



Test Report issued under the responsibility of:



TEST REPORT
IEC 60669-1
Switches for household and similar fixed-electrical installations
Part 1: General requirements

Report Number..... : **629333.01**
Date of issue..... : **2018/07/31**
Total number of pages..... : **57**

Name of Testing Laboratory : **SGS Belgium N.V., Division SGS CEBEC**
preparing the Report :
Boulevard Internationalelaan 55, Bld D
B-1070 Brussel Belgium

Applicant's name : **AB Plast s.r.l – Hager Group**
Address..... : Via del Artigianato 6
25080 Mazzano (BS) Italy

Test specification:

Standard : IEC 60669-1:2017
Test procedure..... : CB Scheme
Non-standard test method : N/A

Test Report Form No...... : IEC60669_1F

Test Report Form(s) Originator : VDE
Master TRF : Dated 2018-02-09

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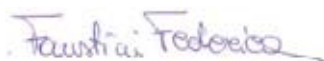


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Test item description	Flush type switches	
Trade Mark	Hager	
Manufacturer	AB plast s.r.l.	
Model/Type reference	Gallery	
Ratings	250 V~ 10AX	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input type="checkbox"/>	CB Testing Laboratory:	
Testing location/ address		
Tested by (name, function, signature).....		
Approved by (name, function, signature)		
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address		
Tested by (name, function, signature).....		
Approved by (name, function, signature)		
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 2:	
Testing location/ address		AB Plast s.r.l – Hager Group Via dell’Artigianato 6 25080 Molinetto di Mazzano (BS) Italy
Tested by (name + signature)		Faustini Federica 
Witnessed by (name, function, signature).....		Zanutto Luigi 
Approved by (name, function, signature)		Piras Silvio 
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address		
Tested by (name, function, signature).....		
Witnessed by (name, function, signature).....		
Approved by (name, function, signature)		
Supervised by (name, function, signature).....		

<p>List of Attachments (including a total number of pages in each attachment): No attachments</p>	
<p>Summary of testing:</p>	
<p>Tests performed (name of test and test clause):</p> <p>Pattern number 1 : Full test program:, CB TEST REPORT No. 628433/01 Additional test: §19.3 (self ballasted lamp loads) according to the new edition of IEC 60669-1 Ed.4 18-0777,18-0778,18-0779</p> <p>Pattern number 6 : Full test program:_CB TEST REPORT No. 628433/01 Additional test: §19.3 (self ballasted lamp loads) according to the new edition of IEC 60669-1 Ed.4 18-0781,18-0782,18-0783</p> <p>Pattern number 2: Full test program: 18-0710, 18-0711, 18-0712 18-0713, 18-0714 ,18-0715 18-0716, 18-0717, 18-0718 , 18-0719, 18-0720, 18-0721, 18-0722, 18-0723, 18-0724, 18-0725, 18-0726, 18-0727, 18-0728, 18-0729</p> <p>Pattern number 4 VERSION SWITCH Full test program: 18-0680, 18-0681, 18-0682, 18-0683, 18-0684, 18-0685, 18-0686, 18-0687, 18-0688, 18-0689, 18-0690, 18-0691, 18-0692, 18-0693, 18-0694 VERSION PUSH BUTTON Full test program: 18-0695, 18-0696, 18-0697, 18-0698, 18-0699, 18-0700, 18-0701, 18-0702, 18-0703, 18-0704, 18-0705, 18-0706, 8-0707, 18-0708, 18-0709</p>	<p>Testing location: AB Plast s.r.l – Hager Group Via dell'Artigianato 6 25080 Molinetto di Mazzano (BS) Italy</p>

Summary of compliance with National Differences (List of countries addressed):

No national difference

The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)

of marking plate:

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

All the following data, images and barcode are realized by laser technology.

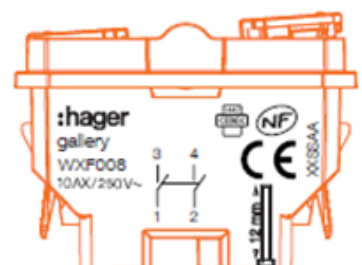
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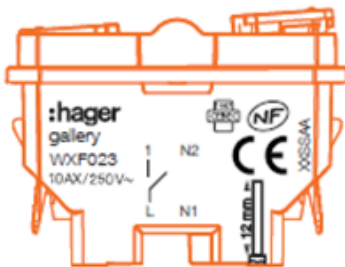
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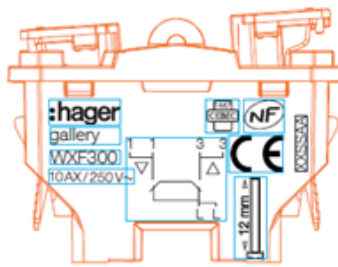
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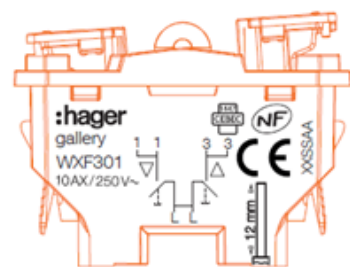
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WXF300_w2y3165



WXF301_w2y3166



Test item particulars	
Pattern number	1- 6 - 2 - 4
Contact opening (gap)	normal gap
Degree of protection against access to hazardous parts and against harmful effects due to the ingress of solid foreign objects	IP2X
Degree of protection against harmful effects due to the ingress of water	IPX0
Method of actuating	rocker / push-button
Method of application	flush-type
Method of installation	design A
Type of terminals	screwless (rigid and flexible)
Flexible cable outlet	without
Rated voltage (V).....	250V
Rated current (A).....	10A
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	June 2018
Date (s) of performance of tests	June-July 2018

General remarks:

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

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

Throughout this report a comma (",") is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60335-1:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided

- Yes
 Not applicable

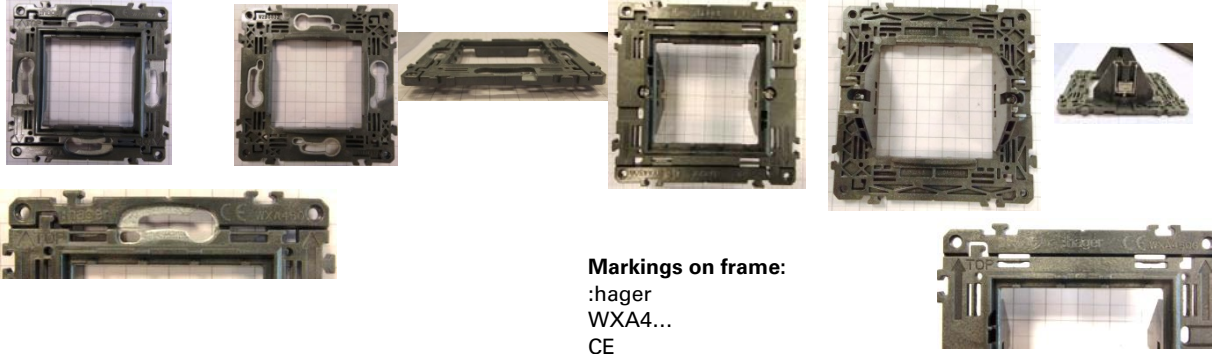
When differences exist; they shall be identified in the General product information section.

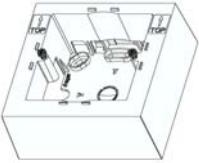
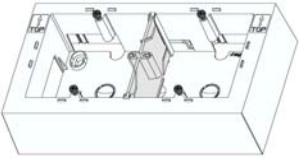
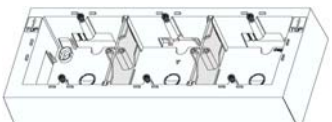
Name and address of factory (ies).....: Berker Polska SP.Z.OO
 ul. Sredzka 19
 62-035 Kornik – Poland

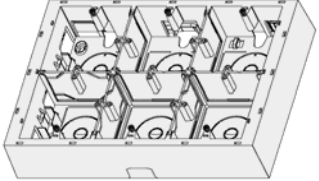
General product information and other remarks:












Commercial code	Pattern no.	Description	Rated current	Rated Voltage	Freq. (Hz)	Rated Power SBL	Type of terminal	IP
WXF001	6	2 way switch	10AX	250V	50	100W	Screwless	IP20
WXF003	6	2 way switch – InterBP with Neutral	10AX	250V	50	100W	Screwless	IP20
WXF008	2	2 Poles 10AX switch	10AX	250V	50	100W	Screwless	IP20
WXF023	1	1 way switch – InterBP ext signal	10AX	250V	50	100W	Screwless	IP20
WXF300	4	1 way shutter switch	10AX	250V	50	100W	Screwless	IP20
WXF301	4	1 way shutter push button	10A	250V	50	100W	Screwless	IP20

Trunking references	
Plastic	Metal
GBD500500	GBA500501
GBD500850	GBA500851
GBD501000	GBA501311
GBD501310	GBA501611
GBD501600	
GBD501610	
GBD501900	

Frame references	
Without claws – WXA450	With claws – WXA450G
 <p>Markings on frame: :hager WXA4... CE NIE</p>	
Product Code	Description
WXA450	EVO 2 modules frame
WXA450G	EVO 2 modules frame with claws
WXA451	EVO 1 module frame
WXA454	EVO 4 modules frame French 57mm
WXA455	EVO 5 modules frame French 71mm
WXA456	EVO 6 modules frame French 57mm
WXA458	EVO 8 modules frame French 71mm
WXA460	EVO 2 modules frame for competitors

