-03

	CENELEC COMMON MODIFICATIONS (EN)	
	No Common modifications	

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

Annex 6	**J 61347-2-13(H21) : 2009** **The national differences for Japan** **Japanese Deviations for J 61347-2-13(H21): 2009 (MITI Ordinance Clause 2)**

2	Add the following sentence after the first paragraph. - These normative references shall be applied its latest edition and amendment unless the edition with the amendment is mentioned. Add the following standard. - JIS C8303 - JIS C8358 - IEC62384:2006	Added.	N/A
3	Add the following new sub-clauses. 3.13 Class 0 control gear; It is the control gear to protect against electric shock with only basic insulation. It means that there is no provision to connect protective earth conductor in supply wirings even if there is accessible conductive parts in normal use. The reliance in the event of a failure of the basic insulation is placed upon the environment. Note: Class 0 control gears has either an enclosure of insulating material which may from a part or the whole of the basic insulation, or a metal enclosure which is separated from live parts by basic insulation. 3.14 Independent Class 0 control gear; The control gear is protected by basic insulation only for the protection against electric shock so that it is supplied with SELV output insulated from supply input by safety isolating transformer specified in JIS C61558-1. It means that there is no provision to connect protective earth conductor in supply wirings even if there is accessible conductive parts in normal use. The reliance in the event of a failure of the basic insulation is placed upon the environment.	Added.	P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	Note: Class 0 control gears has either an enclosure of insulating material which may from a part or the whole of the basic insulation, or a metal enclosure which is separated from live parts by basic insulation. 3.15 Class I control gear; Control gear in which protection against electric shock does not rely on basic insulation only but which includes an additional safety precaution, in that conductive accessible parts are connected to the protective earth conductor in the fixed wiring of the installation in such a way that conductive accessible parts cannot become live in the event of a failure of the basic insulation. Note 1: In the control gear with flexible cord or supply cord, this provision includes a protective earth conductor in the flexible cord or supply cord. Note 2: For the class I control gear (former class 0I) which has 2 cores flexible cord or supply cord with the plug being not suitable for the socket outlet with protective earth contact, that protection is equivalent to class 0. However, it shall be completely complied with the other all requirements of class I. Note 3: Class I control gear may have the double or reinforced insulated parts. 3.16 Class II control gear; Control gear in which protection against electric shock does not rely on basic insulation only but in which additional safety precautions are provided, such as double insulation or reinforced insulation, there being no provision for protective earth or reliance upon installation conditions. Note : Such a control gear may be the following types;a control gear having a durable and substantially continuous enclosure of insulating material which envelops all metal parts, with the exception of small parts, such as nameplates, screws and rivets, which are isolated from live parts by insulation at least equivalent to reinforced insulation; such a control gear is called an insulation-incased class II control gear;		

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Clause	Requirement + Test	Result - Remark	Verdict
	a) Except for the parts which are provided reinforced insulation because that double insulation can not be applied, a control gear having a substantially continuous metal enclosure, in which double insulation is used throughout; such a control gear is called a metal-encased class II control gear; b) A control gear which is a combination of the above a) and b) control gear. The enclosure of an insulation-encased class II control gear may form a part or the whole of the supplementary insulation or of the reinforced insulation. If a control gear with double insulation or reinforced insulation throughout has provision for protective earth terminals or protective earth contacts, it is considered to be a class I control gear. However, if the class II control gear is designed to send the wiring, the internal terminal may be provided to support the electrical connection of protective earth conductor for the other control gears. In this case, that terminal shall be isolated by class II insulation form accessible metal parts. Class II control gear may be provided the parts which are complied with safety extra low voltage (SELV) for the protection against electric shock.		
4	Add the following sentence as 3rd dash item. Independent Class0-control gear shall be complied with the requirements of annex JA.	Added.	N/A
7.2	Add the following sentence as 4th dash item. - dimmer manufacturer name or dimmer supplier name with responsibilities, or type of dimmer by distributors, If it can control the brightness with dimmer,	Added.	N/A
8.1	Add the following sentence at the last. For the class0 control gear, the accessible parts shall be separated form live parts by basic insulation. Sub-clauses 8.6 and 13.1 of JISC6065 apply.	Added.	N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	Replaced the 1st sentence as follows. Except that the output of independent class0 control gear shall be complied with the requirements of SELV equivalent output, output circuit of SELV- or SELV equivalent or class0 control gear may have exposed terminals if	Replaced.	N/A
11	Replace the 2nd and 3rd sentences as follows. For SELV-equivalent or class0 control gear, the insulation between input and output terminals not bonded together shall be adequate. With double or reinforced insulation, or basic insulation of independent class0 control gear, the resistance shall be not less than 4 MΩ.	Replaced.	N/A
12	Replace the 2nd sentence as follows. Insulation conditions of windings of separating transformers in SELV-equivalent or class0 control gear shall apply according to 14.3.2 of JISC6065.	Replaced.	N/A
15	Replace the 1st sentence as follows. In SELV-equivalent or class0 control gear, windings of separating transformers shall be tested according to 7.1 and 11.2 of JISC6065. Add the following sentence at the last. However, it is judged by the value which it minus 10℃ form the measurement temperature, if the thermocouple temperature measurement method are used.	Replaced.	N/A
17	Replace the 2nd sentence as follows. Socket-outlets in the output circuit shall not accept plugs complying with IEC 60083, IEC 60906, JISC 8303 and JISC 8358; neither shall it be possible to engage plugs accepted by socket-outlets in the output circuit with socket-outlets complying with IEC 60083, IEC 60906, JISC 8303 and JISC 8358.	Replaced. No such component used.	N/A
Annex I I.6.1.1	Add the following note at the last. NOTE ta: Maximum temperature limit at the operating ambient temperature.	Added.	P
Annex I I.7.5.2	Replace the reference standard to JISC 0920 instead of IEC 60529:1989.	Replaced.	P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
Annex JA	Add this annex. Additional particular requirements of independent class0 control gear for LED module of DC or AC power supply. Preface. This annex specifies about additional particular requirements of independent class0 control gear for LED module of DC or AC power supply in this standard. JA.1 Applicable scope. This annex applies to the independent class0 control gear using as SELV equivalent input for the laminar less than 25A. This annex is consisted the relevant requirements of clause 4.1 of associated transformer in JISC 61558-1. JA.2 Definition. Clause I.2 applies. JA.3 Classification. Clause I.3 applies. JA.4 Marking. Clause I.4 applies. JA.5 Protection against electric shock. Clause I.5 applies except for the following. I.5.2.1 For the class0 control gear, basic insulation may be provided to the insulation between input circuits and body, or input and output circuits. JA.6 Temperature rise. Clause I.6 applies. JA.7 Short circuit or overload protection. Clause I.7 applies. JA.8 Insulation resistance or electrical strength. Clause I.8 applies except for the requirements of reinforced insulation shall be also applied to the basic insulation.	Added.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	JA.9 Construction. Clause I.9 applies. JA.10 Components. Clause I.10 applies. JA.11 Creepage distances and clearances. Clause I.11 applies but the following lines of insulation systems in table I.7 only apply. Creepage distances and clearances between external cable or cord connection terminals except between input and output circuit terminals. a. Creepage distances and clearances between external cable or cord connection terminals except between input and output circuit terminals. b. Basic or supplementary insulations.		
Annex JB	Add this annex. Additional safety requirements. Preface. This annex specified about additional safety requirements in this standard. Annex I of JISC 8147-1 applies to the control gear with lead wires.	Added.	N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

Annex 7	**Variations to IEC 61347-1:2000 for application in Australia and/or New Zealand (AS/NZS 61347.1:2002)**		**Verdict**
5	For Australia, rated supply voltage 230V/400V …:		P
	For Australia, rated test voltage 240V/415V ……:		P
8	TERMINALS, CABLES AND CORDS		-
	Cables and cords: compliance with the relevant requirements of section 5 of AS/NZS 60598.1		N/A
18.2	Parts of insulating material are resistant to flame and ignition		N/A
18.2.1	Glow-wire test (750°C):		N/A
	- part tested.....:		N/A
	- part not tested.....:		N/A
18.2.2	Glow-wire test (650°C):		
	- part tested.....:	Enclosure, plug pin holder, output connector	P
	- part not tested.....:		N/A
18.2.3	Needle flame test (duration of flame or 30 s):		
	- part tested.....:	Enclosure, plug pin holder, output connector	P
	- part not tested.....:		N/A

5	EXTERNAL AND INTERNAL WIRING (Section 5 of AS/NZS 60598.1)		P
5.2	Supply connection and external wiring		P
5.2.1	Means of connection .....:	Direct plug-in type	N/A
	Portable luminaires with non detachable cords fitted with plugs complying with AS/NZS 3112 (ZZ)		N/A
	The plug portion of the luminaire with integral pins complying with Appendix J of AS/NZS 3112 (ZZ)	Shall be evaluated in national approval.	N/A
5.2.2	Type of cable (ZZ) .....:		N/A
	Nominal cross-sectional area (mm²) (ZZ).....:		N/A
5.2.3	Type of attachment, X, Y or Z		N/A
5.2.5	Type Z not connected to screws		N/A
5.2.6	Cable entries:		--
	- suitable for introduction		N/A
	- adequate degree of protection		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.2.7	Cable entries through rigid material have rounded edges		N/A
5.2.8	Insulating bushings:		--
	- suitably fixed		N/A
	- material in bushings		N/A
	- tubes or guards made of insulating material		N/A
5.2.9	Locking of screwed bushings		N/A
5.2.10	Cord anchorage:		N/A
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
5.2.10.1	Cord anchorage for type X attachment:		--
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
5.2.10.2	Adequate cord anchorage for type Y and type Z attachment		N/A
5.2.10.3	Tests:		--
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N).....:		N/A
	- torque test: torque (Nm) .....:		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
5.2.11	External wiring passing into luminaire		N/A
5.2.12	Looping-in terminals		N/A
5.2.13	Wire ends not tinned		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Wire ends tinned: no cold flow		N/A
5.2.14	Mains plug same protection	Shall be evaluated in national approval.	N/A
	Class III luminaire plug		N/A
5.2.15	Void		N/A
5.2.16	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A
	Installation couplers complying with AS/NZS 3131 or AS/NZS 61535.1 (ZZ)		N/A
5.2.17	Non-standardized inter-connecting cables properly assembled		N/A
5.2.18	Used plug in accordance with IEC 60083 or national standards	Shall be evaluated in national approval.	N/A
5.3	Internal wiring		--
5.3.1	Internal wiring of suitable size and type	UL approved, Min.24AWG	P
	Through wiring		--
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures .....:		N/A
	Green-yellow for earth only		N/A
5.3.1.1	Internal wiring connected directly to fixed wiring		--
	Cross-sectional area (mm²).....:	Direct plug-in equipment	N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
5.3.1.2	Internal wiring connected to fixed wiring via internal current-limiting device		P
	Adequate cross-sectional area and insulation thickness	See Annex 1	--
5.3.1.3	Double or reinforced insulation for class II		P
5.3.1.4	Conductors without insulation		N/A
5.3.1.5	SELV current-carrying parts		P
5.3.1.6	Insulation thickness other than PVC or rubber		P
5.3.2	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	No twisting over 360°		P
5.3.3	Openings		N/A
	- bushings not removable		N/A
	- bushings in sharp openings		N/A
	- cables with protective sheath		N/A
5.3.4	Joints and junctions effectively insulated		N/A
5.3.5	Strain on internal wiring		N/A
5.3.6	Wire carriers		N/A
5.3.7	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

Annex 8	**AU National Differences: AS/NZS IEC 61347.2.13:2013**	-
Appendix ZZ	Variations to IEC 61347-2-13, Ed.1.0(2006) for AUSTRALIA/NEW ZEALAND (Normative)	-

4	Add the following dash points:		P
	-Where the controlgear has accessible outputs, the controlgear shall be SELV output and comply with Annex I		P
	-SELV equivalent is not permitted where controlgear has accessible outputs or is classified as independent SELV.		P
8.2	Delete existing text and replace with the following:		P
	Output circuits of SELV controlgear with accessible outputs shall not exceed 25V r.m.s or 60V d.c. ripple-free d.c, under load except as indicated below.	Max. 24.21Vdc	P
	If the voltage exceeds 25V r.m.s or 60V d.c., the output shall comply with the following:		N/A
	a) the touch current shall not exceed:		N/A
	-for a.c.:0.7mA(peak)		N/A
	-for d.c.:2.0mA(peak)		N/A
	b) the no-load output shall not exceed $33\sqrt{2}$ V peak or 60V ripple-free d.c.		P
	For controlgears with more than one supply voltage, the requirements are applicable for each of the rated supply voltages.		P
	Controlgear with an output more than the limits above shall have insulated terminals.		N/A
	Accessible conductive parts separated by double or reinforced insulation, e.g. live parts and the body or primary and secondary circuits, may be bridged by resistors or Y2 capacitors provided they consist of at least two separate components of the same rated value and are rated for total working voltage and whose impedance is unlikely to change significantly during the individual lifetime of the controlgear.		N/A
	In addition, accessible conductive parts separated by double or reinforced insulation from live parts, as above, may be bridged by a single Y1 capacitor.		P
	Y1 or Y2 capacitors shall comply with relevant requirements of IEC 60384-14 and if resistors are used they shall comply with the requirements of test		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	a) in 14.1 of IEC 60065:2001.		
9.1	Add the following subclause: Plug-in controlgear with pins for direct insertion into a socket-outlet shall comply with Appendix J of AS/NZS 3112:2011.	Shall be evaluated in national approval	N/A
16.2	Add the following after point c): d)For controlgear with SELV output, the LED modules, or equivalent load for which the controlgear is designed, shall continue to be connected in series incrementally to the output terminals until the controlgear ceases to operate or the output voltage is stabilized.		P
	Add the following test after the last sentence: During the tests specified under d), the maximum voltage measured on the output terminals shall not exceed the SELV limits of Clause 8.		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

ANNEX 9	Tests according to IEC 60598-1:2008, EN 60598-1:2008+A11:2009, AS/NZS 60598.1:2013

Clause	Requirement + Test	Result - Remark	Verdict
4.10	Insulation of Class II luminaires		P
4.10.1	No contact, mounting surface – accessible metal parts – wiring of basic insulation		P
	Safe installation fixed luminaires		P
	Capacitors and switches		P
	Interference suppression capacitors according to IEC 60384-14		P
4.10.2	Assembly gaps:		N/A
	- not coincidental		N/A
	- no straight access with test probe		N/A
4.10.3	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A

4.11	Electrical connections		P
4.11.1	Contact pressure		P
4.11.2	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
4.11.3	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
4.11.4	Material of current-carrying parts		P
4.11.5	No contact to wood or mounting surface		P
4.11.6	Electro-mechanical contact systems		N/A
4.13	Mechanical strength		P
4.13.1	Impact tests:		P
	- fragile parts; energy (Nm)..... :		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- other parts; energy (Nm) ..... :	0.5 Nm	P
	1) live parts		P
	2) linings		P
	3) protection		P
	4) covers		P
5	**EXTERNAL AND INTERNAL WIRING**		—
5.2	Supply connection and external wiring		—
5.2.1	Means of connection..... :	Direct plug-in type	N/A
5.2.2	Type of cable ..... :		N/A
	Nominal cross-sectional area (mm²)..... :		N/A
	Cables equal to IEC 60227 or IEC 60245		N/A
5.2.3	Type of attachment, X, Y or Z		N/A
5.2.5	Type Z not connected to screws		N/A
5.2.6	Cable entries:		—
	- suitable for introduction		N/A
	- adequate degree of protection		N/A
5.2.7	Cable entries through rigid material have rounded edges		N/A
5.2.8	Insulating bushings:		—
	- suitably fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- tubes or guards made of insulating material		N/A
5.2.9	Locking of screwed bushings		N/A
5.2.10	Cord anchorage:		—
	- covering protected from abrasion		N/A
	- clear how to be effective		N/A
	- no mechanical or thermal stress		N/A
	- no tying of cables into knots etc.		N/A
	- insulating material or lining		N/A
5.2.10.1	Cord anchorage for type X attachment:		—
	a) at least one part fixed		N/A
	b) types of cable		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
5.2.10.2	Adequate cord anchorage for type Y and type Z attachment		N/A
5.2.10.3	Tests:		—
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) ..... :		N/A
	- torque test: torque (Nm) ..... :		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
5.2.11	External wiring passing into luminaire		N/A
5.2.12	Looping-in terminals		N/A
5.2.13	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A
5.2.14	Mains plug same protection	Shall be evaluated in national approval.	N/A
	Class III luminaire plug		N/A
5.2.16	Appliance inlets (IEC 60320)		N/A
	Appliance couplers of class II type		N/A
5.2.17	No standardized interconnecting cables properly assembled		N/A
5.2.18	Used plug in accordance with		—
	- IEC 60083	Shall be evaluated in national approval.	N/A
	- other standard		N/A
5.3	Internal wiring		—
5.3.1	Internal wiring of suitable size and type	UL listed wire used.	P
	Through wiring		—
	- not delivered/ mounting instruction		N/A