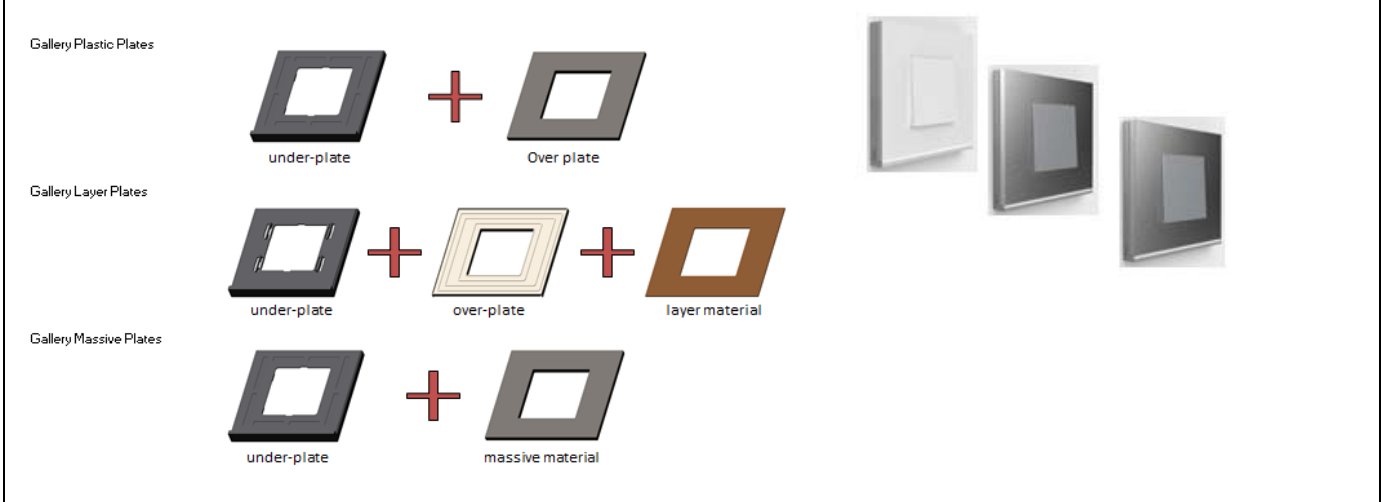
Wall boxes references		
Image	Product Code	description
	WXA681xx	Wall Box Design PROFILE single
	WXA682xx	Wall Box Design PROFILE double
	WXA683xx	Wall Box Design PROFILE triple

	<p>WXA686xx</p>	<p>Wall Box Design PROFILE 16mod</p>

Wall boxes cover plates references	
1M	
1P	
4M ENT 71	
5M ENT 71	
4M ENT 57	
6M ENT 57	
8M ENT 71	
2P HORIZ 71	
3P HORIZ 71	
4P HORIZ 71	
2P VERT 57	

3P VERT 57	
2P VERT 71	
3P VERT 71	
2x3x2M	
8M+8M	

Cover Plate references



Family plastic injected	Family plastic painted	Family material Layer	Family material Massive

<i>Plastic</i>		<i>Wood Aluminium</i>	<i>Aluminium Glass</i>
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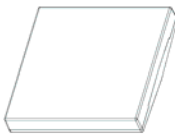
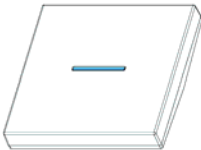
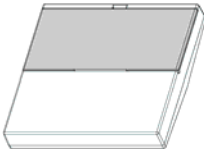
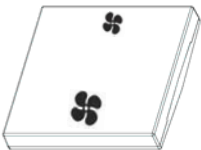
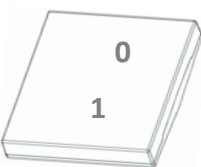

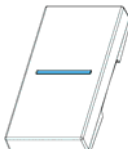
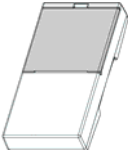

Family	Product Code	Description
MATERIAL LAYER	WXP2002	EVO Profile - material Layer - ALU -1P
MATERIAL LAYER	WXP2012	EVO Profile - material Layer - ALU - 2P HORIZ 71
MATERIAL LAYER	WXP2022	EVO Profile - material Layer - ALU - 2P VERT 57
MATERIAL LAYER	WXP2042	EVO Profile - material Layer - ALU - 2P VERT 71
MATERIAL LAYER	WXP2013	EVO Profile - material Layer - ALU - 3P HORIZ 71
MATERIAL LAYER	WXP2043	EVO Profile - material Layer - ALU - 3P VERT 71
MATERIAL LAYER	WXP2034	EVO Profile - material Layer - ALU - 4M EN 57
MATERIAL LAYER	WXP2004	EVO Profile - material Layer - ALU - 4M ENT 71
MATERIAL LAYER	WXP2014	EVO Profile - material Layer - ALU - 4P HORIZ 71
MATERIAL LAYER	WXP2005	EVO Profile - material Layer - ALU - 5M ENT 71
MATERIAL LAYER	WXP2006	EVO Profile - material Layer - ALU - 6M ENT 57
MATERIAL LAYER	WXP2008	EVO Profile - material Layer - ALU - 8M ENT 71
MATERIAL LAYER	WXP2102	EVO Profile - material Layer - INOX - 1P
MATERIAL LAYER	WXP2112	EVO Profile - material Layer - INOX - 2P HORIZ 71


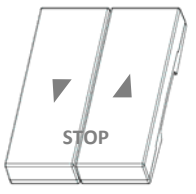
MATERIAL LAYER	WXP2122	EVO Profile - material Layer - INOX - 2P VERT 57
MATERIAL LAYER	WXP2142	EVO Profile - material Layer - INOX - 2P VERT 71
MATERIAL LAYER	WXP2113	EVO Profile - material Layer - INOX - 3P HORIZ 71
MATERIAL LAYER	WXP2143	EVO Profile - material Layer - INOX - 3P VERT 71
MATERIAL LAYER	WXP2134	EVO Profile - material Layer - INOX - 4M ENT 57
MATERIAL LAYER	WXP2104	EVO Profile - material Layer - INOX - 4M ENT 71
MATERIAL LAYER	WXP2114	EVO Profile - material Layer - INOX - 4P HORIZ 71
MATERIAL LAYER	WXP2105	EVO profile - material Layer - INOX - 5M ENT 71
MATERIAL LAYER	WXP2106	EVO Profile - material Layer - INOX - 6M ENT 57
MATERIAL LAYER	WXP2108	EVO Profile - material Layer - INOX - 8M ENT 71
MATERIAL LAYER	WXP2402	EVO Profile - material Layer - LIGHT OAK - 1P
MATERIAL LAYER	WXP2412	EVO Profile - material Layer - LIGHT OAK - 2P HORIZ 71
MATERIAL LAYER	WXP2422	EVO Profile - material Layer - LIGHT OAK - 2P VERT 57
MATERIAL LAYER	WXP2442	EVO Profile - material Layer - LIGHT OAK - 2P VERT 71
MATERIAL LAYER	WXP2413	EVO Profile - material Layer - LIGHT OAK - 3P HORIZ 71
MATERIAL LAYER	WXP2443	EVO Profile - material Layer - LIGHT OAK - 3P VERT 71
MATERIAL LAYER	WXP2434	EVO Profile - material Layer - LIGHT OAK - 4M ENT 57
MATERIAL LAYER	WXP2404	EVO Profile - material Layer - LIGHT OAK - 4M ENT 71
MATERIAL LAYER	WXP2414	EVO Profile - material Layer - LIGHT OAK - 4P HORIZ 71
MATERIAL LAYER	WXP2405	EVO profile - material Layer - LIGHT OAK - 5M ENT 71
MATERIAL LAYER	WXP2406	EVO Profile - material Layer - LIGHT OAK - 6M ENT 57
MATERIAL LAYER	WXP2408	EVO Profile - material Layer - LIGHT OAK - 8M ENT 71
MATERIAL LAYER	WXP2502	EVO Profile - material Layer - BROWN OAK - 1P
MATERIAL LAYER	WXP2512	EVO Profile - material Layer - BROWN OAK - 2P HORIZ 71
MATERIAL LAYER	WXP2522	EVO Profile - material Layer - BROWN OAK - 2P VERT 57
MATERIAL LAYER	WXP2542	EVO Profile - material Layer - BROWN OAK - 2P VERT 71
MATERIAL LAYER	WXP2513	EVO Profile - material Layer - BROWN OAK - 3P HORIZ 71
MATERIAL LAYER	WXP2543	EVO Profile - material Layer - BROWN OAK - 3P VERT 71
MATERIAL LAYER	WXP2534	EVO Profile - material Layer - BROWN OAK - 4M ENT 57
MATERIAL LAYER	WXP2504	EVO Profile - material Layer - BROWN OAK - 4M ENT 71
MATERIAL LAYER	WXP2514	EVO Profile - material Layer - BROWN OAK - 4P HORIZ 71
MATERIAL LAYER	WXP2505	EVO profile - material Layer - BROWN OAK - 5M ENT 71
MATERIAL LAYER	WXP2506	EVO Profile - material Layer - BROWN OAK - 6M ENT 57
MATERIAL LAYER	WXP2508	EVO Profile - material Layer - BROWN OAK - 8M ENT 71
MATERIAL LAYER	WXP2202	EVO Profile - material Layer - BRONZE - 1P
MATERIAL LAYER	WXP2212	EVO Profile - material Layer - BRONZE - 2P HORIZ 71
MATERIAL LAYER	WXP2222	EVO Profile - material Layer - BRONZE - 2P VERT 57
MATERIAL LAYER	WXP2242	EVO Profile - material Layer - BRONZE - 2P VERT 71
MATERIAL LAYER	WXP2213	EVO Profile - material Layer - BRONZE - 3P HORIZ 71
MATERIAL LAYER	WXP2243	EVO Profile - material Layer - BRONZE - 3P VERT 71
MATERIAL LAYER	WXP2234	EVO Profile - material Layer - BRONZE - 4M ENT 57
MATERIAL LAYER	WXP2204	EVO Profile - material Layer - BRONZE - 4M ENT 71
MATERIAL LAYER	WXP2214	EVO Profile - material Layer - BRONZE - 4P HORIZ 71
MATERIAL LAYER	WXP2205	EVO Profile - material Layer - BRONZE - 5M ENT 71
MATERIAL LAYER	WXP2206	EVO Profile - material Layer - BRONZE - 6M ENT 57
MATERIAL LAYER	WXP2208	EVO Profile - material Layer - BRONZE - 8M ENT 71
MATERIAL MASSIVE	WXP4502	EVO Profile - material massive - BRASS - 1P METAL
MATERIAL MASSIVE	WXP4512	EVO Profile - material massive - BRASS - 2P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4522	EVO Profile - material massive - BRASS - 2P VERT 57 METAL
MATERIAL MASSIVE	WXP4542	EVO Profile - material massive - BRASS - 2P VERT 71 METAL
MATERIAL MASSIVE	WXP4513	EVO Profile - material massive - BRASS - 3P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4543	EVO Profile - material massive - BRASS - 3P VERT 71 METAL
MATERIAL MASSIVE	WXP4534	EVO Profile - material massive - BRASS - 4M ENT 57 METAL
MATERIAL MASSIVE	WXP4504	EVO Profile - material massive - BRASS - 4M ENT 71 METAL
MATERIAL MASSIVE	WXP4514	EVO Profile - material massive - BRASS - 4P HORIZ 71
MATERIAL MASSIVE	WXP4505	EVO Profile - material massive - BRASS - 5M ENT 71 METAL
MATERIAL MASSIVE	WXP4506	EVO Profile - material massive - BRASS - 6M ENT 57 METAL
MATERIAL MASSIVE	WXP4508	EVO Profile - material massive - BRASS - 8M ENT 71 METAL
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MATERIAL MASSIVE	WXP4612	EVO Profile - material massive - COPPER - 2P HORIZ 71
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MATERIAL MASSIVE	WXP4613	EVO Profile - material massive - COPPER - 3P HORIZ 71
MATERIAL MASSIVE	WXP4643	EVO Porifle - material massive - COPPER - 3P VERT 71
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MATERIAL MASSIVE	WXP4604	EVO Profile - material massive - COPPER - 4M ENT 71
MATERIAL MASSIVE	WXP4614	EVO Profile - material massive - COPPER - 4P HORIZ 71
MATERIAL MASSIVE	WXP4605	EVO Profile - material massive - COPPER - 5M ENT 71