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict
	- factory assembled		N/A
	- socket outlet loaded (A) ..... :		N/A
	- temperatures..... :		N/A
	Green-yellow for earth only		N/A
5.3.1.1	Internal wiring connected directly to fixed wiring		—
	Cross-sectional area (mm²) ..... :	Direct plug-in equipment	N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
5.3.1.2	Internal wiring connected to fixed wiring via internal current-limiting device		—
	Adequate cross-sectional area and insulation thickness	See Annex 1	--
5.3.1.3	Double or reinforced insulation for class II		P
5.3.1.4	Conductors without insulation		N/A
5.3.1.5	SELV current-carrying parts		P
5.3.1.6	Insulation thickness other than PVC or rubber		P
5.3.2	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		P
	No twisting over 360°		P
5.3.3	Insulating bushings:		—
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
5.3.4	Joints and junctions effectively insulated		N/A
5.3.5	Strain on internal wiring		N/A
5.3.6	Wire carriers		N/A
5.3.7	Wire ends not tinned		N/A
	Wire ends tinned: no cold flow		N/A

8	**PROTECTION AGAINST ELECTRIC SHOCK**		P
8.2.1	Live parts not accessible		P

IEC 61347-2-13			
Clause	Requirement + Test	Result - Remark	Verdict

	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		P
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		N/A
	Lamp and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		N/A
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
8.2.2	Portable luminaire adjusted in most unfavourable position		P
8.2.3.a	Class II luminaire:		N/A
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		N/A
	- glass protective shields not used as supplementary insulation		N/A
8.2.3.b	BC lampholder of metal in class I luminaires shall be earthed		N/A
8.2.3.c	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current .....:		N/A
	- no-load voltage .....:		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage .....:		N/A
8.2.4	Portable luminaire have protection independent of supporting surface		N/A
8.2.5	Compliance with the standard test finger or relevant probe		P

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Clause	Requirement + Test	Result - Remark	Verdict

8.2.6	Covers reliably secured		P
8.2.7	Discharging of capacitors ≥ 0,5 μF	No such capacitor	N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

9	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		—
-	If IP > IP 20 the order of the test specified in clause 1.12		—
9.2	Tests for ingress of dust, solid objects and moisture:		—
	- classification according to IP .....:	IP20 for RKPO-UKxxxyyyy IP44 for RKPO-EUxxxyyyy.	—
	- mounting position during test.....:	According to the instruction	—
	- fixing screws tightened; torque (Nm).....:		—
	- tests according to clauses .....:	cl. 9.2.0	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		P
	b) no talcum in dust-tight luminaire		P
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		P
	d) i) For luminaires without drain holes – no water entry		P
	d) ii) For luminaires with drain holes – no hazardous water entry		P
	e) no water in watertight luminaire		P
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		P
	f) no contact with live parts (IP3X and IP4X)		P
	g) no trace of water on part of lamp requiring protection from splashing water		P
	h) no damage of protective shield or glass envelope		P

IEC 60529:1989+A1:1999+A2:2013			
Clause	Requirement – Test	Result – Remark	Verdict
5	Degrees of protection against access to hazardous parts and against solid foreign objects indicated by the first characteristic numeral		P
5.1	Protection against access to hazardous parts		P
	First characteristic numeral:	4	P
	Test conditions according to sub-clause 12.2		P
	Compliance checked		P
5.2	Protection against solid foreign objects		P
	First characteristic numeral:	4	P
	Test conditions according to sub-clause 13.2 or 13.4 or 13.5		P
	Compliance checked		P
6	Degrees of protection against ingress of water indicated by the second characteristic numeral		P
	Second characteristic numeral :	4	P
	Test conditions according to sub-clause 14.2.1 to 14.2.9 as applicable	Details see clause 14.2.4	P
	Compliance checked	The water did not enter the inside of the equipment and Hi-pot test after the test is passed. No harmful effects.	P
7	Degrees of protection against access to hazardous parts indicated by the additional letter		N/A
	Additional letter :	No Additional Protection Letter	N/A
	Test conditions according to sub-clause 15.2	No Additional Protection Letter	N/A
	Compliance checked	No Additional Protection Letter	N/A
8	Supplementary letters		N/A
	Additional supplementary letter :	No Additional Protection Letter	N/A
	Test conditions according to sub-clause 15.2	No Additional Protection Letter	N/A
	Compliance checked	No Additional Protection Letter	N/A
9	IP code designations	IP 44	P
10	Marking		P
	Specified in relevant product standards	See page 4 of main report	P
	Such standard also specify the method of marking which is to be used when		N/A
	-one part of an enclosure has a different degree of protection to that of another part of the same enclosure		N/A

IEC 60529:1989+A1:1999+A2:2013			
Clause	Requirement – Test	Result – Remark	Verdict
	-the mounting position has an influence on the degree of protection		N/A
	-the maximum immersion depth and time are indicated		N/A
11	General requirements for tests		P
11.1	Atmospheric conditions for water or dust tests		P
	-temperature -relative humidity	23°C 52%	P
	-air pressure	860mbar to 1060mbar	P
11.2	Test samples		
	-number of samples tested	1 sample	P
	-conditions for mounting, assembling and positioning of the samples	The sample was assembled as normal use.	P
	-pre-conditioning, if any	None	N/A
	-tested energized or not	Not energized	P
	-tested in motion or not	None	N/A
	The manufacturer's instructions shall apply in the absence of such specifications	Enclosure will meet the requirements of IP44	P
11.3	Application of test requirements and interpretation of test results		N/A
	-responsibility of the relevant technical committee		N/A
	-in the absence of such specification the requirement of this standard shall apply		P
11.4	Combination of test conditions for the first characteristic numeral		P
	First characteristic numeral	4	P
11.5	Empty enclosures		N/A
	Detailed requirements shall be indicated by the enclosure manufacturer in his instructions for the arrangement and spacing of hazardous parts or parts which might be affected by the penetration of foreign objects or water		N/A
	The manufacturer of the final assembly shall ensure that after the electrical equipment is enclosed the enclosure meets the declared degree of protection of the final product		N/A
12	Tests for protection against access to hazardous parts indicated by the first characteristic numeral		P
12.1	Access probes according to Table VI are used		P
12.2	Test conditions as specified		P
12.3	Acceptance conditions	See below clause 12.3.1	P
	Adequate clearance is kept between access probe and hazardous parts		P

IEC 60529:1989+A1:1999+A2:2013			
Clause	Requirement – Test	Result – Remark	Verdict
12.3.1	For low-voltage equipment	The probe can not touch hazardous live parts	P
	The access probe shall not touch hazardous live parts		P
12.3.2	For high-voltage equipment	No such equipment	N/A
	The equipment shall be capable of withstanding the dielectric tests as specified in the relevant product standard applicable to the equipment	None	N/A
	Where an enclosure includes sections at different voltage levels the appropriate acceptance conditions for adequate clearance shall be applied for section	None	N/A
12.3.3	For equipment with hazardous mechanical parts	None	N/A
	The access probe shall not touch hazardous mechanical parts	None	N/A
13	Tests for protection against solid foreign objects indicated by the first characteristic numeral		P
13.1	Test means and the main test conditions according to table VII are used	Dust chamber	P
13.2	Test conditions for first characteristic numerals 1,2,3,4	First numerals: 4	P
	Object probe is pushed against any openings of the enclosure with the force specified in table VII		P
13.3	Acceptance conditions for first characteristic numerals 1,2,3,4		P
	The protection is satisfactory if the full diameter of the probe does not pass through any opening		P
13.4	Dust test for first characteristic numerals 5& 6	First numerals: 4	N/A
	Tests are conducted as specified and classified according to its category 1 or 2		N/A
	If it is impractical to test the complete enclosure in the test chamber, one of the following procedures shall be applied:		N/A
	-testing of individually enclosed sections of the enclosure		N/A
	-testing of representative parts of the enclosure , comprising components such as doors, ventilation openings, joints, shaft seals, etc., in position during test		N/A
	-testing of a smaller enclosure having the same full-scale design details		N/A
13.5	Special conditions for first characteristic numeral 5		N/A
13.5.1	Test conditions as specified		N/A

IEC 60529:1989+A1:1999+A2:2013			
Clause	Requirement – Test	Result – Remark	Verdict
13.5.2	Acceptance conditions		N/A
	The protection is satisfactory if talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety		N/A
	No dust shall deposit where it could lead to tracking along the creepage distances		N/A
13.6	Special conditions for first characteristic numeral 6		N/A
13.6.1	Test conditions as specified		N/A
13.6.2	Acceptance conditions		N/A
	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test		N/A
14	Tests for protection against water indicated by the second characteristic numeral		P
14.1, 14.2	Test means and test conditions are performed according to table VIII	IP44	P
14.2.1	Test for second characteristic numeral 1 with drip box	None	N/A
14.2.2	Test for second characteristic numeral 1 with drip box	None	N/A
14.2.3	Test for second characteristic numeral 3 with oscillating tube or spray nozzle	None	N/A
14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle		P
14.2.5	Test for second characteristic numeral 5 with the 6.3mm nozzle	None	N/A
14.2.6	Test for second characteristic numeral 6 with the 12.5mm nozzle	None	N/A
14.2.7	Test for second characteristic numeral 7: Temporary immersion between 0.15m and 1m	None	N/A
14.2.8	Test for second characteristic numeral 8: Continuous immersion subject to agreement	None	N/A
14.2.9	Test for second characteristic numeral 9: High pressure and temperature water jetting	None	N/A
14.3	Acceptance conditions		P
	It is the responsibility of the relevant technical committee to specify the amount of water which may be allowed to enter the enclosure and the details of a dielectric strength test, if any	The water did not enter the inside of the equipment and Hi-pot test after the test is passed. No harmful effects.	P
	In general, if any water has entered, it shall not		P
	-be sufficient to interfere with the correct operation of the equipment or impair safety		P

IEC 60529:1989+A1:1999+A2:2013			
Clause	Requirement – Test	Result – Remark	Verdict
	-deposit on insulation parts where it could lead to tracking along the creepage distances		P
	-reach live parts or wingdings not designed to operate when wet		P
	-accumulate near the cable end or enter the cable if any		P
	For enclosure with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment	No drain-holes used.	N/A
	For enclosures without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts	No water entered at all.	P
15	Test for protection against access to hazardous parts indicated by the additional letter		N/A
15.1	Access probes to hazardous parts according to table VI	No additional letter	N/A
15.2	Test conditions as specified	No additional letter	N/A
15.3	Acceptance conditions	No additional letter	N/A
	The protection is satisfactory if adequate clearance is kept between the access probe and hazardous parts	No additional letter	N/A

Partially of BS 1363-1: part 1: 1995 + A4: 2012			
Clause	Requirement – Test	Result – Remark	Verdict
12	Construction of Plugs **For UK plug models: RKPO-UKXXYYYY**		P
12.1	The disposition of the pins shall be shown as figure 4.	The dispositions of the pins were shown as specified.	P
12.2	Pin and sleeve dimensions, body outline were checked according to figure 4 of BS1363: part 1.	The outline of the plug did not exceed the specified dimensions at a distance of 6.5mm from the engagement surface. (limit: >6.35mm) The measured dimensions of item shown in fig. 4 were found within the specified limits.	P
	The plug portion should enter the gauge fully with a force less than 10N was applied to the centre of the sample at right angle.	Sample was entered into the gauge completely.	P
12.3	No part of a line or neutral pin shall be less than 9,5mm from the periphery of the plug measured along the engagement surface.	10.15mm	P
12.9	Plug pins were constructed of brass	Complied.	P
12.9.1	Exposed surface of plug pins were smooth and free from burrs or sharp edges and other irregularities, which could cause damage or excessive wear to sockets or shutters.	Complied.	P
12.9.4	The adaptor plug pins were tested as specified in the standard.	Complied. After being subjected to a force of 1100N for L, N pin, 400N for ISOD pin, the pin portion could fit the relevant gauge.	P
12.9.6	Each pin of the adaptor was subjected to a torque of 1Nm for 60s as specified in the standard.	Complied. After the test, the pin portion could fit the relevant gauge.	P
12.11	The adaptors were tested as specified in the standard. After being placed in an oven at 70°C for 1 hour, each pin of the samples was subjected for 60 sec. to a pull of 100N in the oven.	Complied. After the above test, no plug pin was detached and the plug pins could fit the relevant gauge.	P
12.12	The degree of flexibility of mounting of the plug pins was checked according to 12.12.1	Measured value: Max. 1° 21' (test on each sources of enclosure, max. value measured) (limit: Max. 3° 30').	P
12.16	Line and neutral plug pin shall be fitted with insulating sleeves. The dimensions of the pin and sleeve shall fall within the specific limit.	Complied. Both line and neutral pins were fitted with insulating sleeves.	P
12.17.1	Plug pin sleeve shall be compliance with 12.17.2 to 12.17.4	Complied.	P
12.17.2	Electric strength test applied between the metal part of plug pin and the sleeve (1250±30V)	Complied. No breakdown or flashover occurs.	P

Partially of BS 1363-1: part 1: 1995 + A4: 2012			
Clause	Requirement – Test	Result – Remark	Verdict
12.17.3	Abrasion test for plug pin sleeve The plug pin sleeves were subjected to 20000 movements of abrasion as specified in the standard.	Complied. After the test, the sleeves showed no damage that impaired further use and could satisfy the electric strength test in 12.17. 2	P
12.17.4	The plug pins with sleeves were placed in a heating cabinet at 200°C and tested according to the standard for 120min. Arrange the test as Figure 10 of BS 1363-1.	After the test, the thickness of sleeves of plug pins (Line and neutral pins) remaining at the impression point reduced by max. 13.5% less than 50%.	P

Additional requirement for the solid insulated shutter opening device (ISOD) according to Clause 12 of BS 1363: part 1: 1995 + A4: 2012			
12.2	Plug fitted with an ISOD shall comply with all the dimensions specified in Fig. 4a with exception of the width of the ISOD, which should be 4,05mm max. and 3,90mm min. and its height which should be 8,05mm max. and 7,75mm min.	See measured dimensions in Table 3	P
12.9.4.3	Solid insulated opening device were tested as specified in the standard.	After being subjected to a forced of 400N, the pin could fit the relevant gauge.	P
12.9.5.2	Plugs with ISOD shall not cause excessive wear to socket contacts or shutters of sockets-outlets The test use a separate sample of plug with ISOD for each type of socket-outlet, with each sample being inserted into and withdrawn from the socket-outlet at a rate of 6 insertions and 6 withdrawals per minute, the speed of travel of the plug being approximately 150mm/s	After 5000 insertions and withdrawals completed, socket outlets show no damage that would impair further use. Plugs show no damage and suit for the dimensional requirements according to clause 12.2. The shutters of the socket-outlets operate satisfactorily and socket contacts safety shielded.	P
22.2	**Resistance to heat**		P
	Ball pressure test according to BS EN 60695-10-2:2003 on parts of insulation material necessary for the function or supporting parts of the plug.	Test performed on plug portion (including ISOD) for 125°C ball pressure test at the material of plug portion which maintains live part in position. Measured after 1 hour. max. 0.63mm measured after 1 hour. Limit: 2mm	P
23	**Resistance of insulating material to abnormal heat and fire**		P
	Insulating material not unduly affected by abnormal heat and by fire	Glow wire test performed on enclosure with: 650°C. All enclosure material have been considered.	P