MATERIAL MASSIVE	WXP4606	EVO Profile - material massive - COPPER - 6M ENT 57
MATERIAL MASSIVE	WXP4608	EVO Profile - material massive - COPPER - 8M ENT 71
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MATERIAL MASSIVE	WXP4112	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 2P HORIZ 71
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MATERIAL MASSIVE	WXP4142	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 2P VERT 71
MATERIAL MASSIVE	WXP4113	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 3P HORIZ 71
MATERIAL MASSIVE	WXP4143	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 3P VERT 71
MATERIAL MASSIVE	WXP4134	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 4M ENT 57
MATERIAL MASSIVE	WXP4104	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 4M ENT 71
MATERIAL MASSIVE	WXP4114	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 4P HORIZ 71
MATERIAL MASSIVE	WXP4105	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 5M ENT 71
MATERIAL MASSIVE	WXP4106	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 6M ENT 57
MATERIAL MASSIVE	WXP4108	EVO PROFILE - MATERIAL MASSIVE - BLACK GLASS - 8M ENT71
MATERIAL MASSIVE	WXP5002	Profile - massive - TINTED MIRROR - 1P
MATERIAL MASSIVE	WXP5012	Profile - massive - TINTED MIRROR - 2P H71
MATERIAL MASSIVE	WXP5022	Profile - massive - TINTED MIRROR - 2P V57
MATERIAL MASSIVE	WXP5042	Profile - massive - TINTED MIRROR - 2P V71
MATERIAL MASSIVE	WXP5013	Profile - massive - TINTED MIRROR - 3P H71
MATERIAL MASSIVE	WXP5043	Profile - massive - TINTED MIRROR - 3P V71
MATERIAL MASSIVE	WXP5034	Profile - massive - TINTED MIRROR - 4M 57
MATERIAL MASSIVE	WXP5004	Profile - massive - TINTED MIRROR - 4M 71
MATERIAL MASSIVE	WXP5014	Profile - massive - TINTED MIRROR - 4P H71
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MATERIAL MASSIVE	WXP5008	Profile - massive - TINTED MIRROR - 8M 71
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MATERIAL MASSIVE	WXP4012	EVO Profile - material massive - WHITE GLASS - 2P HORIZ 71
MATERIAL MASSIVE	WXP4022	EVO Profile - material massive - WHITE GLASS - 2P VERT 57
MATERIAL MASSIVE	WXP4042	EVO Profile - material massive - WHITE GLASS - 2P VERT 71
MATERIAL MASSIVE	WXP4013	EVO Profile - material massive - WHITE GLASS - 3P HORIZ 71
MATERIAL MASSIVE	WXP4043	EVO Profile - material massive - WHITE GLASS - 3P VERT 71
MATERIAL MASSIVE	WXP4034	EVO Profile - material massive - WHITE GLASS - 4M ENT 57
MATERIAL MASSIVE	WXP4004	EVO Profile - material massive - WHITE GLASS - 4M ENT 71
MATERIAL MASSIVE	WXP4014	EVO Profile - material massive - WHITE GLASS - 4P HORIZ 71
MATERIAL MASSIVE	WXP4005	EVO Profile - material massive - WHITE GLASS - 5M ENT 71
MATERIAL MASSIVE	WXP4006	EVO Profile - material massive - WHITE GLASS - 6M ENT 57
MATERIAL MASSIVE	WXP4008	EVO Profile - material massive - WHITE GLASS - 8M ENT 71
MATERIAL MASSIVE	WXP5102	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 1P
MATERIAL MASSIVE	WXP5112	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 2P HORIZ 71
MATERIAL MASSIVE	WXP5122	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 2P VERT 57
MATERIAL MASSIVE	WXP5142	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 2P VERT 71
MATERIAL MASSIVE	WXP5113	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 3P HORIZ 71
MATERIAL MASSIVE	WXP5143	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 3P VERT 71
MATERIAL MASSIVE	WXP5134	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 4M ENT 57
MATERIAL MASSIVE	WXP5104	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 4M ENT 71
MATERIAL MASSIVE	WXP5114	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 4P HORIZ 71
MATERIAL MASSIVE	WXP5105	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 5M ENT 71
MATERIAL MASSIVE	WXP5106	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 6M ENT 57
MATERIAL MASSIVE	WXP5108	EVO PROFILE - MATERIAL MASSIVE - BEIGE LEATHER - 8M ENT 71
MATERIAL MASSIVE	WXP4902	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 1P
MATERIAL MASSIVE	WXP4912	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 2P HORIZ 71
MATERIAL MASSIVE	WXP4922	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 2P VERT 57
MATERIAL MASSIVE	WXP4942	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 2P VERT 71
MATERIAL MASSIVE	WXP4913	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 3P HORIZ 71
MATERIAL MASSIVE	WXP4943	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 3P VERT 71
MATERIAL MASSIVE	WXP4934	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 4M ENT 57
MATERIAL MASSIVE	WXP4904	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 4M ENT 71
MATERIAL MASSIVE	WXP4914	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 4P HORIZ 71
MATERIAL MASSIVE	WXP4905	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 5M ENT 71
MATERIAL MASSIVE	WXP4906	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 6M ENT 57
MATERIAL MASSIVE	WXP4908	EVO PROFILE - MATERIAL MASSIVE - BROWN LEATHER - 8M ENT 71
MATERIAL MASSIVE	WXP4302	EVO Profile - material massive - NATURAL ALU 1P METAL
MATERIAL MASSIVE	WXP4312	EVO Profile - material massive - NATURAL ALU 2P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4322	EVO Profile - material massive - NATURAL ALU 2P VERT 57 METAL
MATERIAL MASSIVE	WXP4342	EVO Profile - material massive - NATURAL ALU 2P VERT 71 METAL
MATERIAL MASSIVE	WXP4313	EVO Profile - material massive - NATURAL ALU 3P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4343	EVO Profile - material massive - NATURAL ALU 3P VERT 71 METAL