Partially of BS 1363-1: part 1: 1995 + A4: 2012			
Clause	Requirement – Test	Result – Remark	Verdict
	Insulating material not unduly affected by abnormal heat and by fire	Glow wire test performed on plug portion (including ISOD) with: 750°C. All enclosure material have been considered.	P

Plug portion dimensions

Linear Dimensions (mm)		Measurement		Limit	
*A		24.85		25.370 max.	
*B		33.11		34.6 max.	
*C		Fit the testing gauge		15 min.	
D		10.15		9.5 min.	
*E	L -> E	11.13		11.05 - 11.18	
	N -> E	11.14			
*F	L -> E	22.34		22.10 - 22.36	
	N -> E	22.35			
G1		6.32		6.22 - 6.48	
G2		6.31		6.22 - 6.48	
H		4.03		3.90 - 4.05	
*I		22.61		22.23 - 23.23	
J		1.40		1.35 - 1.85	
K		7.97		7.80 - 8.05	7.75 - 8.05 For ISOD
L	line	9.02		9.5 max.	
	neutral	9.01			
M	line	8.90		9.2 max.	
	neutral	8.91			
N (sleeve)	line	4.01		3.90 - 4.05	
	neutral	4.02			
O	line	17.92		17.20 - 18.20	
	neutral	17.93			
P	Line	1.78		1.35 - 1.85	
	neutral	1.76			
	earth	1.41			
Q (metal)	line	3.99		3.90 - 4.05	
	neutral	3.99			
	earth	4.02			
R	Line	1.39		1.2 - 2.0	
	neutral	1.41			
	earth	1.85			
S	line	1.52		1.35 - 1.85	
	neutral	1.73			

BS 1363-1 a (Plug portion acceptance test)

Partially of BS 1363-1: part 1: 1995 + A4: 2012			
Clause	Requirement – Test	Result – Remark	Verdict

*Remark: all these dimensions were checked by the relevant gauge (based on BS1363: Part 1:1995 Figure 5)

Angular Dimensions (°)		Measurement		Limits	
θ1		61.0°		58° - 62°	
θ2	line	65.0°		60° - 80°	
	neutral	64.0°			
	earth	66.0°			
θ3	line	59°		58° - 62°	
	neutral	60°			

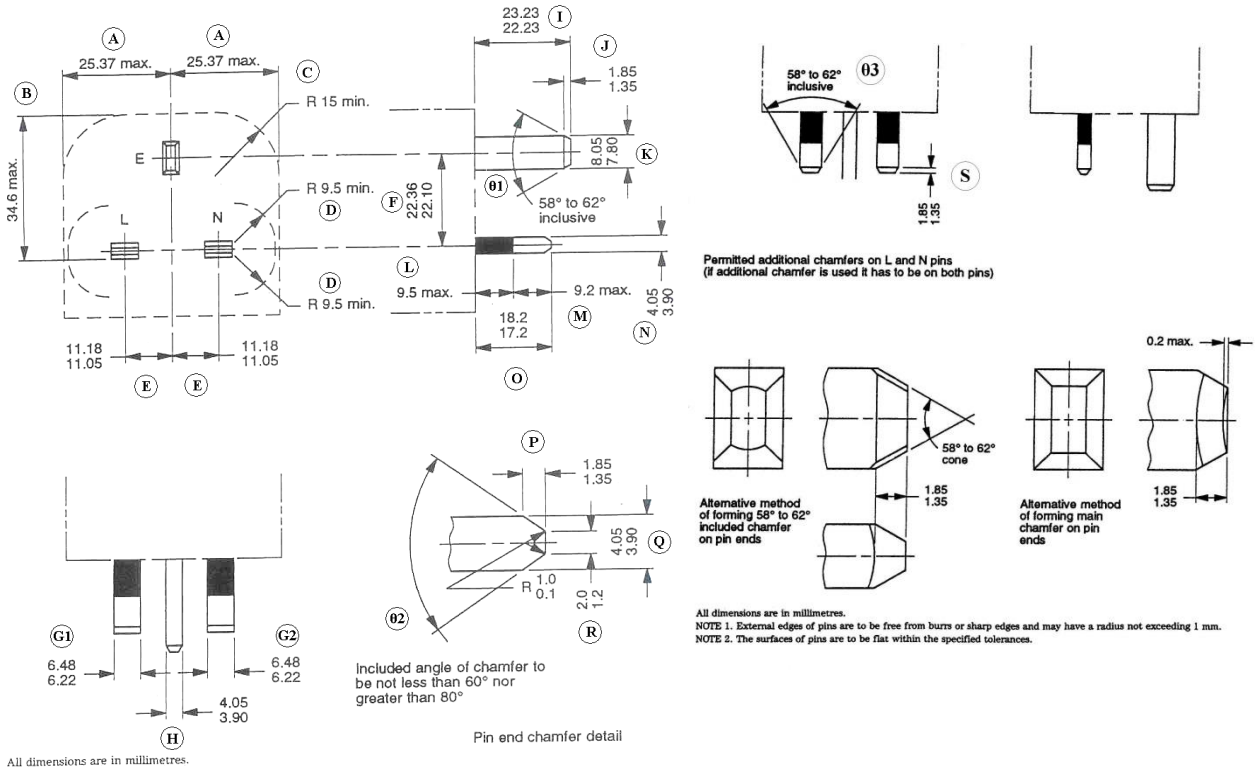

Figure 4a of BS 1363: Part 1

* Remark: all these dimensions were checked by the relevant gauge (based on BS1363: Part 1:1995 Figure 5)

Partially of BS 1363-1: part 1: 1995 + A4: 2012			
Clause	Requirement – Test	Result – Remark	Verdict

Plug Portion Dimensions (Solid insulated shutter opening device ISOD)

Linear Dimensions (mm)		SAMPLE A	Limit
T		8.00	7.75 - 8.05
U		4.01	3.90 - 4.05
V	E -> L	0.03	0.15 max
	E -> N	0.02	0.15 max
W	E -> top	0.03	0.15 max
	E -> L & N	0.03	0.15 max

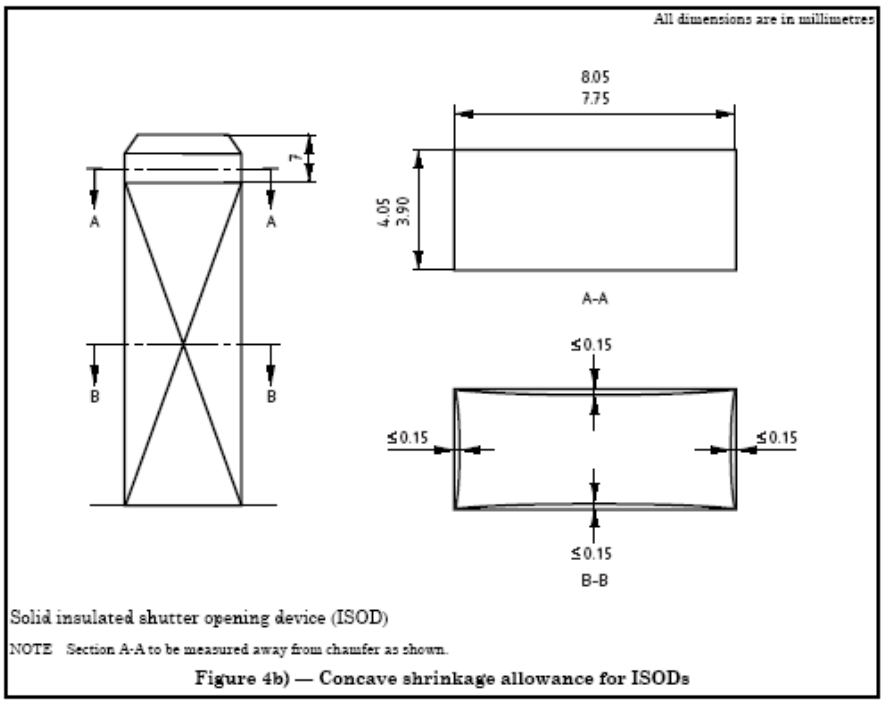

Figure 4b of BS 1363: Part 1

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TEST REPORT

DIN VDE 0620-1

Plugs and socket-outlets for household and similar purposes

Part 1: General requirements

Report reference No .....:	17057899 001
Tested by (printed name and signature) .....:	See cover page
Approved by (printed name and signature) .....:	See cover page
Date of issue .....:	See cover page
Testing Laboratory Name .....:	See cover page
Address .....:	See cover page
Testing location .....:	See cover page
Applicant's Name .....:	See cover page
Address .....:	See cover page
.....:	
Test specification	
Standard .....:	DIN VDE 0620-1:2010-02
Test procedure .....:	Bauartzeichen
Procedure deviation .....:	N/A
Non-standard test method .....:	N/A
Test Report Form	This test-form is modified from DIN VDE 0620-1:2002 to DIN VDE 0620-1:2010
Test Report Form No.....:	-
TRF originator .....:	-
Master TRF .....:	-
Test item description .....:	-
Type of accessory .....:	DE plug of Adapter
Trademark .....:	---
Model and/or type reference .....:	---

Test item particulars	
Standard Sheet.....:	DIN 49406 Teil 2 for Plug
Rated current (A).....:	0.6
Rated voltage (V).....:	250 a.c.
Degree of protection against harmful ingress of water.....:	~~ordinary /~~ splash-proof (IPX4) ~~/ jet-proof (IPX5)~~ (Plug portion)
Provision for earthing.....:	without earthing contact / ~~with earting contact~~
Method of connecting the cable .....:	~~rewirable /~~ non-rewirable
Type of cable.....:	N/A
Nominal cross-sectional areas (mm^2) .....:	N/A
Type of terminals.....:	N/A
Type of connections .....:	~~soldered / welded /~~ ~~crimped / other~~
Socket-outlets:	
Degree of protection against electric shock ...:	~~normal protection / increased protection~~
Existence of enclosures .....:	~~unenclosed / enclosed~~
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 .....:	~~Incorporated~~
Plugs:	
Class of equipment.....:	Class II
Test case verdicts	
Test case does not apply to the test object ...:	N/A
Test item does meet the requirement .....:	P(ass)
Test item does not meet the requirement .....:	F(ail)
Testing	
Date of receipt of test item .....:	See cover page
Date(s) of performance of test .....:	See cover page
General remarks	
This report shall not be reproduced except in full without the written approval of the testing laboratory.	
The test results presented in this report relate only to the item(s) tested.	
”(see remark #)" refers to a remark appended to the report.	
"(see Annex #)" refers to an annex appended to the report.	
Throughout this report a comma is used as the decimal separator.	

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
8	MARKING		N/A
	Requirements by law regarding marking of products have to be considered (GPSG)		N/A
8.1	Accessories marked with:		—
	- rated current (A) .....:	0.6	N/A
	- rated voltage (V) .....:	250	N/A
	- symbol for nature of supply .....:	AC	N/A
	- manufacturer's or responsible vendor's name.....:		N/A
	According to cl. 5 of GPSG		N/A
	- type reference .....:		N/A
	- symbol for degree of protection (first digit) .....:		N/A
	- symbol for degree of protection (second digit) .....:		N/A
	- rated value and type of every replaceable fuse (if any)		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		N/A
	Marking for the nature of supply placed next to the marking for rated current and rated voltage		N/A
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
	- 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
	Symbol for the degree of protection (second digit): marked on the outside of its associated enclosure so as to be easily discernible		N/A
8.4	Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible		N/A
	Plugs and portable socket-outlets for equipment of class II not marked with the symbol for class II construction		N/A
	Portable socket-outlets IPx4 marked with "Only IPX4"		N/A
8.5	Neutral terminals: N .....:		N/A
	Earthing terminals: [earth symbol] .....:		N/A

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	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
	- their marking with graphical symbols according to IEC 147 or colours and/or alphanumeric system, or		N/A
	- their physical dimension or relative location		N/A
8.6	Fixed socket-outlets other than ordinary: marked with the IP symbol visible when the accessory is installed		N/A
	Surface type socket-outlets with protection code IPX4 must be clearly marked to open the drain hole at the lowest position		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 is ensured		N/A
	Additional indication for socket-outlets intended only for mounting on certain types of surface		N/A
8.8	Marking durable and easily legible. Test: 15 s with water and 15 s with petroleum spirit		N/A
	Not smaller then 3 mm and legible without magnification		N/A
8.9	Warnings:		N/A
	a) Portable multiple socket-outlets		N/A
	Do not plug in series		N/A
	Do not use covered		N/A
	b) Portable multiple socket-outlets with switch		N/A
	Only unplugged dead		N/A
	c) Adaptors		N/A
	Do not plug in series		N/A
	d) Cord extension sets and multiple socket-outlets with power cord provided with information for which environment to be usable		N/A
8.10	For accessories to install the note acc. Annex E shall be marked on the smallest package unit		N/A
9	CHECKING OF DIMENSIONS	*TRLP*	P
9.1	Accessories and surface-type mounting boxes comply with the appropriate standard sheets	DIN 49406 Teli 2: 1981 Form R for plug part	P

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets		P
	Compliance checked by measurement and by means of gauges with manufacturing tolerances as shown in table 2		P
9.2	It shall not be 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 (plug for class 0 equipment).		P
	Engagement of a plug for class 0 or class I equipment with a socket-outlet designed to accept plugs for class II equipment, not possible		P
	Impossibility of insertion checked by applying a gauge, for 1 min, with a force of:		P
	- 150 N (rated current ≤ 16A);		P
	- 250 N (rated current > 16A)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P
9.3	Dimensions of plugs or socket-outlets as integral accessories (e.g. Timer, Plugs for Lawnmower, Adaptors, …) must comply the dimension sheets and the requirements of this standard.		N/A
	Additionally parts affecting the dimensions are not allowed		N/A
10	PROTECTION AGAINST ELECTRIC SHOCK VDE		P
10.1	Socket-outlets: live parts not accessible		N/A
	Live parts of plugs: not accessible when the plug is in partial or complete engagement with a socket-outlet	Test on adaptor	P
	Test with standard test finger shown in figure 2		P
	Accessories with elastomeric or thermoplastic material: additional test carried out at 35 °C ± 2 °C with a straight unjointed test finger (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 22: specimens not show deformation		P

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
10.2	Accessible parts (with exception of small screws and the like for fixing bases and covers or cover plates): made of insulating material		P
	Cover or cover plates of fixed socket-outlets: made of metal if the requirements of 10.2.1 or 10.2.2 are fulfilled		N/A
10.2.1	Metal covers or cover plates protected by supplementary insulation made by insulating linings or insulating barriers	No metal cover	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	Metal covers or cover plates automatically connected, through a low-resistance connection, to the earth during fixing		N/A
10.3	Connection 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 9.1		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °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		N/A
	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 .....:		N/A
10.4	External parts of plugs and portable socket-outlets made of insulating material		P
	Overall dimensions of rings around pins not exceed 8 mm concentric with respect to the pin	No such rings	N/A
10.5	Shuttered socket-outlets: live parts not accessible, without a plug in engagement, with the gauge shown in figure 4		N/A
	Live contacts automatically screened when the plug is withdrawn		N/A