MATERIAL MASSIVE	WXP4334	EVO Profile - material massive - NATURAL ALU 4M ENT 57 METAL
MATERIAL MASSIVE	WXP4304	EVO Profile - material massive - NATURAL ALU 4M ENT 71 METAL
MATERIAL MASSIVE	WXP4314	EVO Profile - material massive - NATURAL ALU 4P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4305	EVO Profile - material massive - NATURAL ALU 5M ENT 71 METAL
MATERIAL MASSIVE	WXP4306	EVO Profile - material massive - NATURAL ALU 6M ENT 57 METAL
MATERIAL MASSIVE	WXP4308	EVO Profile - material massive - NATURAL ALU 8M ENT 71 METAL
MATERIAL MASSIVE	WXP4402	EVO PROFILE - MATERIAL MASSIVE - SLATE - 1P
MATERIAL MASSIVE	WXP4412	EVO PROFILE - MATERIAL MASSIVE - SLATE - 2P HORIZ 71
MATERIAL MASSIVE	WXP4422	EVO PROFILE - MATERIAL MASSIVE - SLATE - 2P VERT 57
MATERIAL MASSIVE	WXP4442	EVO PROFILE - MATERIAL MASSIVE - SLATE - 2P VERT 71
MATERIAL MASSIVE	WXP4413	EVO PROFILE - MATERIAL MASSIVE - SLATE - 3P HORIZ 71
MATERIAL MASSIVE	WXP4443	EVO PROFILE - MATERIAL MASSIVE - SLATE - 3P VERT 71
MATERIAL MASSIVE	WXP4434	EVO PROFILE - MATERIAL MASSIVE - SLATE - 4M ENT 57
MATERIAL MASSIVE	WXP4404	EVO PROFILE - MATERIAL MASSIVE - SLATE - 4M ENT 71
MATERIAL MASSIVE	WXP4414	EVO PROFILE - MATERIAL MASSIVE - SLATE - 4P HORIZ 71
MATERIAL MASSIVE	WXP4405	EVO PROFILE - MATERIAL MASSIVE - SLATE - 5M ENT 71
MATERIAL MASSIVE	WXP4406	EVO PROFILE - MATERIAL MASSIVE - SLATE - 6M ENT 57
MATERIAL MASSIVE	WXP4408	EVO PROFILE - MATERIAL MASSIVE - SLATE - 8M ENT 71
MATERIAL MASSIVE	WXP4202	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 1P METAL
MATERIAL MASSIVE	WXP4212	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 2P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4222	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 2P VERT 57 METAL
MATERIAL MASSIVE	WXP4242	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 2P VERT 71 METAL
MATERIAL MASSIVE	WXP4213	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 3P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4243	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 3P VERT 71 METAL
MATERIAL MASSIVE	WXP4234	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 4M ENT 57 METAL
MATERIAL MASSIVE	WXP4204	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 4M ENT 71 METAL
MATERIAL MASSIVE	WXP4214	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 4P HORIZ 71 METAL
MATERIAL MASSIVE	WXP4205	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 5M ENT 71 METAL
MATERIAL MASSIVE	WXP4206	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 6M ENT 57 METAL
MATERIAL MASSIVE	WXP4208	EVO PROFILE - MATERIAL MASSIVE - STAINLESS STEEL - 8M ENT 71 METAL
MATERIAL MASSIVE	WXP4702	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 1P
MATERIAL MASSIVE	WXP4712	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 2P HORIZ 71
MATERIAL MASSIVE	WXP4722	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 2P VERT 57
MATERIAL MASSIVE	WXP4742	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 2P VERT 71
MATERIAL MASSIVE	WXP4713	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 3P HORIZ 71
MATERIAL MASSIVE	WXP4743	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 3P VERT 71
MATERIAL MASSIVE	WXP4734	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 4M ENT 57
MATERIAL MASSIVE	WXP4704	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 4M ENT 71
MATERIAL MASSIVE	WXP4714	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 4P HORIZ 71
MATERIAL MASSIVE	WXP4705	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 5M ENT 71
MATERIAL MASSIVE	WXP4706	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 6M ENT 57
MATERIAL MASSIVE	WXP4708	EVO PROFILE - MATERIAL MASSIVE - NATURAL OAK - 8M ENT 71
MATERIAL MASSIVE	WXP4802	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 1P
MATERIAL MASSIVE	WXP4812	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 2P HORIZ 71
MATERIAL MASSIVE	WXP4822	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 2P VERT 57
MATERIAL MASSIVE	WXP4842	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 2P VERT 71
MATERIAL MASSIVE	WXP4813	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 3P HORIZ 71
MATERIAL MASSIVE	WXP4843	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 3P VERT 71
MATERIAL MASSIVE	WXP4834	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 4M ENT 57
MATERIAL MASSIVE	WXP4804	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 4M ENT 71
MATERIAL MASSIVE	WXP4814	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 4P HORIZ 71
MATERIAL MASSIVE	WXP4805	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 5M ENT 71
MATERIAL MASSIVE	WXP4806	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 6M ENT 57
MATERIAL MASSIVE	WXP4808	EVO PROFILE - MATERIAL MASSIVE - EPICEA - 8M ENT 71
PLASTIC INJECTED	WXP0001	EVO Profile - plastic injected 1K - PLASTIC INJECTED COOL WHITE - 1M
PLASTIC INJECTED	WXP0086	EVO Profile - plastic injected 1K - PLASTIC INJECTED COOL WHITE - 2x3x2M
PLASTIC INJECTED	WXP0096	EVO Profile - plastic injected 1K - PLASTIC INJECTED COOL WHITE - 8M+8M
PLASTIC INJECTED	WXP0002	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 1P
PLASTIC INJECTED	WXP0012	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 2P HORIZ 71
PLASTIC INJECTED	WXP0022	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 2P VERT 57
PLASTIC INJECTED	WXP0042	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 2P VERT 71
PLASTIC INJECTED	WXP0013	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 3P HORIZ 71
PLASTIC INJECTED	WXP0023	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 3P VERT 57
PLASTIC INJECTED	WXP0043	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 3P VERT 71
PLASTIC INJECTED	WXP0034	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 4M ENT 57
PLASTIC INJECTED	WXP0004	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 4M ENT 71
PLASTIC INJECTED	WXP0014	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 4P HORIZ 71
PLASTIC INJECTED	WXP0005	EVO Profile - plastic injected 2K - PLASTIC INJECTED COOL WHITE - 5M ENT 71

PLASTIC INJECTED	WXP0006	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 6M ENT 57
PLASTIC INJECTED	WXP0008	EVO Profile - plastic injected 2k - PLASTIC INJECTED COOL WHITE - 8M ENT 71
PLASTIC INJECTED	WXP0302	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 1P
PLASTIC INJECTED	WXP0312	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 2P HORIZ 71
PLASTIC INJECTED	WXP0322	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 2P VERT 57
PLASTIC INJECTED	WXP0342	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 2P VERT 71
PLASTIC INJECTED	WXP0313	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 3P HORIZ 71
PLASTIC INJECTED	WXP0323	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 3P VERT 57
PLASTIC INJECTED	WXP0343	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 3P VERT 71
PLASTIC INJECTED	WXP0334	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 4M ENT 57
PLASTIC INJECTED	WXP0304	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 4M ENT 71
PLASTIC INJECTED	WXP0314	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 4P HORIZ 71
PLASTIC INJECTED	WXP0305	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 5M ENT 71
PLASTIC INJECTED	WXP0306	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 6M ENT 57
PLASTIC INJECTED	WXP0308	EVO Profile - plastic injected 2K - PLASTIC INJECTED DUNE - 8M EN 71
PLASTIC PAINTED	WXP0101	EVO Profile - plastic painted 1K - PLASTIC PAINTED TITANE - 1M
PLASTIC PAINTED	WXP0186	EVO Profile - plastic painted 1K - PLASTIC PAINTED TITANE - 2x3x2M
PLASTIC PAINTED	WXP0196	EVO Profile - plastic painted 1K - PLASTIC PAINTED TITANE - 8M+8M
PLASTIC PAINTED	WXP0402	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 1P
PLASTIC PAINTED	WXP0412	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 2P HORIZ 71
PLASTIC PAINTED	WXP0422	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 2P VERT 57
PLASTIC PAINTED	WXP0442	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 2P VERT 71
PLASTIC PAINTED	WXP0413	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 3P HORIZ 71
PLASTIC PAINTED	WXP0423	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 3P VERT 57
PLASTIC PAINTED	WXP0443	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 3P VERT 71
PLASTIC PAINTED	WXP0434	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 4M ENT 57
PLASTIC PAINTED	WXP0404	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 4M ENT 71
PLASTIC PAINTED	WXP0414	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 4P HORIZ 71
PLASTIC PAINTED	WXP0405	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 5M ENT 71
PLASTIC PAINTED	WXP0406	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 6M ENT 57
PLASTIC PAINTED	WXP0408	EVO Profile - plastic painted 2K - PLASTIC PAINTED CHAMPAGNE - 8M ENT 71
PLASTIC PAINTED	WXP0502	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 1P
PLASTIC PAINTED	WXP0512	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 2P HORIZ 71
PLASTIC PAINTED	WXP0522	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 2P VERT 57
PLASTIC PAINTED	WXP0542	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 2P VERT 71
PLASTIC PAINTED	WXP0513	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 3P HORIZ 71
PLASTIC PAINTED	WXP0523	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 3P VERT 57
PLASTIC PAINTED	WXP0543	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 3P VERT 71
PLASTIC PAINTED	WXP0534	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 4M ENT 57
PLASTIC PAINTED	WXP0504	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 4M ENT 71
PLASTIC PAINTED	WXP0514	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 4P HORIZ 71
PLASTIC PAINTED	WXP0505	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 5M ENT 71
PLASTIC PAINTED	WXP0506	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 6M ENT 57
PLASTIC PAINTED	WXP0508	EVO Profile - plastic painted 2K - PLASTIC PAINTED COPPER - 8M ENT 71
PLASTIC PAINTED	WXP0202	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 1P
PLASTIC PAINTED	WXP0212	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 2P HORIZ 71
PLASTIC PAINTED	WXP0222	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 2P VERT 57
PLASTIC PAINTED	WXP0242	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 2P VERT 71
PLASTIC PAINTED	WXP0213	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 3P HORIZ 71
PLASTIC PAINTED	WXP0223	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 3P VERT 57
PLASTIC PAINTED	WXP0243	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 3P VERT 71
PLASTIC PAINTED	WXP0234	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 4M ENT 57
PLASTIC PAINTED	WXP0204	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 4M ENT 71
PLASTIC PAINTED	WXP0214	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 4P HORIZ 71
PLASTIC PAINTED	WXP0205	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 5M ENT 71
PLASTIC PAINTED	WXP0206	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 6M ENT 57
PLASTIC PAINTED	WXP0208	EVO Profile - plastic painted 2K - PLASTIC PAINTED MISTRAL - 8M ENT 71
PLASTIC PAINTED	WXP0902	PLASTIC PAINTED NEW TAUPE - 1P
PLASTIC PAINTED	WXP0912	PLASTIC PAINTED NEW TAUPE - 2P HORIZ 71
PLASTIC PAINTED	WXP0922	PLASTIC PAINTED NEW TAUPE - 2P VERT 57
PLASTIC PAINTED	WXP0942	PLASTIC PAINTED NEW TAUPE - 2P VERT 71
PLASTIC PAINTED	WXP0913	PLASTIC PAINTED NEW TAUPE - 3P HORIZ 71
PLASTIC PAINTED	WXP0923	PLASTIC PAINTED NEW TAUPE - 3P VERT 57
PLASTIC PAINTED	WXP0943	PLASTIC PAINTED NEW TAUPE - 3P VERT 71
PLASTIC PAINTED	WXP0934	PLASTIC PAINTED NEW TAUPE - 4M ENT 57
PLASTIC PAINTED	WXP0904	PLASTIC PAINTED NEW TAUPE - 4M ENT 71
PLASTIC PAINTED	WXP0914	PLASTIC PAINTED NEW TAUPE - 4P HORIZ 71
PLASTIC PAINTED	WXP0905	PLASTIC PAINTED NEW TAUPE - 5M ENT 71