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		N/A
	Gauge applied to the entry holes corresponding to live contacts with a force up to 1 N shall not touch live parts		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		N/A
	Shutter do not constrain plugging. The force to open shutter do not exceed 30 N (tested by means of gauges 19a and 19b)		N/A
10.6	Earthing contacts of a socket-outlet designed that they cannot be deformed by the insertion of a plug		N/A
10.6.1	Gauge 14 inserted into the socket-outlet with a force of 150 N for 1 min.		—
	After this test: socket-outlet still comply with the requirements of clause 9		N/A
10.6.2	Sidely earthing contacts: Test acc. figure 43 at torque of 100 Ncm for 1 minute		N/A
	After this test it must be possible to insert gauge 4		N/A
10.7	Socket-outlet with increased protection: live parts not accessible		N/A
	Gauge of figure 4 applied with a force of 1 N on all accessible surfaces shall not touch live parts		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		N/A

11	PROVISION FOR EARTHING	VDE	N/A
11.1	Earth connection made before the current-carrying contacts of the plug become live		N/A
	Current-carrying pins shall separate before the earth connection is broken		N/A
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
	Any additional external earthing terminals of fixed socket-outlets of size suitable for conductors of at least 6 mm^2 .....:		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

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	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, other than ordinary, with enclosure of insulating material and more than one cable inlet, provided with an internal earthing terminal for the continuity of the earthing circuit, unless	No cable inlet	N/A
	earthing terminals allows the connection of an incoming and an outgoing earthing conductor together		N/A
11.5	Connection between earthing terminal and accessible metal parts: of low resistance		N/A
	Test:		N/A
	Test current equal to 1,5 times the rated current or 25 A (A) .....:		—
	Resistance not exceed 0,05 Ω (Ω) .....:		N/A
12	TERMINALS TRLP		N/A
	All the test on terminals, with the exception of the test of 12.3 11, made after the test of clause 16		N/A
12.1	General		—
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 squeezed area of screw-type terminals		N/A
	Clamping means of terminals: not serve to fix any other components		N/A
12.1.2	Non-rewirable accessories provided with soldered, welded, crimped or equally effective permanent connections .....:	Depend on end appliance	N/A
	Screwed or snap-on connections not used	Not used	N/A
	Connections made by crimping a pre-soldered flexible conductor not permitted	No such conductor	N/A
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

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	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	Screw-type terminals clamp the conductor(s) without undue damage		N/A
	Test with apparatus shown in figure 32:		—
	- type of conductors .....:	rigid solid / rigid stranded / flexible	—
	- number of conductors .....:		—
	- smallest cross-sectional area (mm^2) (table 3); diameter of bushing hole (mm); height H (mm); mass (kg) .....:		N/A
	- largest cross-sectional area (mm^2) (table 3); diameter of bushing hole (mm); height H (mm); mass (kg) .....:		N/A
	- 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
12.2.6	Terminals clamp the conductor reliably between metal surfaces		N/A
	Pull test (1 min):		—
	- type of conductors .....:		—
	- number of conductors .....:		—
	- smallest cross-sectional area (mm^2) (table 3); pull (N) .....:		N/A
	- largest cross-sectional area (mm^2) (table 3); pull (N) .....:		N/A
	- torque (Nm) (2/3 table 6) .....:		—
	During the test: conductor not move noticeably		N/A

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
12.2.7	Terminals designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened		N/A
	- largest cross-sectional area (mm²) (table 3) .....:		—
	- number of wires and nominal diameter of wires (table 5):		—
	fixed socket-outlets: rigid solid conductors / rigid stranded conductors .....:		—
	plugs and portable socket-outlets: flexible conductors .....:		—
	- terminals intended for looping-in 2 or 3 conductors: permissible number of conductors .....:		—
	- 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 accessories		N/A
	Torque test:		—
	- rigid solid copper conductor of the largest cross-sectional area (mm²) (table 3) .....:		—
	- torque (Nm) (table 6 or appropriate figures 34, 35, 36) .....:		—
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no damage		N/A
12.2.9	Clamping screws or nuts of earthing terminals: adequately locked against accidental loosening, not possible to loosen them without the aid of a tool		N/A
12.2.10	Earthing terminals: no risk of corrosion		N/A
	Body of brass or other metal no less resistant to corrosion		N/A
	If the body is a part of a frame or enclosure of aluminium alloy, precautions 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 34: required (mm); measured (mm) .....:		N/A
	Mantle terminals: distance *g* no less than the value specified in figure 37: required (mm); measured (mm) .....:		N/A
12.3	Screwless terminals for external copper conductors		—
12.3.1	Screwless terminals of the type suitable for:		—
	- for rigid copper conductors only, or		N/A

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	- 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
12.3.6	It shall be 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 shall not be possible to confuse the opening for the use of a tool with the opening intended for the conductor		N/A
12.3.7	Screwless terminals intended for the interconnection of two or more conductors:		—
	- during insertion, operation of clamping means of one of the conductors is independent of operation of that for the other conductor(s);		N/A
	- during disconnection, conductors can be disconnected either at the same time or separately;		N/A
	- each conductor introduced in a separate clamping unit.		N/A
	It shall be possible clamp securely any number of conductors up to the maximum as designed. Number of conductors; Nominal cross-sectional area (mm^2) .....:		N/A
12.3.8	Screwless terminals 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

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	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		N/A
	Test:		—
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm^2		N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal		N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm^2		N/A
	Connection / disconnection 1 time: rigid stranded conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after connection. During application of the pull conductor not come out of the terminal		N/A
	Additional test on terminals intended for both rigid and flexible conductors:		—
	Connection / disconnection 5 times: flexible conductor 2,5 mm^2		N/A
	Connection / disconnection 5 times: flexible conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 32:		—
	- type of conductors .....:		—
	- number of conductors .....:		—
	- 1,5 mm^2; diameter of bushing hole 6,5 mm; height H 260 mm; mass 0,4 kg		N/A
	- 2,5 mm^2; diameter of bushing hole 9,5 mm; height H 280 mm; mass 0,7 kg		N/A
	During the test: conductors not move noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
12.3.11	Screwless terminals withstand electrical and thermal stresses occurring in normal use		N/A
	Test a) carried out for 1 h connecting rigid solid conductors:		—
	- test current (A) (table 10) .....:		—

DIN VDE 0620-1:2010-02								
Cl.	Requirement – Test	Result						Verdict
	- nominal cross-sectional area (mm^2) .....:							—
	- screwless terminal number .....:	1	2	3	4	5		—
	- voltage drop measured (mV) (requirement: ≤ 15 mV) .....:							N/A
	Test b) (temperature cycles test) carried out on terminals subjected to Test a):							—
	- test current (A) (table 10) .....:							—
	- cross-sectional area (mm^2) .....:							—
	- screwless terminal number.....:	1	2	3	4	5		—
	- voltage drop measured after the 24 cycle (requirement: ≤ 22,5 mV) .....:							N/A
	- voltage drop measured (mV) after 48th cycle .....:							N/A
	- voltage drop measured (mV) after 72th cycle .....:							N/A
	- voltage drop measured (mV) after 96th cycle .....:							N/A
	- voltage drop measured (mV) after 120th cycle .....:							N/A
	- voltage drop measured (mV) after 144th cycle .....:							N/A
	- voltage drop measured (mV) after 168th cycle .....:							N/A
	- voltage drop measured (mV) after 192th cycle .....:							N/A
	- requirement: ≤ 22,5 mV or 2 times 24th cycle value (mV) .....:							N/A
	After this test: inspection show no changes							N/A
	Mechanical strength test according 12.3.10:							—
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm^2							N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm^2							N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal							N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm^2							N/A
	Connection / disconnection 1 time: rigid stranded conductor 1,5 mm^2							N/A
	Conductor subjected to a pull of 30 N for 1 min after connection. During application of the pull conductor not come out of the terminal							N/A
	Additional test on terminals intended for both rigid and flexible conductors:							—
	Connection / disconnection 5 times: flexible conductor 2,5 mm^2							N/A
	Connection / disconnection 5 times: flexible conductor 1,5 mm^2							N/A

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Cl.	Requirement – Test	Result			Verdict
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal				N/A
	Additional test with apparatus shown in figure 32:				—
	- type of conductors .....:	*rigid solid / rigid stranded / flexible*			—
	- number of conductors .....:				—
	- 1,5 mm²; diameter of bushing hole 6,5 mm; height H 260 mm; mass 0,4 kg				N/A
	- 2,5 mm²; diameter of bushing hole 9,5 mm; height H 280 mm; mass 0,7 kg				N/A
	During the test: conductors not move noticeably in the clamping unit				N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration				N/A
12.3.12	Screwless terminals: connected rigid solid conductor remains clamped, even when deflected during normal installation				N/A
	Deflection test (principle of test apparatus shown in figure 33 a)):				—
	- test current (A) (equal rated current) .....:				—
	Smallest cross-sectional area (mm^2) (table 11) .....:				—
	Force (N) (table 12) .....:				—
	- screwless terminal number.....:	1	2	3	—
	- starting point (X = deflection original point).....:	X	X+10°	X+20°	—
	- voltage drop measured (mV) (1st deflection) .....:				N/A
	- voltage drop measured (mV) (2nd deflection) .....:				N/A
	- voltage drop measured (mV) (3rd deflection) .....:				N/A
	- voltage drop measured (mV) (4th deflection) .....:				N/A
	- voltage drop measured (mV) (5th deflection) .....:				N/A
	- voltage drop measured (mV) (6th deflection) .....:				N/A
	- voltage drop measured (mV) (7th deflection) .....:				N/A
	- voltage drop measured (mV) (8th deflection) .....:				N/A
	- voltage drop measured (mV) (9th deflection) .....:				N/A
	- voltage drop measured (mV) (10th deflection) .....:				N/A
	- voltage drop measured (mV) (11th deflection) .....:				N/A
	- voltage drop measured (mV) (12th deflection) .....:				N/A
	- requirement: ≤ 25 mV				N/A
	Largest cross-sectional area (mm^2) (table 11) .....:				—
	Force (N) (table 12) .....:				—
	- screwless terminal number.....:	1	2	3	—

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Cl.	Requirement – Test	Result			Verdict
	- starting point (X = deflection original point).....:	X	X+10°	X+20°	—
	- voltage drop measured (mV) (1st deflection) .....:				N/A
	- voltage drop measured (mV) (2nd deflection) .....:				N/A
	- voltage drop measured (mV) (3rd deflection) .....:				N/A
	- voltage drop measured (mV) (4th deflection) .....:				N/A
	- voltage drop measured (mV) (5th deflection) .....:				N/A
	- voltage drop measured (mV) (6th deflection) .....:				N/A
	- voltage drop measured (mV) (7th deflection) .....:				N/A
	- voltage drop measured (mV) (8th deflection) .....:				N/A
	- voltage drop measured (mV) (9th deflection) .....:				N/A
	- voltage drop measured (mV) (10th deflection) .....:				N/A
	- voltage drop measured (mV) (11th deflection) .....:				N/A
	- voltage drop measured (mV) (12th deflection) .....:				N/A
	- requirement: ≤ 25 mV				N/A
12.4	Crimped connections			*TRLP*	N/A
	Crimped connections of non-rewirable plugs and portable socket-outlets shall have reliable electrical and mechanical properties.				N/A
	Photo documentation of 3 connections showing 3 sides				N/A
	Values of height, force or voltage drop (lower and upper limit) are evaluated and documented by manufacturer for PVT				N/A

13	CONSTRUCTION OF FIXED SOCKET-OTLETS	VDE	N/A
13.1	Socket-contact assembly: sufficient resiliency		N/A
13.2	Socket-contact and pins of socket-outlets: resistant to corrosion		N/A
13.3	Insulating linings, barriers and the like: adequate mechanical strength		N/A
13.4	Socket-outlets constructed as to permit		—
	- easy fixing of the base to a 15ail or in a mounting box		N/A
	- easy introduction and connection of the conductors in the terminals		N/A
	- easy fixing of the base to a wall or in a mounting box;		N/A
	- easy fixing of the base to a wall or in a mounting box		N/A
	- correct positioning of the conductors		N/A

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Cl.	Requirement – Test	Result	Verdict
	- adequate space between the underside of the base and the surface on which the base is mounted – surface mounted		N/A
	- adequate space between the underside of the base and the sides of the base and the enclosure (cover or box) – flush mounted		N/A
	Socket-outlets classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors		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:		—
	- held in place at two or more points by effective fixings		N/A
	- fixed by means of a single fixing, e.g. by a screw, provided that they are located by another means (e.g. by a shoulder)		N/A
	Means to fix covers or cover plates must be captive		N/A
	Means of covers or cover-plates of socket-outlets of design A serve to fix the base shall be 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:		—
	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

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Cl.	Requirement – Test	Result	Verdict
	only to insulating parts, 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 whose fixing is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's information given in an instruction sheet or in a catalogue:		—
	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 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 insulating parts, 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	void		N/A
13.9	Ordinary surface-type socket-outlets: no free openings in the enclosure		N/A
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 of 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

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Cl.	Requirement – Test	Result	Verdict
	Socket-outlets 16A 250V: test made 4 times with the socket-outlet turned through 90°, 15 N for 1 min (device shown in fig. 6)		N/A
	During the test: device not come out		N/A
	After the test:		—
	- no damage		N/A
	- socket-outlets comply with clause 22		N/A
13.15	Socket-outlets shall not be an integral part of lampholders		N/A
13.16	Socket-outlets other than ordinary: totally enclosed when fitted with screwed conduits or with polyvinyl chloride (p.v.c.) sheathed or similar type cables and without a plug in position		N/A
	Surface-type socket-outlets other than ordinary shall have provision for opening a drain hole of at least 5 mm in diameter, or 20 mm^2 in area with a width and a length of at least 3mm .....:	*∅mm / mm²*	N/A
	Drain hole: effective		N/A
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
13.17	void		N/A
13.18	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
	Earthing contacts and neutral contacts: locked against rotation and removable only with the aid of a tool, after dismantling the socket-outlet		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:		—
	the conduit or sheath of the cable can enter at least I 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 or a combination of at least two of any of these sizes		N/A

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Cl.	Requirement – Test	Result	Verdict
	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		—
	Accessories placed at 40 °C for 2 h. Force of 30 N applied for 5 s by test finger. 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 come out		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		—
	Accessories kept at -15 °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
13.24	Hinged covers to provide protection class ≥IPx4 of socket-outlets: reliable working ensured		N/A
14	CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OTLETS *VDE/TRLP*		P
14.1	Non-rewirable plug or non-rewirable portable socket-outlet:		N/A
	flexible cable cannot be separated from the accessory without making it permanently useless		N/A
	Accessory cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such	Consider in the end appliance	N/A
14.2	Pins of plugs and portable socket-outlets: adequate mechanical strength		P
	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		N/A
	During the application of the force: reduction of the dimension of the pin not exceed 0,15 mm		N/A

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Cl.	Requirement – Test	Result	Verdict
	After removal of the rod: dimensions of the pin not changed by more than 0,06 mm		N/A
14.3	Pins of plugs:		P
	- locked against rotation		P
	- not removable without dismantling the plug		P
	- adequately fixed in the body of the plug when the plug is wired and assembled as in normal use		P
	Earthing contacts and neutral pin: not possible to replace in an incorrect position		P
14.4	Earthing contacts and neutral contacts of portable socket-outlets:		N/A
	- locked against rotation		N/A
	- removable only with the aid of a tool, after dismantling the socket-outlet		N/A
14.5	Socket-contact assemblies: sufficient resiliency		N/A
	Contact pressure not alone depending by soldered connections		N/A
14.6	Pins and socket-contacts: resistant to corrosion and abrasion		N/A
14.7	Enclosures of rewirable accessories: completely enclose terminals and ends of flexible cable.		N/A
	Construction of rewirable accessories:		N/A
	- 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 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 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		N/A
14.10	Terminals of rewirable accessories 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 accessories: test with 6 mm free wire		N/A

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Cl.	Requirement – Test	Result	Verdict
	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		N/A
	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	No such free wire	N/A
	free wire of a conductor connected to an earth termination not touch any live part		N/A
14.10.3	Non-rewirable, moulded-on accessories:		N/A
	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:		N/A
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A
	- cord anchorage, or at least part of it, integral with or permanently fixed to one of the component parts of the 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 metal parts		N/A
	- metal parts of cord anchorages, including clamping screws: insulated from the earthing circuit		N/A
14.12	Rewirable plugs and portable socket-outlets : 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		N/A
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
14.14	Screws intended to allow access to interior of the accessory: captive		N/A
14.15	Engagement face of plugs: no projections		P

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Cl.	Requirement – Test	Result	Verdict
14.16	Engagement face of portable socket-outlets: no projection		N/A
14.17	Accessories other than ordinary: provided with gland(s) or the like		N/A
	Plugs other than ordinary: 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: 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 fixed to the wall and live parts		N/A
14.19	Combinations of plugs and socket-outlets with circuit-breakers or other protective devices comply with relevant standards, if any .....:		N/A
14.20	Portable accessories: not integral part of lampholders		P
	Adaptors must meet requirements to DIN 49437	*TRLP*	N/A
	Multiple socket outlets with earthing contacts and rigid fixed plug are not permissible		N/A
14.21	Plugs for equipment of class II:		N/A
	- non-rewirable		N/A
	- if incorporated in a cord set: provided with a connector for equipment of class II		N/A
	- if incorporated in 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	No such component	N/A
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) .....:	Shall be tested in end product.	N/A

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Cl.	Requirement – Test	Result	Verdict
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		P
	Gripping surfaces: so designed that the plug can be withdrawn without pull on the flexible cable		P
14.25	Membranes in inlet openings: meet the requirements of 13.23 and 13.24		N/A
14.26	Adaptor socket outlets: Min. length of power cord 1.4m		N/A
14.27	Table type socket-outlets: Min. length of power cord 1.4m		N/A
14.28	Hinged covers to provide protection class ≥IPx4 of portable socket-outlets: reliable working ensured		N/A
	Cover-plates fixed reliable		N/A
15	INTERLOCKED SOCKET-OUTLETS *VDE*		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 PROVIDES BY ENCLOSURE AND RESISTANCE TO HUMIDITY *VDE*		P
16.1	Resistance to ageing		P
	Accessories shall be resistant to ageing		P
	Accessories subjected to a test in a heating cabinet at 70 °C ± 2 °C for seven days (168 h)		P
	After the tests, 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 provided by enclosure		P
	Enclosures provide a degree of protection in accordance with the IP designation of the accessory:	Plug portion	P
	Flush-type and semi flush-type socket-outlets fixed:		N/A

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Cl.	Requirement – Test	Result	Verdict
	- in a test wall using an appropriate box in accordance with the manufacturer's instructions		N/A
	- in a test wall according to figure 41		N/A
	Fixed socket-outlets: Test while plugged with plug of same protection class		N/A
	Fixed socket-outlets: Test while unplugged		N/A
	Portable socket-outlets tested on a plain, horizontal surface in a position as in normal use		N/A
	Portable socket-outlets: Test while plugged with plug of same protection class or gauge acc. DIN 49440-4		N/A
	Portable socket-outlets: Test while unplugged		N/A
	Plugs: Test while plugged into portable socket-outlet with same protection class		N/A
	Accessories 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 27) .....:		N/A
	- smallest cross-sectional area (mm^2); type of cable (table 27) .....:		N/A
	Mounting screws tightened with a torque equal to 2/3 of the torque given in table 6 (Nm) .....:		N/A
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 24.6 (Nm) .....:		N/A
16.2.1	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		P
16.2.1.1	Protection against access to hazardous parts		P
	Accessories and their enclosure provide a degree of protection against access to hazardous parts		P
16.2.1.2	Protection against harmful effects due to ingress of solid foreign objects		P
	Accessories and their enclosure provide a degree of protection against harmful effects due to ingress of solid foreign objects		P
16.2.2	Protection against harmful effects due to ingress of water		P
	Enclosure of accessories other than ordinary shall provide a degree of protection against harmful ingress of water in accordance with the classification		P
	Splash-proof accessories subjected to the test IPX4 according to IEC 529		P
	Jet-proof accessories subjected to the test IPX5 according to IEC 529		N/A

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Cl.	Requirement – Test	Result	Verdict
	Specimens withstand an electric strength test specified in 17.2 which is started within 5 min after the IP test		P
16.3	Resistance to humidity		P
	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 %	93%	P
	Specimens kept in the cabinet for:		—
	- two days (48 h) for ordinary accessories		N/A
	- seven days (168 h) for accessories other than ordinary		P
	After this treatment the specimens show no damage		P
17	INSULATION RESISTANCE AND ELECTRIC STRENGTH *VDE*		P
17.1.1	For socket-outlets: insulation resistance (500 V d.c. for 1 min):		N/A
	a) between all poles connected together and the body, with a plug in engagement ≥ 5 MΩ .....:		N/A
	b) between each pole in turn and all others connected to the body, with a plug in engagement ≥ 5 MΩ .....:		N/A
	c) between any metal enclosures and metal foil in contact with the inner surface of its insulating linings, if any ≥ 5 MΩ .....:		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 MΩ .....:		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 ≥ 5 MΩ .....:		N/A
17.1.2	For plugs: insulation resistance (500 V d.c. for 1 min):		P
	a) between all poles connected together and the body ≥ 5 MΩ .....:	>500 MΩ	P
	b) between each pole in turn and all others connected to the body ≥ 5 MΩ .....:	>500 MΩ	P
	c) between any metal part of the cord anchorage, including clamping screws, and earthing terminal or earthing contact, if any ≥ 5 MΩ .....:		N/A

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Cl.	Requirement – Test	Result	Verdict
	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 MΩ .....:		N/A
17.2	Socket-outlets: electric strength, test voltage (a.c., for 1 min):		N/A
	a) test voltage (V) .....:		N/A
	b) test voltage (V) .....:		N/A
	c) test voltage (V) .....:		N/A
	d) test voltage (V) .....:		N/A
	e) test voltage (V) .....:		N/A
	Plugs: electric strength, test voltage (a.c., for 1 min):		P
	a) test voltage (V) .....:	2000V	P
	b) test voltage (V) .....:	2000V	P
	c) test voltage (V) .....:		N/A
	d) test voltage (V) .....:		N/A
	During the test no flashover or breakdown		P
18	OPERATION OF EARTHING CONTACTS		**N/A**
	Earthing contacts provide adequate contact pressure and not deteriorate in normal use		N/A
18.1	Fixed socket-outlets and portable socket-outlets		N/A
	Force exerted measured in side earthing contacts not less than 5 N (CEE 7 clause 18) .....:		N/A
	Compliance for other than side earthing contacts checked by the tests of clauses 19 and 21		N/A
18.2	Plugs		N/A
	Dimensions not changed for more than 1mm		N/A
19	TEMPERATURE RISE *TRLP*		N/A
	Rated cross section assigned by table 15:	Shall be tested in end product.	—
	Rated current: 16 A	*1.5 mm² / ~~2.5 mm²~~ flexible / ~~rigide~~*	N/A
	Rated current >16 A		N/A
	Non-rewirable accessories tested as delivered:		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm^2).....:		—
	Rewirable accessories fitted with polyvinyl chloride insulated conductors having a nominal cross-sectional area as show in table 15:		N/A
	- rated current of accessory: (A)		—
	- nominal cross-sectional area: (mm^2)		—
	- type of conductors .....:		—

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Cl.	Requirement – Test	Result	Verdict
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm) .....:		—
	Socket-outlets and adaptors tested by using a test plug according to figure 16		P
19.1	Fixed socket-outlets		N/A
19.1.1	Fixed socket-outlets without integrated supplementary functions		N/A
	Test current as specified by table 20 passed for 1h: (A)		—
	- Temperature rise of terminals and connections less than 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.1.2	Fixed socket-outlets with integrated supplementary function		N/A
	Rated current passed for 1 h (A) or:		N/A
	Rated current passed until the integrated protection device operates: (minutes)		N/A
	- Temperature rise of terminals and connections of supplementary functions do not exceed the limits of their standards		N/A
	- All other terminals , connections, contacts and terminals for mains do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
	Test current as specified by table 20 passed for 1h (A) or:		N/A

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Cl.	Requirement – Test	Result	Verdict
	Test current passed until the integrated protection device operates: (minutes):		N/A
	repeated with 0.95% of current: (A)		N/A
	Repeated with 150% of rated fuse current for 30/60 minutes: (fuse (A) / current (A) / time (minutes)		N/A
	- Temperature rise of terminals and connections do not exceed 70 K and: (K)		N/A
	- Temperature rise of contacts do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.2	Portable Socket-outlets		N/A
	Non-rewirable plugs of extension cords and socket-outlets (multiple-portable and table-type) passed by the test current acc. table 20 as intended for non-rewirable portable socket-outlets / rewirable portable accessories: (A)		N/A
19.2.1	Portable socket-outlets without integrated supplementary function		N/A
	Test current as specified by table 20 passed for 1h: (A)		—
	- Temperature rise of terminals and connections less than 45 K: (K)		N/A
	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) .....:		*N/A*
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		*N/A*
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		*N/A*
19.2.2	Portable socket-outlets with integrated supplementary function		N/A

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Cl.	Requirement – Test	Result	Verdict
	Rated current passed for 1 h (A) or:		N/A
	Rated current passed until the integrated protection device operates: (minutes):		N/A
	- Temperature rise of terminals and connections of supplementary functions do not exceed the limits of their standards		N/A
	- All other terminals , connections, contacts and terminals for mains do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
	Test current as specified by table 20 passed for 1h (A) or:		N/A
	Test current passed until the integrated protection device operates: (minutes):		N/A
	repeated with 0.95% of current: (A)		N/A
	Repeated with 150% of rated fuse current for 30/60 minutes: (fuse (A) / current (A) / time (minutes)		N/A
	- Temperature rise of terminals and connections do not exceed 70 K and: (K)		N/A
	- Temperature rise of contacts do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.3	Plugs tested using a test apparatus with thermo-couple on every live pin or PE-contact	*Class II*	N/A
19.3.1	Plugs without integrated supplementary function		N/A

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Cl.	Requirement – Test	Result	Verdict
	Test current as specified in table 20 passed for 1 h: (A)		—
	- Temperature rise of terminals and connections do not exceed 45 K: (K)	13,2 K	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.3.2	Rewirable plugs with integrated supplementary functions:		N/A
	Rated current passed for 1 h (A) or:		N/A
	Rated current passed until the integrated protection device operates: (minutes):		N/A
	Non-rewirable plugs with integrated supplementary functions:		N/A
	Test current as specified by table 20 passed for 1h: (A)		—
	- Temperature rise of terminals and connections of supplementary functions do not exceed the limits of their standards		N/A
	- All other terminals , connections, contacts and terminals for mains do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
	Test current as specified by table 20 passed for 1h (A) or:		N/A
	Test current passed until the integrated protection device operates: (minutes):		N/A
	repeated with 0.95% of current: (A)		N/A

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Cl.	Requirement – Test	Result	Verdict
	Repeated with 150% of rated fuse current for 30/60 minutes: (fuse (A) / current (A) / time (minutes)		N/A
	- Temperature rise of terminals and connections do not exceed 70 K and: (K)		N/A
	- Temperature rise of contacts do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.4	Adaptors		N/A
	Adaptors tested using a test apparatus with thermo-couple on every live pin or PE-contact		N/A
19.4.1	Adaptors without interconnected supplementary functions (DIN 49437)		N/A
	Test current as specified in table 20 passed for 1 h: (A)		—
	- Temperature rise of terminals and connections do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.4.2	Adaptors with interconnected supplementary functions		N/A
	Rated current passed for 1 h (A) or:		N/A
	Rated current passed until the integrated protection device operates: (minutes):		N/A
	- Temperature rise of terminals and connections of supplementary functions do not exceed the limits of their standards		N/A

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Cl.	Requirement – Test	Result	Verdict
	- All other terminals , connections, contacts and terminals for mains do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
	Test current as specified by table 20 passed for 1h (A) or:		N/A
	Test current passed until the integrated protection device operates: (minutes):		N/A
	repeated with 0.95% of current: (A)		N/A
	Repeated with 150% of rated fuse current for 30/60 minutes: (fuse (A) / current (A) / time (minutes)		N/A
	- Temperature rise of terminals and connections do not exceed 70 K and: (K)		N/A
	- Temperature rise of contacts do not exceed 45 K: (K)		N/A
	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) .....:		N/A
	Touchable metal parts: max. 40 K: (K)		N/A
	Touchable non-metallic parts: max. 45 K : (K)		N/A
	Temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of earthing circuits in position: (K)		N/A
19.5	Plug-in adaptors		N/A
	To be tested regarding their own product standards		N/A
	For tests of the attached plug part see clause 14.23		N/A

20	BREAKING CAPACITY *VDE*		N/A
	Accessories shall have adequate breaking capacity		N/A

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Cl.	Requirement – Test	Result	Verdict
	Compliance checked by testing:		N/A
	- socket-outlets;		N/A
	- plugs with pins which are not solid		N/A
	Test conditions:		—
	- 100 strokes; rate of operation .....:		—
	- test voltage (1,1 Vn) .....:		—
	- test current (1,25 In) (power factor 0,6) .....:		—
	Multiple socket-outlets: test carried out on one socket-outlet of each type and current rating		N/A
	During the test: no sustained arcing occur		N/A
	After the test:		—
	- specimens show no damage impairing their further use;		N/A
	- entry holes for the pins not show any damage which may impair the safety		N/A
21	NORMAL OPERATION *VDE/TRLP*		**N/A**
	Accessories shall withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		N/A
	Compliance checked by testing:		—
	- socket-outlets;		N/A
	- plugs with resilient earthing socket-contacts;		N/A
	- plugs with pins which are not solid		N/A
	Test performed on:		—
	- complete shuttered socket-outlets with operations made by apparatus		N/A
	- complete shuttered socket-outlets with operations made by hand as in normal use		N/A
	Test conditions:		—
	- 10000 strokes; rate of operation .....:		—
	- test voltage Vn (V) .....:		—
	- test current (as specified in table 20) (A) (power factor 0,8) .....:		—
	Test current passed:		—
	- during each insertion and withdrawal of the plug (In ≤ 16A)		N/A
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing (In > 16A)		N/A

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Cl.	Requirement – Test	Result	Verdict
	Multiple socket-outlets: test carried out on one socket-outlet of each type and current rating		N/A
	During the test: no sustained arcing occur		N/A
	After the test the specimens shall not show:		—
	- wear impairing their further use;		N/A
	- deterioration of enclosures, insulating lining or barriers;		N/A
	- damage to the entry holes for the pins, that might impair proper working;		N/A
	- loosening of electrical or mechanical connections;		N/A
	- seepage of sealing compound		N/A
	Shuttered socket-outlets: the following gauges not touch live parts when they remain under the relevant forces:		N/A
	- gauges of figure 3 applied with a force up to 20 N		N/A
	- steel gauge of figure 4 applied with a force up to 1 N		N/A
	Temperature-rise test (requirements of clause 19):		—
	Test current as required for the normal operation test, given in table 20, passed for 1 h (A) .....:	1	—
	Temperature rise of terminals not exceed 45 K (K) .....:		N/A
	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) .....:		N/A
	Force for opening shuitters not exceeding 50 N: (N)		N/A
	Socket-outlets: electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		N/A
	a) test voltage (V) .....:		N/A
	b) test voltage (V) .....:		N/A
	c) test voltage (V) .....:		N/A
	d) test voltage (V) .....:		N/A
	e) test voltage (V) .....:		N/A
	Plugs: electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		N/A
	a) test voltage (V) .....:	1500 V	N/A
	b) test voltage (V) .....:	1500 V	N/A
	c) test voltage (V) .....:		N/A
	d) test voltage (V) .....:		N/A