Rocker references		
Image	Product Description	Module nbr
	WXD000xx Rocker standard	2 module
	WXD001xx Rocker with light indicator	2 module
	WXD002xx Rocker with FPL	2 module
	WXD003xx Rocker VMC	2 module
	WXD004xx Rocker 0-1 Marking	2 module
	WXD010xx Rocker standard	1 module
	WXD011xx Rocker with light indicator	1 module
	WXD012xx Rocker with FPL	1 module
	WXD013xx Rocker 0-1 Marking with light	2 module

	<p>WXD300xx Rockers for shutter switch with arrow up-down</p>	<p>2 module</p>	
	<p>WXD301xx Rockers for shutter push-button with arrow up-down-stop</p>	<p>2 module</p>	

MARKING		
8.1	General	
	Switches are marked with:	
	a) rated current(s) (A or AX).....: 10AX	P
	b) rated voltage(s) (V).....: 250	P
	c) symbol for nature of supply: ~	P
	d) manufacturer's or responsible vendor's name, trade mark or identification mark: HAGER	P
	e) type reference.....: see "General product information"	P
	f) symbol for mini-gap construction (m)	N/A
	g) symbol for micro-gap construction (μ)	
	h) symbol for semiconductor switching device (without contact gap) (ϵ)	N/A
	i) first IP characteristic numeral, if declared higher than 4, in which case the second characteristic numeral is also marked	N/A
	j) second IP characteristic numeral, if declared higher than 2, in which case the first characteristic numeral is also marked	N/A
	i & j) suitable for smooth and even wall only (IPXX)	N/A
	i & j) suitable for smooth and even wall and for rough wall (test wall of figure 21) ()	N/A
	k) length of insulation to be removed before the insertion of the conductor into the screwless-type terminal	N/A
	l) symbol for the suitability to accept rigid conductors only (r)	N/A
	In addition the following information shall be given in the manufacturer's documentation:	
	m) for SBL loads: the rated power in watts and the type of load if the switch is tested according to 19.3.:	P
8.2	Symbols	
	Symbols used: as required in the standard	P
	The symbol "AX" may be replaced by the symbol "X". For the marking with rated current and rated voltage the figures may be used alone	P
	The marking for the nature of supply shall be placed next to the marking for rated current and rated voltage	P
8.3	Visibility of markings	
	Markings are clearly visible with normal or corrected vision, without additional magnification	P

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Markings as given in 8.1 a), b), c), d), e) and, if applicable, f), g), h), k), and l) shall be placed on the main part of the switch		P
	Parts such as cover plates, which are necessary for safety purposes and are intended to be sold separately, are marked with the manufacturer's or responsible vendor's name, trade mark or identification mark and type reference		P
	Markings as given in 8.1 i) and j), when applicable, are marked so as to be easily discernible when the switch is mounted and wired as in normal use		N/A
	Markings are placed on parts which cannot be removed without the use of a tool		P
8.4	Marking on terminals for phase conductors		
	Terminals intended for the connection of phase conductors (supply conductors) are identified unless the method of connection is of no importance, is self-evident or is indicated on a wiring diagram		P
	Indications not placed on screws or other easily removable part		P
	Alternatively, the surface of such terminals shall be bare brass or copper, other terminals being covered with a metallic layer of another colour		N/A
	For switches of pattern numbers 2, 3, 03 and 6/2, terminals associated with any one pole have similar identification, if applicable, differing from that of the terminals associated with the other poles, unless the relationship is self-evident		P
8.5	Marking on terminals for neutral and earth conductors		
	Neutral terminals: N.....:		P
	Earthing terminals: [earth symbol (IEC 60417-5019:2006-08)]		N/A
	Markings not placed on screws or other easily removable parts		P
	Terminals for conductors not forming part of the main function of the switch:		
	- clearly identified unless their purpose is self-evident, or		P
	- indicated in a wiring diagram fixed to the accessory		P
	Identification of switch terminals may be achieved by:		
	- their marking with graphical symbols according to IEC 60417 or colours and/or alphanumeric system, or		P
	- their physical dimension or relative location		P
8.6	Marking of the switch position		

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Switches marked to indicate the switch position: they are so marked that the direction of movement of the actuating member to its different positions or the actual position is clearly indicated.....:		P
	Switches having more than one actuating member: marking indicates the effect achieved by the operation		P
	Marking clearly visible on the front of the switch		P
	Not possible to fix cover, cover plate, or removable actuating members in an incorrect position		P
	Symbols for "on" and "off" not used for indication of switch positions unless clearly indicate the direction of movement of the actuating members		P
8.7	Additional requirements for marking		
	Special precautions necessary to take when installing the switch: details of these and clear information given in an instruction sheet which accompanies the switch		P
	Instruction sheets are written in the official language(s) of the country in which the switch is to be sold		P
8.8	Durability		
	Marking durable and easily legible. Test: 15 s with water and 15 s with 95 % n-hexane.		P
9	CHECKING OF DIMENSIONS		
	Switches and boxes comply with the appropriate standard sheets, if any		N/A
10	PROTECTION AGAINST ELECTRIC SHOCK		
10.1	Prevention of access to live parts		
	Switches: live parts not accessible		P
	Switches designed to be fitted with pilot lights supplied at voltage other than ELV have means to prevent direct contact with the lamp		N/A
	Specimen is mounted as in normal use and fitted with conductors as specified		P
	Test probe B of IEC 61032 is applied in every possible position, an electrical indicator with a voltage between 40 V and 50 V being used to show contact with the relevant part		P
	Switches having enclosures or covers in thermoplastic or elastomeric material: additional test carried out at 35 °C ± 2 °C. Switches are subjected for 1 min to a force of 75 N, applied through the tip of test probe 11 of IEC 61032		N/A
	Test finger applied to thin-walled knock-outs with a force of 10 N		P

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	During the test: switches not deform and no live parts accessible with test probe 11 of IEC 61032		P
10.2	Requirements for operating parts		
	Knobs, operating levers, push buttons, rockers and the like: of insulating material, unless:		P
	- accessible metal parts separated from metal parts of mechanism by double or reinforced insulation, or		N/A
	- reliably connected to earth		N/A
	Requirement does not apply to removable keys or intermediate parts, such as chains or rods		N/A
10.3	Requirements for accessible metal parts		
10.3.1	Accessible parts of switches when in normal use are made of insulating material as specified.		P
10.3.2	Metal covers or cover plates are protected by supplementary insulation made by insulating linings or insulating barriers.		N/A
	Insulating linings or insulating barriers:		
	- cannot be removed without being permanently damaged, or designed that		N/A
	- cannot be replaced in an incorrect position; if they are omitted, accessories are rendered inoperable or manifestly incomplete; there is no risk of accidental contact between live parts and metal covers or cover plates; precautions are taken to prevent creepage distances or clearances becoming less than the values specified in clause 23		N/A
	Linings or barrier comply with the tests of clauses 16 and 23		N/A
10.3.3	Earthing of metal covers or cover plates: connection of low resistance		N/A
10.4	Requirements for insulation of the mechanism		
	Metal parts of the mechanism which are not insulated from live parts: not protrude from enclosure		P
	Switches operated by means of a removable key or similar device: metal parts of mechanism insulated from live parts		N/A
10.5	Requirements for insulation of the mechanism with respect to the surrounding environment		
	Metal parts of mechanism not accessible and insulated from accessible metal parts, unless		N/A
	- separated from live parts (creepage distances and clearances have at least twice the value specified in clause 23), or		N/A
	- reliably connected to earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Unenclosed stack-type switches having a metal spindle pivoting in a metal base plate: creepage distances and clearances between live parts and the spindle, and between metal parts of the mechanism and base plate, have at least twice the values specified in clause 23		N/A
10.6	Requirements for switches operated indirectly		
	Switches operated by means of a removable key or an intermediate part: key or an intermediate part can only touch parts which are insulated from live parts		N/A
	Key or intermediate part: insulated from metal parts of mechanism, unless		N/A
	Creepage distances and clearances between live parts and metal parts of mechanism have at least twice the values specified in clause 23		N/A
10.7	Requirements for switches with replaceable pull cord		
	Cord-operated switches: impossible to touch live parts when fitting or replacing the pull cord		N/A
11	PROVISION FOR EARTHING		
11.1	General		
	Accessible metal parts: provided with, or permanently and reliably connected to, an earthing terminal (does not apply to the metal cover plates mentioned in 10.3.2)		N/A
	Small screws and the like, isolated from live parts, are not considered as accessible parts which can become live in the event of an insulation fault		N/A
11.2	Earthing terminals		
	Earthing terminals: with screw clamping or screwless terminals and comply with clause 12		N/A
11.3	Requirements for surface-type switches		
	Surface-type switches with an enclosure of insulating material, with IP > X0 and more than one cable inlet, are provided with:		
	- an internal fixed earthing terminal, or		N/A
	- adequate space for a floating terminal allowing the connection of an incoming and outgoing conductor		N/A
11.4	Test for earthing connection		
	Connection between earthing terminal and accessible metal parts: of low resistance		N/A
	Test current equal to 1,5 In or 25 A (A)		
	Resistance ≤ 0,05 Ω (Ω)		
12	TERMINALS		

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Clause	Requirement + Test	Result - Remark	Verdict
12.1	General		
	Switches provided with screw-type terminals or with screwless terminals		P
	Clamping means of terminals: not serve to fix any other components		P
	All the test on terminals, with the exception of the test of 12.3 11, made after the test of 15.1		P
	Rigid solid conductors shall be of class 1, rigid stranded conductors shall be of class 2 and flexible conductors shall be of class 5 according to IEC 60228		P
12.2	Terminals with screw clamping for external copper conductors		
12.2.1	Terminals with screw clamping having cross-sectional areas as shown in Table 4		N/A
	- for rigid copper conductors only, or		N/A
	- for both rigid and flexible copper conductors (tests carried out with rigid and then repeated with flexible conductors)		N/A
	Rated current (A)		
	Type of conductor (rigid / flexible)		
	Smallest / largest cross-sectional area (mm ²)		
	Diameter of largest conductor (mm)		
	Figure of terminal	1 / 2 / 3 / 4 / 5	
	Minimum diameter D (minimum dimensions) of conductor space: required (mm); measured (mm).....		N/A
12.2.2	Terminals allow the conductor to be connected without special preparation		N/A
12.2.3	Terminals with screw clamping 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 with screw clamping are resistant to corrosion		N/A
12.2.5	Terminals with screw clamping clamp the conductor(s) without undue damage to the conductor(s)	See appended table 12.2.5	N/A
	For screws having a hexagonal head with slot for tightening, test shall be made twice, first the torque applying to the hexagonal head and then applying the torque by means of a screwdriver		N/A
	During the test: conductor not slip out, no break near clamping unit and no damage		N/A
12.2.6	Terminals with screw clamping clamp the conductor reliably between metal surfaces	See appended table 12.2.6	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	During the test: conductor not move noticeably		N/A
12.2.7	Terminals with screw clamping are designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened	See appended table 12.2.7	N/A
	After the test: no wire of the conductor escaped outside the clamping unit thus reducing creepage distances and clearances to values lower than those indicated in table 23		N/A
12.2.8	Terminals not work loose from their fixing to the switch		N/A
	Movement of the terminal is allowed as long as it is sufficiently limited so as to prevent noncompliance with this document		N/A
	Use of sealing compound or resin is considered to be sufficient, provided that:		
	- the sealing compound or resin is not subject to stress during normal use, and		N/A
	- the effectiveness of the sealing compound or resin is not impaired by temperatures attained by the terminal		N/A
	Torque test:		
	- rated current (A)		
	- solid rigid copper conductor of the largest cross-sectional area (mm ²) (table 4)		
	- torque (Nm) (table 5 or appropriate figures 1, 2, 3, 4)		
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no damage		N/A
12.2.9	Clamping screws or nuts of earthing terminals: adequately locked against accidental loosening, not possible to loosen them without the aid of a tool		N/A
12.2.10	Earthing terminals: no risk of corrosion		N/A
	Body of brass or other metal no less resistant to corrosion		N/A
	If the body is a part of a frame or enclosure of aluminium alloy, precautions are taken to avoid the risk of corrosion		N/A
12.2.11	Pillar terminals: distance g no less than the value specified in figure 1: required (mm); measured (mm):		N/A
	Mantle terminals: distance g no less than the value specified in figure 5: required (mm); measured (mm):		N/A
12.2.12	Lug terminals:		N/A
	- used only for switches having rated current ≥ 40 A		N/A
	- fitted with spring washers or equally effective locking means		N/A
12.3	Screwless terminals for external copper conductors		

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Clause	Requirement + Test	Result - Remark	Verdict
12.3.1	Screwless terminals of the type suitable for:		
	- for rigid copper conductors only, or		N/A
	- for both rigid and flexible copper conductors (tests carried out with rigid and then repeated with flexible conductors)		P
	12.3 is not applicable to switches provided with		
	- screwless terminals requiring the fixing of special devices to the conductors before clamping in the screwless terminal		N/A
	- screwless terminals requiring twisting of the conductors		N/A
	- screwless terminals providing direct contact to the conductors by means of edges or points penetrating the insulation		N/A
12.3.2	Screwless terminals provided with clamping units which allow the proper connection of rigid or of rigid and flexible conductors having nominal cross-sectional areas as shown in table 8		P
	Rated current (A): 10		
	Type of conductor (rigid / flexible): RIGID AND FLEXIBLE		
	Smallest / largest cross-sectional area (mm ²): 1,5/2,5		
	Diameter of largest rigid conductor (mm): 2,13		
	Diameter of largest flexible conductor (mm).....: 2,21		
12.3.3	Screwless terminals allow the conductor to be connected without special preparation		P
12.3.4	Parts of screwless terminals intended for carrying current of materials as specified in 22.5		P
12.3.5	Screwless terminals clamp specified conductors with sufficient contact pressure without undue damage to the conductor		P
	Conductor clamped between metal surfaces		P
12.3.6	It is clear how the connection and disconnection of the conductors is to be made		P
	Disconnection of a conductor require an operation, other than a pull, so that can be made manually with or without a general-purpose tool		P
	It is not possible to confuse the opening for the use of a tool with the opening intended for the conductor		P
12.3.7	Screwless terminals intended for the interconnection of two or more conductors:		
	- the clamping of one of the conductors is independent of the clamping of the other conductor(s)		P
	- during the connection or disconnection the conductors can be connected or disconnected either at the same time or separately		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- each conductor introduced in a separate clamping unit		P
	It is possible clamp securely any number of conductors up to the maximum as designed. Number of conductors; Nominal cross-sectional area (mm ²): 2 X2.5		P
12.3.8	Screwless terminals: adequate insertion obvious and over-insertion prevented		P
	Screwless terminals of switches: undue insertion of the conductor prevented by a stop if further insertion is liable to reduce creepage distances and/or clearances required in table 23, or to influence the mechanism		P
12.3.9	Screwless terminals properly fixed to the switch		P
	Not work loose when conductors are connected or disconnected		P
	Self-hardening resins used to fix terminals which are not subject to mechanical stress		N/A
12.3.10	Screwless terminals withstand mechanical stresses occurring in normal use	See appended table 12.3.10	P
	During application of the pull, conductor not come out of the terminal		P
	Test with apparatus shown in figure 9	See appended table 12.3.10	P
	During the test conductors not move noticeably in the clamping unit		P
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		P
12.3.11	Screwless terminals withstand electrical and thermal stresses occurring in normal use	See appended table 12.3.11	P
	After the test: inspection show no changes		P
	Repetition of test according to 12.3.10: screwless terminals withstand mechanical stresses occurring in normal use	See appended table 12.3.11	P
	During application of the pull conductor not come out of the terminal		P
	Test with apparatus shown in figure 10	See appended table 12.3.11	P
	- measured after 24 th and 192 th temperature cycle		P
	- measured after any three of 48 th , 72 th , 96 th , 120 th , 144 th or 168 th temperature cycle		P
	During the test conductors not move noticeably in the clamping unit		P
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		P