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Cl.	Requirement – Test	Result	Verdict
	During the test: no flashover or breakdown		N/A
	Force exerted measured in side earthing contacts not less than 60 % or 5 N (CEE 7 clause 18) after spreading for 48h	See appendix table on page 52	*N/A*
	Fixed socket-outlets: test according to 13.2		N/A
	Pins of plugs and portable socket-outlets: test according to 14.2		N/A
22	FORCE NECESSARY TO WITHDRAW THE PLUG *TRLP*		**N/A**
	Construction of accessory shall allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet in normal use		N/A
	Rated current (A) .....:		—
	Number of poles .....:		—
22.1	Verification of the maximum withdrawal force		N/A
22.1.1	Socket-outlets (multi-pin gauge):		N/A
	Maximum withdrawal force (table 16): (N) .....:		—
	The plug not remain in the socket-outlet		N/A
22.1.2	Plugs with resilient earthing contacts (single-pin gauge):		N/A
	Maximum withdrawal force (table 16): (N)		—
	The gauge not remain in the socket-outlet		N/A
22.2	Verification of the minimum withdrawal force (single-pin gauge)		N/A
	Minimum withdrawal force (table 16): (N)		—
	The gauge remain in the socket-outlet at least 30 seconds		N/A
23	FLEXIBLE CABLES AND THEIR CONNECTION *VDE*		N/A
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	No cable connection	N/A
	Sheath of flexible cable clamped within the cord anchorage		N/A
23.2	Pull and torque test		N/A
	Storage for 1h at 45°C. Cord anchorage works properly after pull with 50 N for 30s		N/A
	Non-rewirable accessories:		N/A
	- rating of accessory .....:		—

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Cl.	Requirement – Test	Result	Verdict
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm^2) .....:		—
	- pull (100 times) (N) .....:		N/A
	- torque (1 min) as specified in table 18 (Nm) .....:		N/A
	After the test:		—
	Displacement ≤ 2 mm .....:		N/A
	No break in the electrical connections		N/A
	Rewirable accessories:		N/A
	- rating of accessory .....:		—
	- 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:		—
	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 16 A:		—
	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 (mm^2).....:		—
23.3	Non-rewirable plugs and non-rewirable portable socket-outlets: provided with a flexible cable complying with IEC 227 or IEC 245		N/A
	A power cord provided with rewirable plug or rewirable portable socket-outlet must meet the same requirements		N/A

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Cl.	Requirement – Test	Result	Verdict
	Flexible cables have the same number of conductors as there are poles in the plug or socket-outlet		N/A
	Conductor connected to the earthing contact: identified by the colour combination green/yellow		N/A
23.4	Plugs and portable socket-outlets: designed that the flexible cable is protected against excessive bending		N/A
	Guards shall be of insulating material and fixed in reliable manner		N/A
	Flexing test (10.000 flexings):		N/A
	- type of flexible cable and nominal cross-sectional area (mm^2) .....:		—
	- test current (A) .....:		—
	- mass (N) .....:		—
	During the test: no interruption of the test current and no short-circuit between conductors		N/A
	Voltage drop test: test current (A); voltage drop (≤ 10 mV) .....:		N/A
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible		N/A
24	MECHANICAL STRENGTH		P
	Accessories, surface mounting boxes, screwed glands and flanges have adequate mechanical strength	No such accessories	N/A
24.1	Fixed socket-outlets, portable multiple socket-outlets and surface mounting boxes: impact test (apparatus shown in fig. 16, 17, 18 and 19)		N/A
	After the test: no damage, live parts no become accessible		N/A
24.2	Portable single socket-outlets and plugs: tumbling barrel test; number of falls .....:	Test on the whole adaptor	P
	After the test:		—
	No part become detached or loosened;	113g, 500 falls	P
	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;		P
	Pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction	Pins do not turn or loosen.	P
	Socket-outlets with shutter must be tested to cl. 21 again		P

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Cl.	Requirement – Test	Result	Verdict
24.3	Ordinary 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 test: no damage		N/A
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. 28)		P
	Specimens placed in a refrigerator at –15 °C ± 2 °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 b) (apparatus shown in fig. 22)	*TRLP*	P
	After the test: no damage		P
24.6	Screwed glands of accessories other than ordinary: torque test (1 min)		N/A
	- diameter of test rod (mm) .....:		—
	- type of material .....:		—
	- torque (Nm) .....:		—
	- type of material .....:		—
	After the test: no damage of glands and enclosure of the specimens		N/A
24.7	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in fig. 23)		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		—
	Force applied for 1 min against the shutter of an entry hole by means of one pin .....:		—
	Pin not come in contact with live parts		N/A
	After the test: no damage		N/A
24.9	Multiple portable socket-outlet: mechanical test		—
	Rewirable multiple socket-outlets: flexible cable of the smallest cross-sectional area specified in table 3 .....:		—
	8 falls on concrete floor with the specimens arranged as shown in figure 24		N/A
	After the test: no damage, no part have become detached or loosened		N/A
	Accessories other than ordinary submitted again to the test as specified in 16.2		N/A

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Cl.	Requirement – Test	Result	Verdict
	Socket-outlets with shutter must be tested to cl. 21 again		N/A
24.10	Plugs: pull test to verify the fixation of pins in the body of the plug (new specimens)		P
	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 .....:	0,2mm	P
24.11	Barriers of portable socket-outlets having means for suspension on a wall:		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 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):		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 wall		N/A
24.13	Portable socket-outlets having means for suspension on a wall (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 wall		N/A
24.14	Force necessary for covers or cover-plates to come off or not to come off (accessibility with the test finger to live parts)		N/A
24.14.1	Verification of the non-removal of covers or cover-plates		N/A
	Force applied for 1 min in direction perpendicular to the mounting surface .....:		—
	Covers or cover-plates not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 8)		N/A
	Covers or cover-plates 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 come off		N/A

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Cl.	Requirement – Test	Result	Verdict
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 8)		N/A
	Covers or cover-plates come off		N/A
	After the test: no damage		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
24.15.1	Verification of the non-removal of covers or cover-plates		N/A
	Force applied for 1 min in direction perpendicular to the mounting surface .....:		—
	Covers or cover-plates not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 8)		N/A
	Covers or cover-plates not come off		N/A
	After the test: no damage		N/A
24.15.2	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 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. 8)		N/A
	Covers or cover-plates come off		N/A
	After the test: no damage		N/A
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 ≤ 25 V a.c. or metal parts separated from live parts by creepage distances twice those according to table 23)		N/A
24.16.1	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 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. 8)		N/A
	Covers or cover-plates not come off		N/A
	After the test: no damage		N/A
24.16.2	Verification of the removal of covers or cover-plates		N/A

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Cl.	Requirement – Test	Result	Verdict
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates 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. 8)		N/A
	Covers or cover-plates come 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 .....:		N/A
24.18	Test with gauge according to figure 5 applied as shown in figure 11 (1 N): gauge not enter more than 1mm .....:		N/A
24.19	While pressure test on flange with apparatus according to figure 37b (20N, 1 min., 25°C) the portable socket-outlet meet requirements of its dimension-sheet		N/A
24.20	Springs or other mechanism of hinged covers of socket-outlets having protection class ≥IP44 are not loosened or fail after hinge opened 5000 for times		N/A
24.21	Cover plates of socket-outlets do not work loose or impair further use after pull test (30s, 50N)		N/A
25	RESISTANCE TO HEAT		P
25.1	Fixed and portable accessories: heating cabinet 100 °C for 1 h		—
	During the test: no change impairing their further use and sealing compound, if any, not flow		P
	After the test: markings still legible		P
25.2	Parts of insulating material of fixed socket-outlets 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)		P
	After the test: diameter of impression ≤ 2 mm .....:	Pin holder: 1,0mm	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)		P
	Test temperature (°C) .....:	70	—
	After the test: diameter of impression ≤ 2 mm .....:	Enclosure: 0,5 mm	P
25.4	Portable accessories: compression test (20 N, 1 h, 80 °C) by means of the apparatus shown in figure 28		P
	After the test: no damage		P

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Cl.	Requirement – Test	Result	Verdict
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	No such part	N/A
	Thread-cutting screws intended to be used during installation: captive		N/A
	Screws and nuts which transmit contact pressure: in engagement with a metal thread		N/A
	Test:		—
	- 10 times for screws in engagement with a thread of insulating material and for screws of insulating material		N/A
	- 5 times for all other cases		N/A
	- terminals: screw diameter (mm); torque (Nm); times .....:		—
	- earthing terminals: screw diameter (mm); torque (Nm); times .....:		—
	- assembly screws: screw diameter (mm); torque (Nm); times .....:		—
	- cord anchorage: screw diameter (mm); torque (Nm); times .....:		—
	- other screws or nuts: diameter (mm); torque (Nm); times .....:		—
	During the test: no damage impairing the further use of the screwed connectons		N/A
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 of metal having mechanical strength, electrical conductivity and resistance to corrosion adequate:		P
	- copper;		N/A
	- alloy with at least 58 % copper for parts made from cold-rolled sheet or with at least 50 % copper for other parts;	>64.5 %	P
	- stainless steel with at least 13 % chromium and not more than 0,09 % carbon		N/A

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	- steel with electroplated coating of zinc (ISO 2081), with thickness of at least:		N/A
	5 µm, service condition ISO no. 1, for ordinary equipment		N/A
	12 µm, service condition ISO no. 2, for splash-proof equipment		N/A
	25 µm, service condition ISO no. 3, for jet-proof equipment		N/A
	- steel with electroplated coating of nickel and chromium (ISO 1456), with thickness of at least:		N/A
	20 µm, service condition ISO no. 2, for ordinary equipment		N/A
	30 µm, service condition ISO no. 3, for splash-proof equipment		N/A
	40 µm, service condition ISO no. 4, for jet-proof equipment		N/A
	- steel with electroplated coating of tin (ISO 2093), with thickness of at least:		N/A
	12 µm, service condition ISO no. 2, for ordinary equipment		N/A
	20 µm, service condition ISO no. 3, for splash-proof equipment		N/A
	30 µm, service condition ISO no. 4, for jet-proof equipment		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		N/A
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 parts		N/A
	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	For internal connection other than screw terminal and screwless terminal used in fixed and portable accessories, these connections must be welded, soldered, crimped or other reliable connection method.		N/A
27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND *TRLP*		P
27.1	Creepage distances, clearances and distances through sealing compound no less than the values shown in table 23		P

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Cl.	Requirement – Test	Result	Verdict
	Creepage distances (cr):		P
	1) between live parts of different polarity ≥ 4(3) mm .....:	Measured: 13,6mm	P
	2) between live parts and:		—
	- accessible insulating and earthed metal parts ≥ 3 mm .....:		N/A
	- parts of earthing circuit ≥ 3 mm .....:		N/A
	- metal frames supporting the base of flush-type socket-outlets ≥ 3 mm .....:		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets ≥ 3 mm .....:		N/A
	- external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit ≥ 3 mm .....:		N/A
	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 ≥ 6(4,5) mm .....:		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 ≥ 6(4,5) mm .....:		N/A
	5) between live parts of a socket-outlet (without a plug) and its accessible unearthed metal parts ≥ 6(4,5) mm .....:		N/A
	Clearances (cl):		P
	6) between live parts of different polarity ≥ 3 mm ..:	Measured: 13,6mm	P
	7) between live parts and:		—
	- accessible insulating and earthed metal parts not mentioned under 8 and 9 ≥ 3 mm .....:		N/A
	- parts of earthing circuit ≥ 3 mm .....:		N/A
	- metal frames supporting the base of flush-type socket-outlets ≥ 3 mm .....:		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets ≥ 3 mm .....:		N/A
	- external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit ≥ 3 mm .....:		N/A
	8) between live parts and:		—
	- exclusively earthed metal boxes ≥ 3 mm .....:		N/A
	- unearthed metal boxes, without insulating lining ≥ 4,5 mm .....:		N/A
	accessible unearthed or functional earthed metal parts of socket-outlet and plugs		N/A

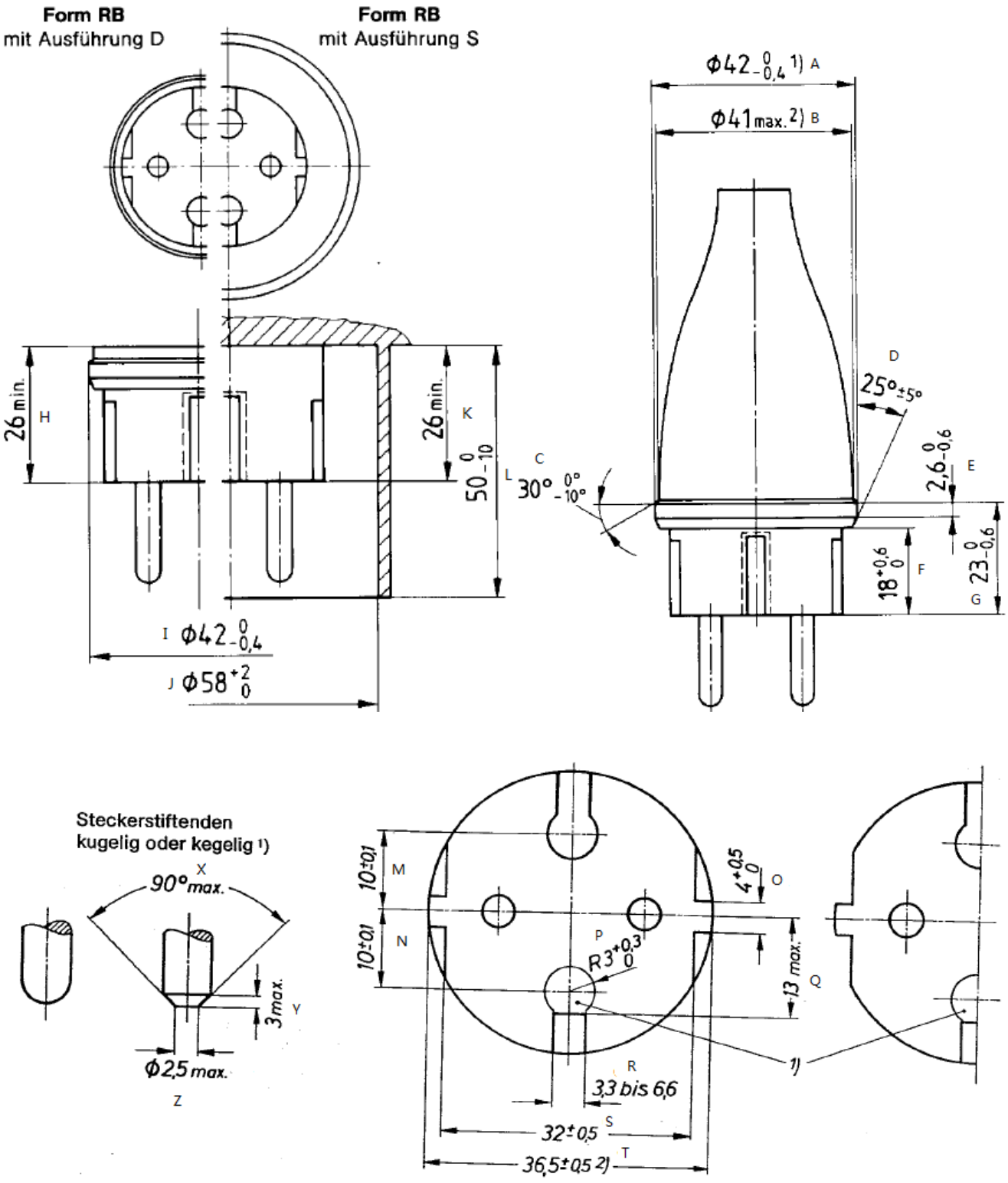
DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	9) between live parts and the surfaces on which the base of a socket-outlet for surface mounting is mounted ≥ 6 mm .....:		N/A
	10) between live parts and the bottom of any conductor recess, if any, in the base of a socket-outlet for surface mounting ≥ 3 mm.....:		N/A
	Distance through insulating sealing compound:		N/A
	11) between live parts covered with at least 2 mm of sealing compound and the surfaces on which the base of a socket-outlet for surface mounting is mounted ≥ 4(3) mm.....:		N/A
	12) between live parts covered with at least 2 mm of sealing compound and the bottom of any conductor recess, if any, in the base of a socket-outlet for surface mounting ≥ 2,5 mm.....:		N/A
27.2	Insulating sealing compound: not protrude above the edge of the cavity in which it is contained		N/A
27.3	Ordinary surface-type socket-outlets: no 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		P
	For parts of fixed accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 850 °C		N/A
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s .....:		N/A
	No ignition of the tissue paper		N/A
	For parts of fixed accessories needed to retain the earth terminal in position in a box: test temperature 650 °C		N/A
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s .....:		N/A
	No ignition of the tissue paper		N/A
	For parts of portable accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 750 °C		P
	No visible flame and no sustained glowing	Pin holder	P
	Flame and glowing extinguish within 30 s .....:		P
	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		P
	No visible flame and no sustained glowing	Enclosure	P