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Clause	Requirement + Test	Result - Remark	Verdict
12.3.12	Screwless terminals: connected rigid solid conductor remains clamped, even when deflected during normal installation	See appended table 12.3.12	P
13	CONSTRUCTIONAL REQUIREMENTS		
13.1	Mechanical requirements for insulating means		
	Insulating lining, barriers and like: adequate mechanical strength and secured in a reliable manner		P
13.2	Installation requirements		
	Switches constructed so as to permit:		
	- easy introduction into the terminal and reliable connection of the conductors in the terminals, except for lead wires of pilot lights		P
	- correct positioning of the conductors		P
	- easy fixing of the switch to a wall or in a box		P
	- adequate space between the underside of the main part and the surface on which the main part is mounted or between the sides of the main part and the enclosure (cover or box)		P
	Surface-type switches: fixing means do not damage insulation of the cable		P
	Switches comprising screwless terminals: connecting and/or disconnecting means of the screwless terminals cannot be activated by the conductors during and after installation of the switch in a box or on a wall		P
	Compliance is checked by inspection and in case of doubt by the following test		P
	The test is carried out with a solid copper conductor having the smallest cross-sectional area, as specified in 12.3.2 (mm ²)		P
	If it is not possible to exert a force onto the connecting / disconnecting means, the product is deemed to comply with the requirements of this sub clause without further tests		P
	During the application of the pull, the conductor do not come out of the screwless terminal		P
	Switches classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors or activating the connecting and/or disconnecting means of screwless terminals		P
13.3	Fixing of covers, cover plates and actuating members		
13.3.1	Covers, cover-plates and actuating members or parts of them intended to ensure protection against electric shock:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- held in place at two or more points by effective fixings		P
	- 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
	Where the fixing of covers, cover plates or actuating members of switches of design A serves to fix the main part there are means to maintain the main part in position, even after removal of the covers, cover plates or actuating members.		N/A
13.3.2	Covers, cover plates or actuating members whose fixing is of the screw-type:		
	Compliance checked by inspection only		N/A
13.3.3	Covers, cover plates or actuating members whose fixing is not dependent on screws and whose removal is obtained by applying a force in a direction approximately perpendicular to the mounting / supporting surface (see table 12):		
	- when their removal may give access, with the test probe B of IEC 61032, to live parts:	by the tests of 20.5	N/A
	- when their removal may give access, with the test probe B of IEC 61032, to non-earthed metal parts separated from live parts in such a way that creepage distances and clearances have the values at least equal to those shown in table 23:	by the tests of 20.6	N/A
	- when their removal may give access, with the test probe B of IEC 61032, only to	by the tests of 20.7	N/A
	- insulating parts, or		N/A
	- earthed metal parts, or		N/A
	- metal parts separated from live parts in such a way that creepage distances and clearances have at least twice the values shown in table 23, or		N/A
	- live parts of SELV circuits not greater than 25 V AC and 60 V DC:		N/A
13.3.4	Covers, cover-plates or actuating members whose fixing is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's instructions given in an instruction sheet or catalogue:		
	By the same tests of 13.3.3 except that the covers, cover plates, actuating members or parts of them need not come out when applying a force not exceeding 120 N in directions perpendicular to the mounting / supporting surface		N/A
13.4	Openings in normal use		
	Switches: no free openings in their enclosures according to their IP classification		N/A
13.5	Attachment of knobs		
	Knobs of rotary switches securely attached to the shaft or part operating the mechanism		N/A
	- axial pull be applied for 1 min to try to pull off the actuating member		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- axial pull is likely to be applied in normal use, the force is 30 N		N/A
	- axial pull is unlikely to be applied in normal use, the force is 15 N		N/A
	- knob of switches having only one direction of operation: turned 100 times in the reverse direction		N/A
	During the test: knob not become detached		N/A
13.6	Mounting means		
	Screws or other means for mounting the switch on a surface or in a box or enclosure: easily accessible from the front		N/A
	Fixing means not serve any other fixing purpose		N/A
13.7	Combination of switches		
	Combinations of switches, or of switches and socket-outlets, comprising separate bases: correct position of each main part is ensured		N/A
	Fixing of each main part be independent of the fixing of the combination to the mounting surface		N/A
13.8	Accessories combined with switches		
	Accessories combined with switches: comply with their standard		N/A
13.9	Surface-type switches having an IP code higher than IP20		
	Surface-type switches with IP > 20 are in according to their classification when fitted with conduits or with sheathed cables		N/A
	Surface-type switches with IPX4, IPX5 and IPX6 have provisions for opening a drain hole		N/A
	Switches provided with a drain hole: it is not less than 5 mm in diameter, or 20 mm ² in area with a width and a length not less than 3 mm.....: Ø mm / mm ²		N/A
	Drain hole: effective		N/A
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
13.10	Installation in a box		
	Switches to be installed in a box: conductor ends can be prepared after the box is mounted in position, but before the switch is fitted in the box		N/A
	Main part has adequate stability when mounted in the box		N/A
13.11	Connection of a second current-carrying conductor		
	Surface-type switches with IP > IPX0, pattern numbers 1, 5 and 6, with more than one inlet opening, provided with:		
	- fixed additional terminal complying with the requirements of clause 12, or		N/A
	- adequate space for a floating terminal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
13.12	Inlet openings		
	Inlet openings: allow the introduction of the conduit or the sheath of the cable		N/A
	Surface-type switches: intended conduit or the sheath of the cable can enter at least 1 mm into the enclosure		N/A
	Inlet openings for conduit entries of surface-type switches: capable of accepting conduit sizes of 16, 20, 25 or 32 or a combination of at least two of these sizes not excluding two of the same size		N/A
	Inlet openings for cable entries of surface-type switches: capable of accepting cables having the dimensions specified in table 13 or be as specified by the manufacturer: rated current (A); limits of external diameter of cables min/max (mm).....		N/A
13.13	Provision for back entry from a conduit		
	Surface-type switches: provision for back entry (if are intended)		N/A
13.14	Switch provided with membranes or the like for inlet openings		
	Switch is provided with membranes or the like for inlet openings: replaceable		N/A
13.15	Requirements for membranes in inlet openings		
13.15.1	Membranes are 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 15.1 and fitted with the switches		
	Switches placed at 40 °C for 2 h. Force of 30 N applied for 5 s by means of the tip of test probe 11 of IEC 61032. During the test: no deformation, live parts not accessible		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
	Test repeated with membranes not subjected to any treatment		N/A
13.15.2	Membranes be so designed and made of such material that: Introduction of the cables into the switch is permitted when the ambient temperature is low.		N/A
	Test on membranes not subjected to the ageing treatment, those without opening being suitably pierced:		
	Switches kept at a temperature of (-15 ± 2) °C for 2 h: possibility to introduce cables of the heaviest type through the membranes		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.16	Pilot light units		

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Clause	Requirement + Test	Result - Remark	Verdict
	Pilot light units comply with IEC 60669-2-1:2002, IEC 60669-2-1:2002/AMD1:2008 and IEC 60669-2-1:2002/AMD2:2015, 101.1.1.1 and Clause 102, as far as applicable		N/A
14	MECHANISM		
14.1	Indication of the position		
	Actuating member of a switch, when released, automatically take up the position corresponding to that of moving contacts		P
14.2	Rest and intermediate position		
	Moving contact of switches can come to rest only in "on" and "off" positions		P
	Intermediate position permissible if:		
	- it corresponds to the intermediate position of the actuating member, and		N/A
	- the insulation between fixed and moving contacts is adequate. Electric strength test as specified in 16.3: test voltage a.c. for 1 min (V).....	500 V / 750 V / 1250 V / 2000 V	N/A
14.3	Undue arcing		
	No undue arcing in slowly operation		P
	Test carried out at the end of the test of clause 19.1: breaking of the circuit 10 times, actuating member moved over a period of 2 s. During the test: no sustained arcing		P
14.4	Making and breaking		
	Switches of pattern numbers 2, 3, 03 and 6/2 make and break all poles substantially simultaneously		P
	Neutral pole of switches of pattern number 03 not make after or break before the other poles		N/A
14.5	Action of the mechanism without cover or cover plate		
	Action of the mechanism: independent of the presence of cover or cover plate. Test: no flicker		N/A
14.6	Cord-operated switches: effecting a change by application and removal of a steady pull not exceeding:		
	- 45 N applied vertically, and		N/A
	- 65 N applied at 45° ± 5°		N/A
15	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES OF SWITCHES, AND RESISTANCE TO HUMIDITY		
15.1	Resistance to ageing		
	Switches are resistant to ageing		P
	Parts intended for decorative purposes only, such as certain lids, are removed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Switches and boxes placed for 7 days (168 h) in a heating cabinet at 70 °C ± 2 °C		P
	- no crack visible after test with normal or corrected vision without additional magnification		P
	- no sticky or greasy material as a result of heat		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no damage		P
15.2	Protection provided by enclosures of switches		
15.2.1	General		
	Enclosure of the switch provides protection against access to hazardous parts, against harmful effect due to ingress of solid foreign objects and against effects due to ingress of water in accordance with the IP classification of the switch		P
15.2.2	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		
15.2.2.1	General		
	Glands: torque (Nm) (2/3 of torque applied in 20.4) :		
	Screws of the enclosure: torque (Nm) (2/3 table 5)		
	Parts which can be removed without the aid of a tool are removed		N/A
	Glands are not filled with sealing compound or the like		N/A
15.2.2.2	Protection against access to hazardous parts		
	Appropriate test according to IEC 60529	IP 2X	P
15.2.2.3	Protection against harmful effects due to ingress of solid foreign objects		
	Appropriate test according to IEC 60529	IP	N/A
	For the test of the first characteristic numeral 5, enclosures of switches are considered to be of category 2 (see IEC 60529:1989 and IEC 60529:1989/AMD1:1999, 13.4); dust not penetrate in a quantity to interfere with satisfactory operation or impair safety		N/A
	For the test of the first characteristic numeral 6, enclosures of switches are considered to be of category 1 (see IEC 60529:1989, 13.6); no dust penetrate		N/A
15.2.3	Protection against harmful effects due to ingress of water		
	Enclosure of switches provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification		N/A
	Appropriate test according to IEC 60529	IP	N/A
	Flush-type and semi-flush-type switches fixed:		
	- in a test wall using an appropriate box in accordance with the manufacturer's instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- in a test wall according to figure 21		N/A
	Screws of the enclosure: torque (Nm) (2/3 table 5)		
	Glands: torque (Nm) (2/3 of torque applied in table 22)		
	Specimens withstand an electric strength test specified in 16.3 which is started within 5 min of completion of the test to 15.2		N/A
15.3	Resistance to humidity		
	Switches proof against humidity which may occur in normal use		P
	Compliance checked by a humidity treatment described in 15.3, carried out in a humidity cabinet containing air with relative humidity maintained between 91 % and 95 %. Specimens kept in the cabinet for:		
	- 2 days (48 h) for switches with IPX0		P
	- 7 days (168 h) for switches with IP>X0		N/A
	After this treatment: specimens show no damage		P
16	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
16.1	General		
	One pole of any pilot lights (if available), are disconnected for this test		P
	Insulation resistance and electric strength of switches be adequate		P
16.2	Test for measuring the insulation resistance		
	The insulation resistance measured 1 min after application of 500 V DC	See appended table 16.2	P
	In addition, if electrically independent pattern numbers are combined in a common base, additional tests for each combination performed		N/A
16.3	Electric strength test		
	Electric strength: AC test voltage applied for 1 min	See appended table 16.3	P
	In addition, if electrically independent pattern numbers are combined in a common base, additional tests for each combination performed		N/A
17	TEMPERATURE RISE		
17.1	General		
	Switches so constructed that the temperature rise in normal use is not excessive	See appended table 17	P
	No oxidation or any other deterioration of contacts		P
17.2	Switches incorporating pilot lights		
	Switches incorporating or intended to incorporate pilot lights are designed that in normal use temperature of the accessible surface is not excessive	See appended table 17	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
18	MAKING AND BREAKING CAPACITY		
18.1	General		
	For the purpose of this test, pilot lights are disconnected		P
	Switches have adequate making and breaking capacity		P
	- model / type reference.....	See table "Summary of testing"	
	- pattern number	See table "Summary of testing"	
	- rated voltage (V)	250	
	- rated current (A)	10	
	- nominal cross-sectional area as for the test of clause 17 (mm ²)	2.5 (mm ²)	
18.2	Overload		
	Test with cos φ 0,3 alternating current		
	- test voltage (1,1 Vn) (V)	275	
	- test current (1,25 In) (cos φ 0,3) (A)	12.5	
	- 200 operations; rate (operations per minute)	30	
	- samples number	See table "Summary of testing"	
	During the test: copper wire F not melt, specimens function correctly, no sustained arcing or welding of contacts		P
	After the test: specimens show no damage		P
	During the test: specimens are not lubricated		P
18.3	Overload test with filament lamps		
	Test with a number of tungsten filament lamps or a number of halogen filament lamps (switches with In ≤ 16 A / Vn ≤ 250 V and switches of pattern numbers 3 and 03 with Vn > 250 V)		
	- test voltage (Vn) (V).....	250	
	- test current (≥ 1,2 In) (A)	12	
	- number of 200 W tungsten filament lamps.....	14	
	- 200 operations; rate (operations per minute)	30	
	- samples number	See table "Summary of testing"	
	During the test: copper wire F not melt, specimens function correctly, no sustained arcing or welding of contacts		P
	After the test: specimens show no damage		P