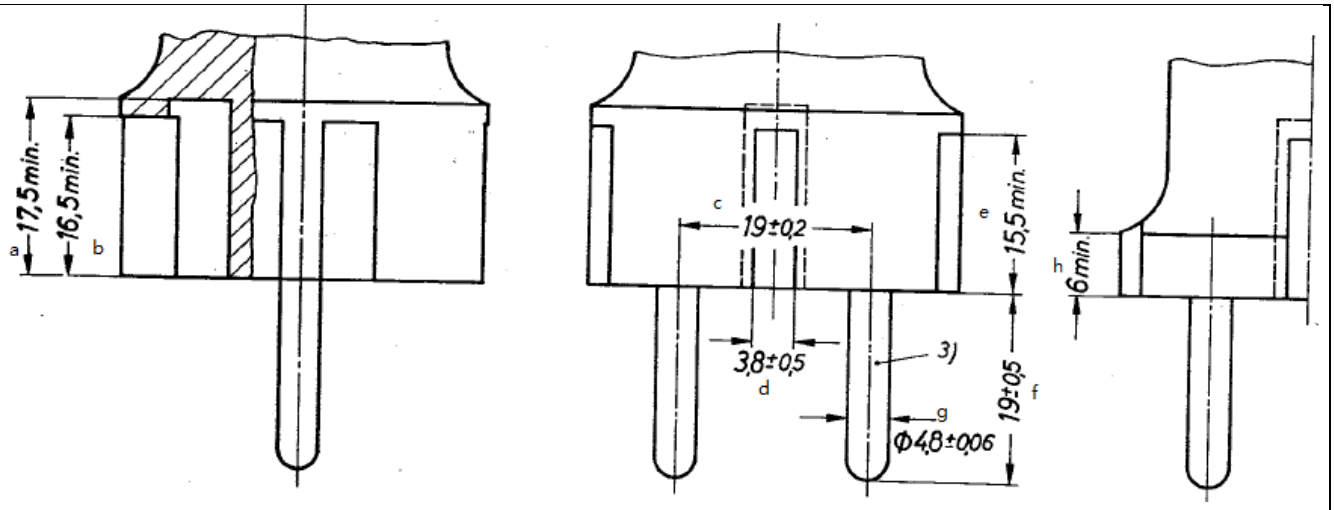
DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	Flame and glowing extinguish within 30 s .....:		P
	No ignition of the tissue paper	No ignition	P
28.1.2	Plugs with pins provided with insulating sleeves:		N/A
	Test temperature maintained for 3 h by means of the apparatus shown in figure 26 .....:		—
	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		P
	Parts of insulating material retaining live parts in position of accessories other than ordinary: test voltage 175 V, 50 drops, solution A of IEC 112		P
	No flashover or breakdown		P
29	RESISTANCE TO RUSTING		N/A
	Ferrous parts protected against rusting	No such parts	N/A
	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 100 °C		N/A
30	ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES		N/A
30.1	Pressure test at high temperature		N/A
	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
	Thickness of insulation measured: before the test (mm); after the test (mm) .....:		—
	Thickness within the area of impression ≥ 50 % of the thickness measured before the test: percent 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 68-2-30		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:		—

DIN VDE 0620-1:2010-02			
Cl.	Requirement – Test	Result	Verdict
	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
	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 30 rotating the specimen through 90° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A

Standard sheet

DIN 49406 Teil 2 for Plug





Measured dimension record (mm)

Code	Measured	Required	Code	Measured	Required
A	41.7	$42^{0}_{-0.4}$	P	3.3	$R3^{+0.3}_{0}$
B	39.2	41_{max}	Q	12.5	13 max
C	29	$30^{o}{}^{0^o}_{-10^o}$	R	4.0	3.3~6.6
D	23	25º±5º	S	31.64	32±0.5
E	2.1	$2.6^{0}_{-0.6}$	T	36.3	36.5±0.5
F	18.4	$18^{+0.6}_{0}$	X	-	90ºmax
G	26.5	$23^{0}_{-0.6}$	Y	-	3max
H	41.7	26_{min}	Z	-	Ø2.5max
I	-	$42^{0}_{-0.4}$	a	18.24	17.5min
J	-	58^{+2}_{0}	b	16.6	16.5min
K	-	26_{min}	c	18.96	19±0.2
L	-	50^{0}_{-10}	d	3.7	3.8±0.5
M	10.4	10±0.1	e	18.9	19±0.5
N	10.4	10±0.1	f	4.8	Ø4.8±0.06
O	4.2	$4^{+0.5}_{0}$	g	-	6min
			h	16.48	15.5min

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

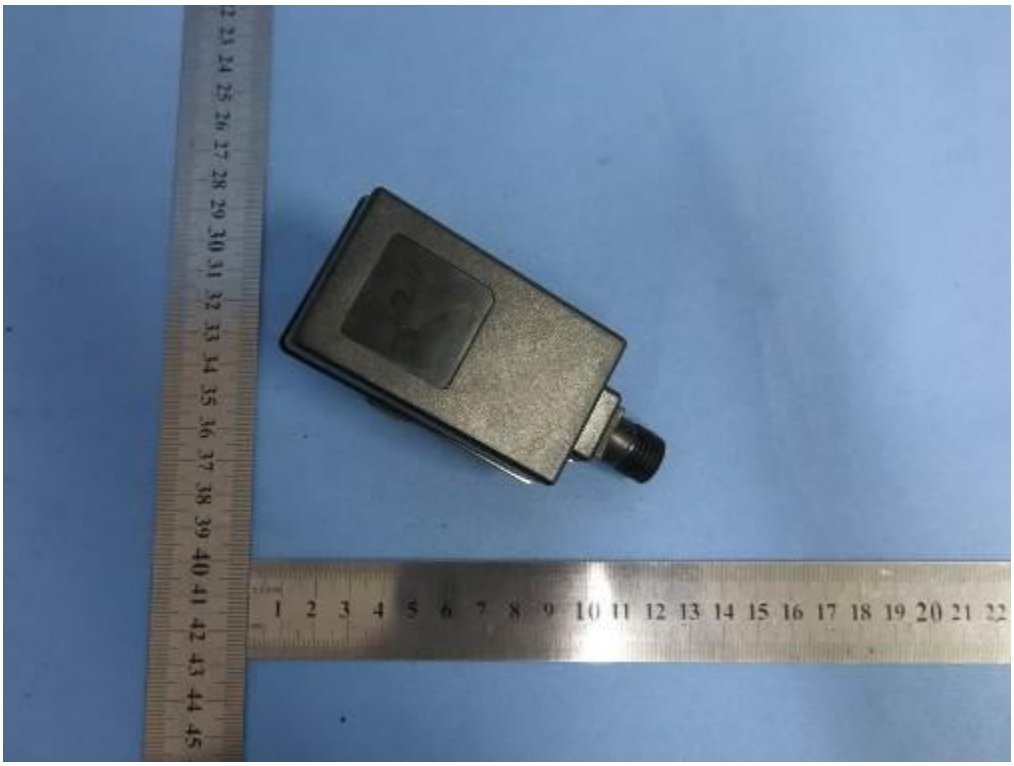


Figure 1 External view of RKPO-UKxxxyyyy

Figure 2 External view of RKPO-UKxxxyyyy

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

Figure 3 External view of RKPO-EUxxxyyyy

Figure 4 External view of RKPO-EUxxxyyyy

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

Figure 5 Output connector view

Figure 6 Internal view

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

Figure 7 Internal view

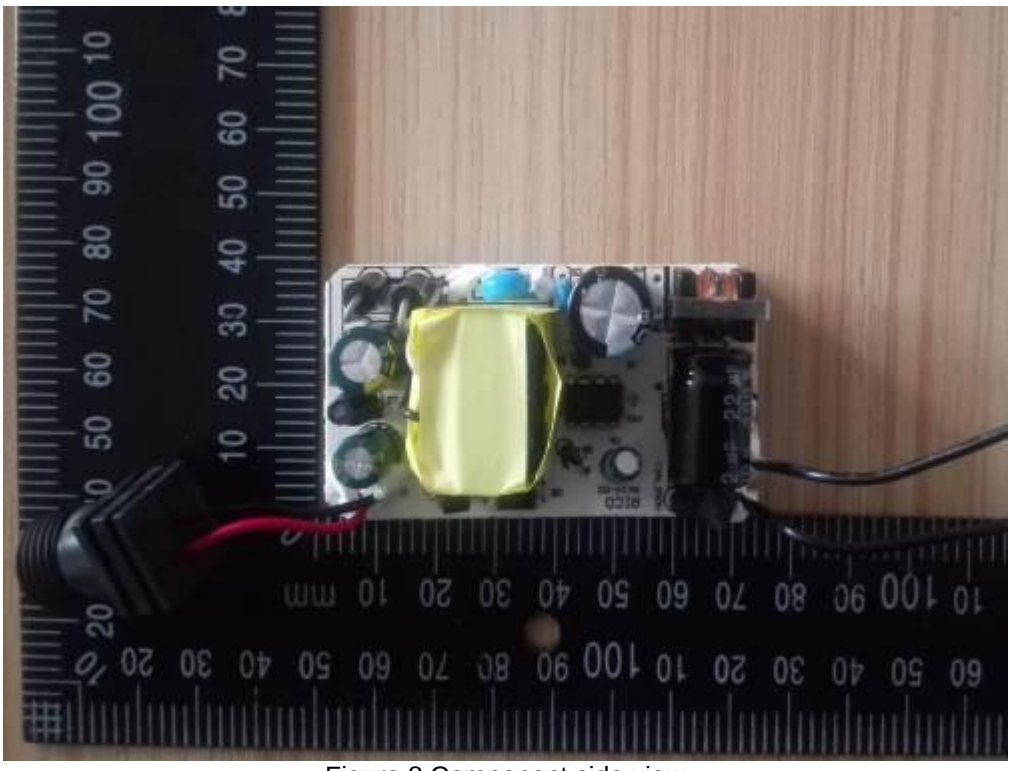


Figure 8 Component side view

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

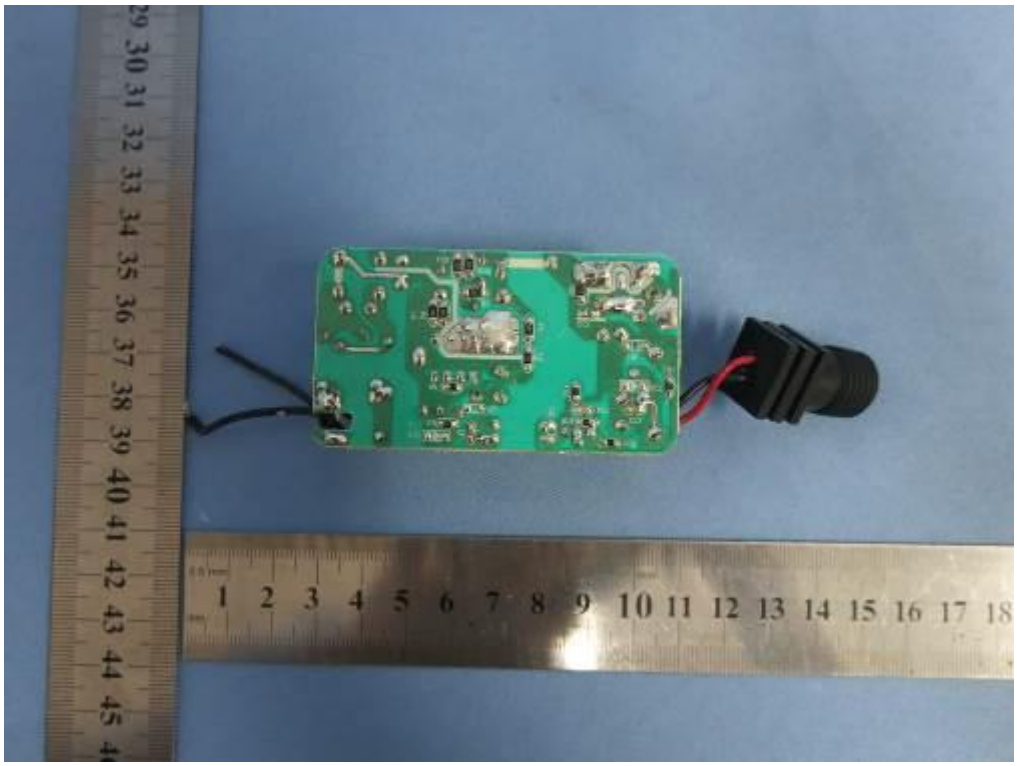


Figure 9 Trace side view

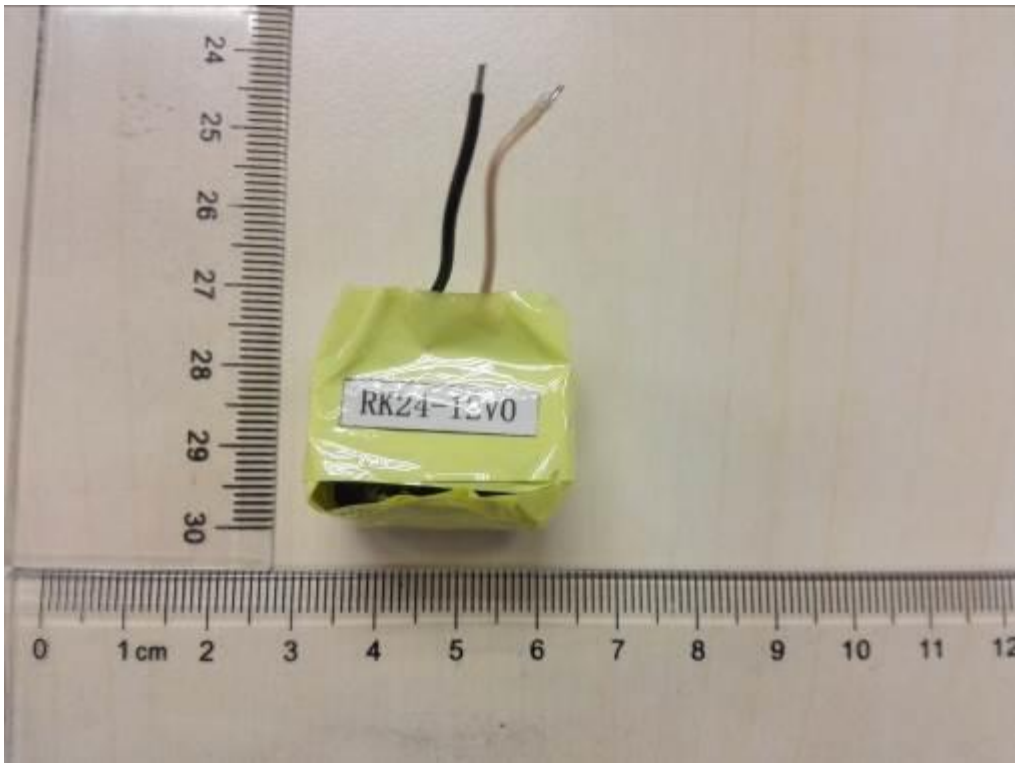


Figure 10 Transformer T1 view

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

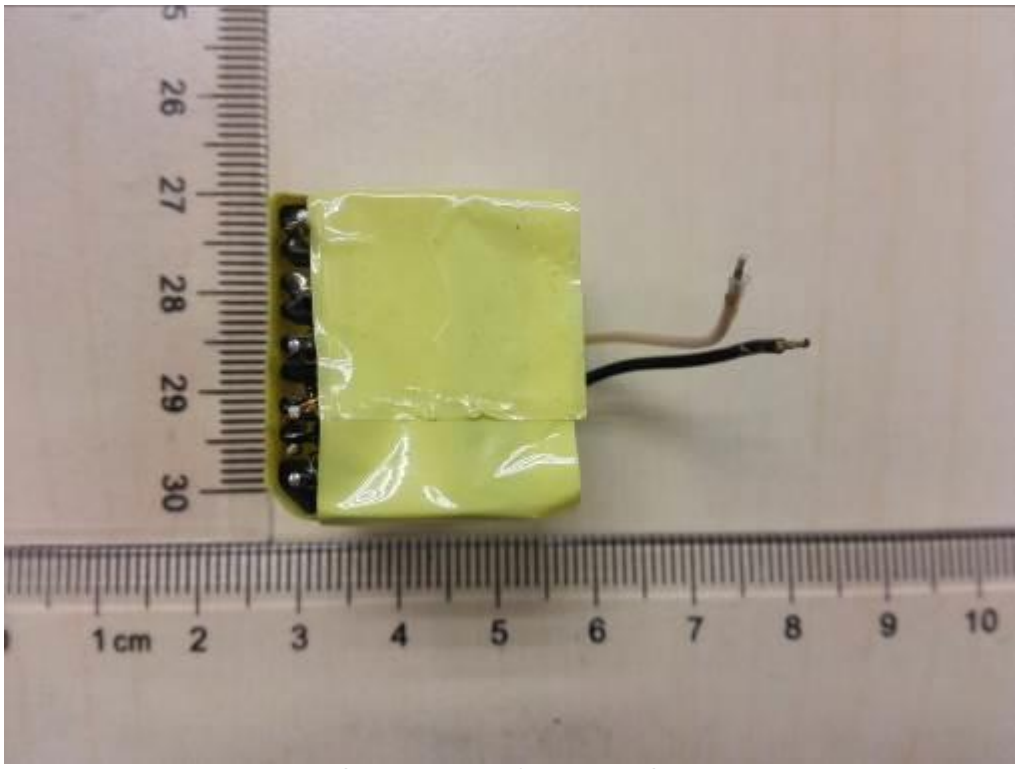


Figure 11 Transformer T1 view

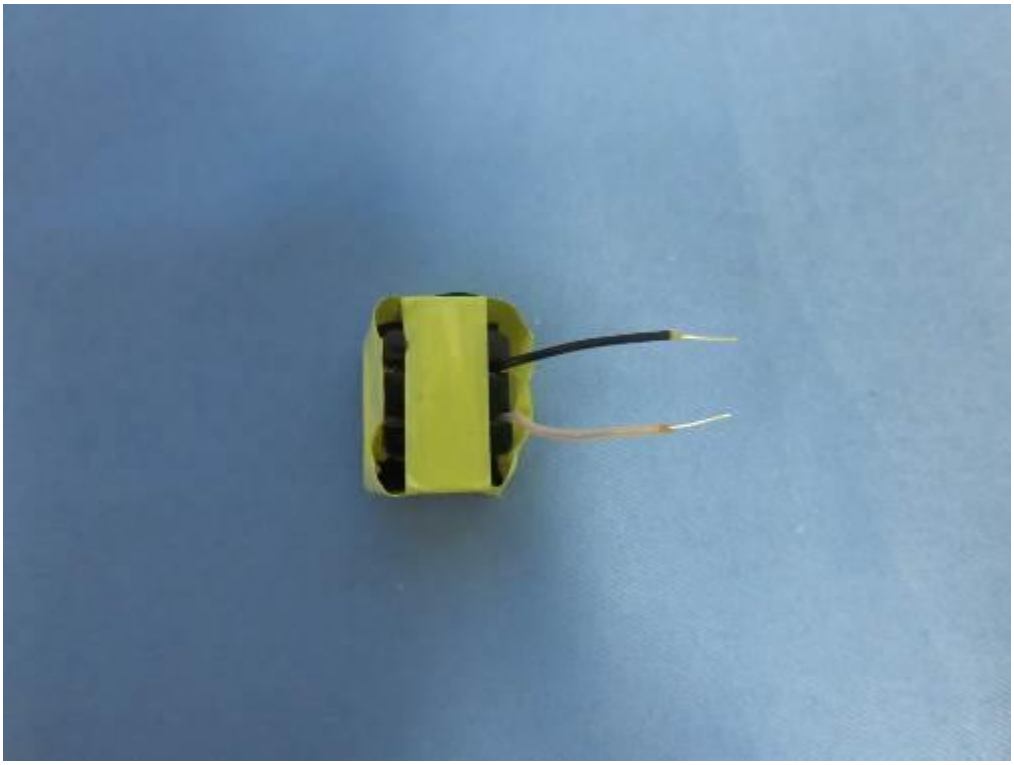


Figure 12 Transformer T1 view

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

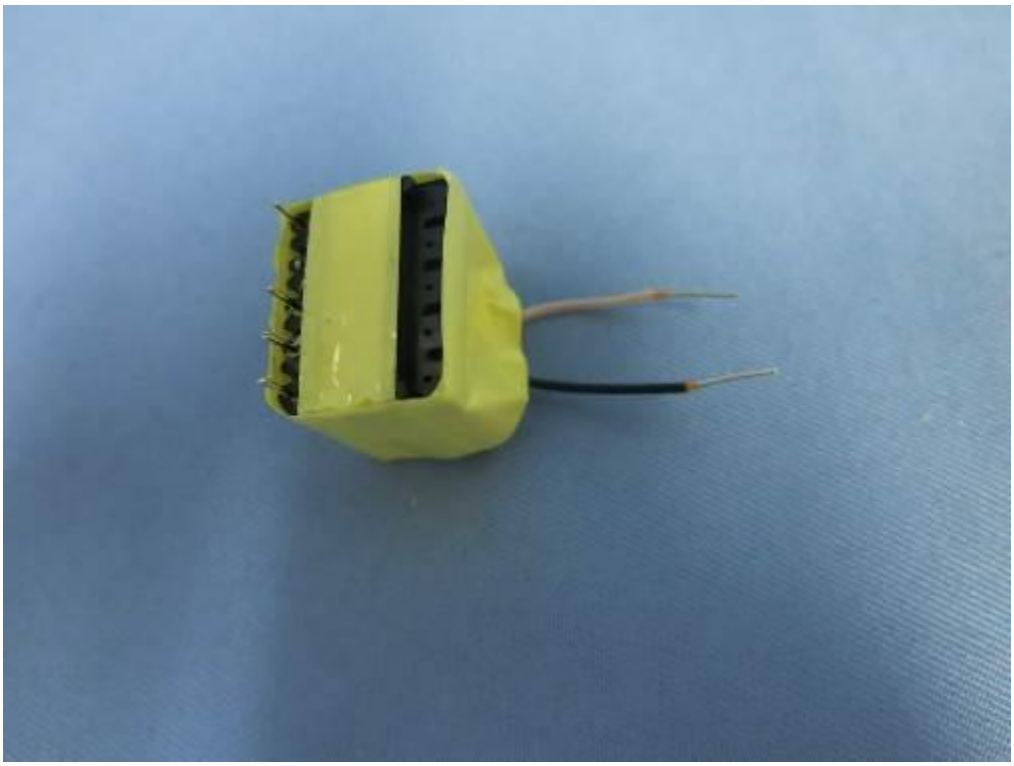


Figure 13 Transformer T1 view

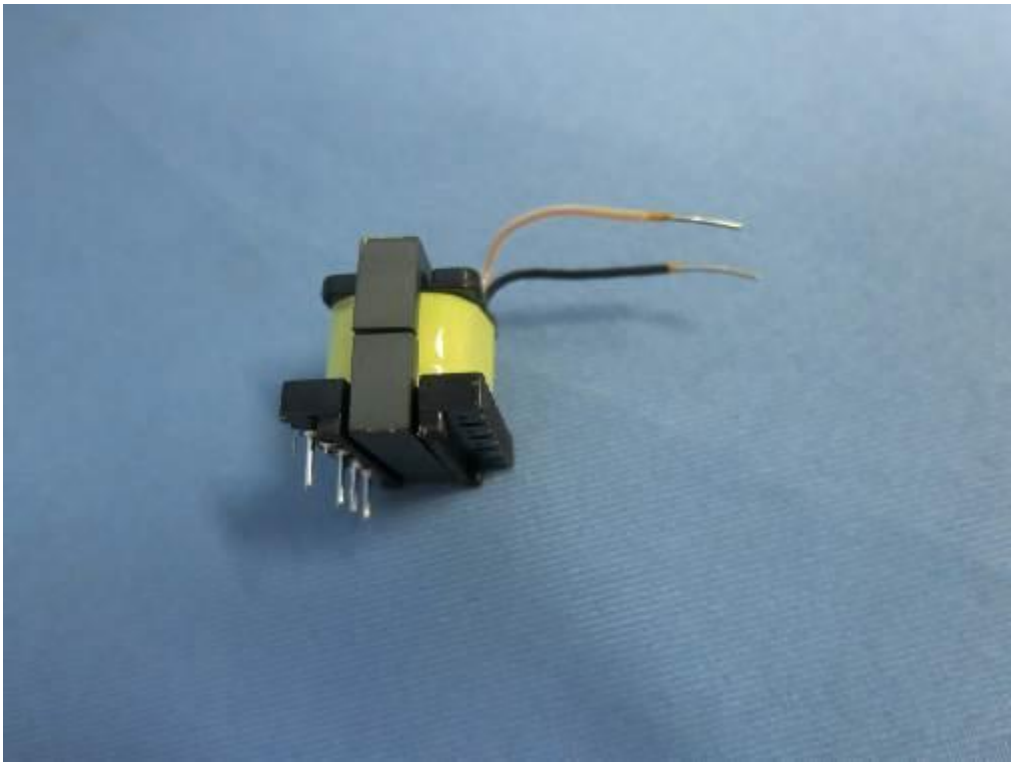


Figure 14 Transformer T1 view

Product: Led Power Supply

Type Designation: RKPO-zzxxxyyyy (zz, xxx and yyyy are varibles)

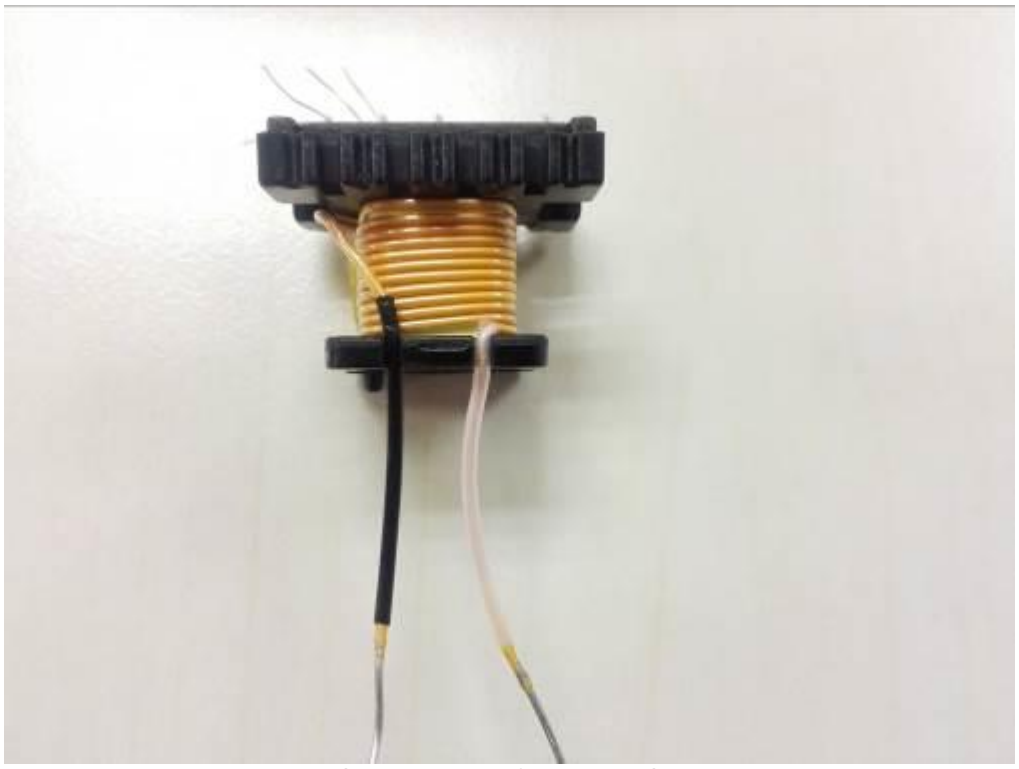


Figure 15 Transformer T1 view

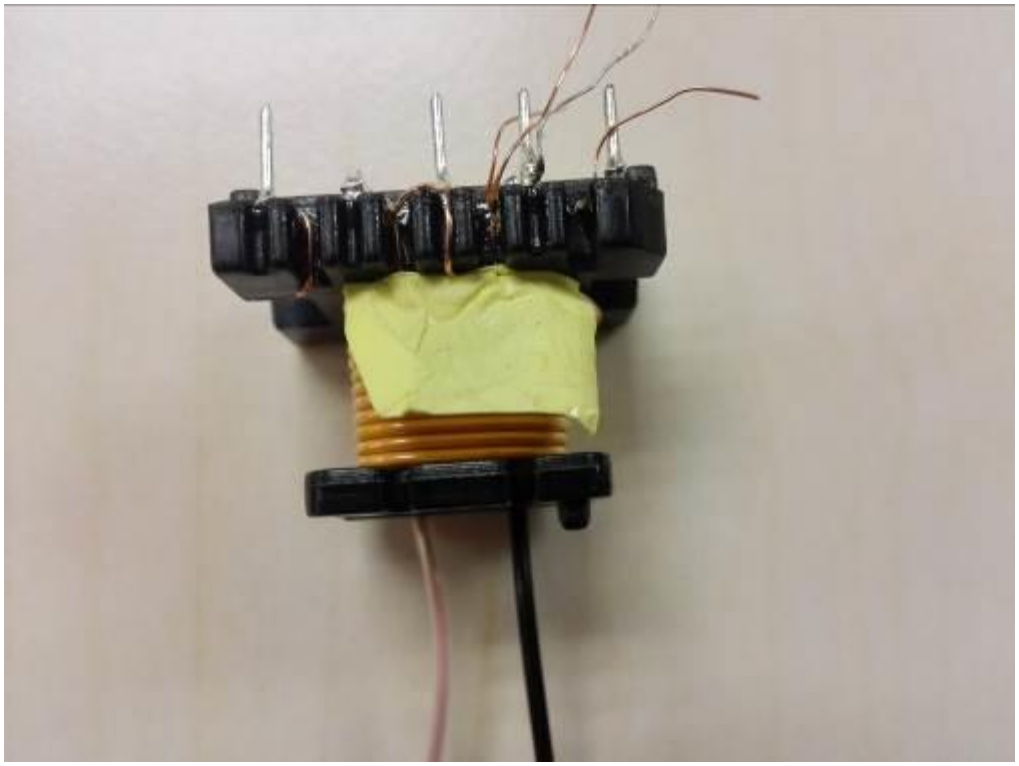


Figure 16 Transformer T1 view