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Clause	Requirement + Test	Result - Remark	Verdict
19	NORMAL OPERATION		
19.1	Test for switches intended for inductive loads		
	For the purpose of this test, pilot lights are disconnected		P
	Switches withstand, without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	- model / type reference.....	See table “ Summary of testing ”	
	- pattern number	See table “ Summary of testing ”	
	- nominal cross-sectional area per clause 18 (mm ²):	2.5	
	- test voltage (Vn) (V).....	250	
	- test current (In) (cos φ 0,6) (A)	10	
	- number of operations per table 18.....	See table “ Summary of testing ”	
	- rate (operations per minute).....	30	
	- samples number	See table “ Summary of testing ”	
	During the test: copper wire F not melt, specimens function correctly, no sustained arcing or welding of contacts		P
	Reduced electric strength per clause 16	See appended table 19.1	P
	Reduced temperature rise test per clause 17	See appended table 19.1	P
	After the tests the specimens not show:		
	- wear impairing their further use		P
	- discrepancy between the position of the actuating member (if indicated) and that of the moving contacts		P
	- deterioration of enclosures, insulating lining or barriers		P
	- seepage of sealing compound		P
	- loosening of electrical or mechanical connections		P
	- displacement of moving contacts of switches pattern number 2, 3, 03 or 6/2		P
	During the test, specimens are not lubricated		P
	No sustained arcing in slowly operation (sub clause 14.3)		P
19.2	Test for switches intended for externally ballasted lamp loads		
	Switches intended for externally ballasted lamp loads withstand, without excessive wear or other harmful effect, the electrical and thermal stresses occurring when controlling externally ballasted lamp circuits		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- model / type reference.....	See table “ Summary of testing ”	
	- pattern number	See table “ Summary of testing ”	
	- nominal cross-sectional area per clause 18 (mm ²):	2.5	
	- rate (operations per minute).....	30	
	- test voltage (Vn); test current (In) (cos φ 0,9); number of operations with load A.....	250	
	- test voltage (Vn); 100 operations with load B	N/A	
	- samples number	See table “ Summary of testing ”	
	During the test: copper wire F not melt, specimens function correctly, no sustained arcing or welding of contacts		P
	Reduced electric strength per clause 16	See appended table 19.2	P
	Reduced temperature rise test per clause 17	See appended table 19.2	P
	After the tests it is possible to make and break the switch by hand, and specimen not show:		
	- wear impairing their further use		P
	- discrepancy between the position of the actuating member (if indicated) and that of the moving contacts		P
	- deterioration of enclosures, insulating lining or barriers		P
	- loosening of electrical or mechanical connections		P
	- seepage of sealing compound		P
	- displacement of moving contacts of switches pattern number 2, 3 or 6/2		P
19.3	Test for switches intended for self-ballasted lamp loads		
	Switches intended for self-ballasted lamp (SBL) loads withstand, without excessive wear or other harmful effect, the electrical and thermal stresses occurring when controlling self-ballasted lamp circuits		P
	- model / type reference.....	See table “ Summary of testing ”	
	- pattern number	See table “ Summary of testing ”	
	- nominal cross-sectional area per clause 18 (mm ²):	2.5	
	- test voltage (Vn) (V).....	250	
	- test current (In) (A).....	10	
	- number of operations per table 18.....	See table “ Summary of testing ”	
	- rate (operations per minute).....	30	

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Clause	Requirement + Test	Result - Remark	Verdict
	- samples number	See table "Summary of testing"	
	During the test: copper wire F not melt, specimens function correctly, no sustained arcing or welding of contacts		P
	Reduced electric strength per clause 16	See appended table 19.3	P
	Reduced temperature rise test per clause 17	See appended table 19.3	P
	After these tests, it is possible to make and break the switch by hand in the test circuit and the specimen not show:		
	- wear impairing further use		P
	- discrepancy between the position of the actuating member and that of the moving contacts		P
	- deterioration of the enclosures, insulating lining or barriers		P
	- loosening of electrical or mechanical connections		P
	- seepage of sealing compound		P
	- displacement of the moving contacts of switches of pattern numbers 2, 3 or 6/2		P
20	MECHANICAL STRENGTH		
20.1	General		
	Accessories, surface mounting boxes, screwed glands and shrouds have adequate mechanical strength so as to withstand the stresses imposed during installation and use		P
20.2	Pendulum hammer test		
	For all types of switches and for boxes: impact test (9 blows)	See appended table 20.2	P
	After the test: no damage, live parts no become accessible		P
20.3	Test on the main parts of surface-type switches		
	Main parts of surface-type switches are first fixed to a cylinder of rigid steel sheet of radius equal to 4,5 times the distance between fixing holes (mm)....:		N/A
	Main parts are then fixed in a similar manner to a flat steel sheet		N/A
	Torque applied to fixing screws (Nm)	0,5 Nm / 1,2 Nm	
	During and after the test: main parts show no damage		N/A
20.4	Screwed glands		
	Screwed glands of switches with that have IP code higher than IP20: torque test		
	- diameter of cylindrical metal test rod (mm)		
	- type of material	metal / moulded material	
	- torque for 1 min (table 22) (Nm)		

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: no damage of glands and enclosure of the specimens		N/A
20.5	Covers, cover plates or actuating members – accessibility to live parts		
20.5.1	General		
	Force necessary for covers, cover-plates or actuating members to come off or not to come off (accessibility with the test finger to live parts)		
20.5.2	Verification of the non-removal of covers, cover-plates or actuating member		
	Force applied for 1 min in direction perpendicular to the mounting surface	40 N / 80 N	N/A
	Covers, cover-plates or actuating members not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 13)		N/A
	Covers, cover-plates or actuating members not come off		N/A
	After the test: no damage		N/A
20.5.3	Verification of the removal of covers, cover plates or actuating members		
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers, cover-plates or actuating members come off		P
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 13)		P
	Covers, cover-plates or actuating members come off		P
	After the test: no damage		P
20.6	Covers, cover plates or actuating members – accessibility to non-earthed metal parts separated from live parts		
	Test is made as described in 20.5, but applying, for 20.5.2, the following forces:	10 N / 20 N	P
20.7	Covers, cover plates or actuating members – accessibility to insulating parts, earthed metal parts, the live parts of SELV ≤ 25 V AC or metal parts separated from live parts		
	Test is made as described in 20.5, but applying, for 20.5.2, the force of 10 N for all covers, cover plates, or actuating members		N/A
20.8	Covers, cover plates or actuating members – application of gauges		
	Test with gauge of figure 14 applied according to figure 15 for verification of the outline of covers, cover-plates or actuating members: distances between face C of gauge and outline of side under test, not decrease.....	complying / not complying	
20.9	Grooves, holes and reverse tapers		

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Clause	Requirement + Test	Result - Remark	Verdict
	Test with gauge according to figure 17 applied as shown in figure 18 (1 N): gauge not enter more than 1 mm.....: complying / not complying		
20.10	Additional test for cord-operated switch		
	Operating members of cord-operated switch have adequate strength		N/A
	Pull test: pull 100 N for 1 min (normal use); pull of 50 N for 1 min (unfavourable direction). After the test:		
	- switch show no damage		N/A
	- operating member not broken and cord-operated switch still operate		N/A
21	RESISTANCE TO HEAT		
21.1	General		
	Switches and boxes are sufficiently resistant to heat		P
	Decorative parts are not subjected to the test		N/A
21.2	Basic heating test		
	Switches kept for 1 h in a heating cabinet at a temperature of 100 °C ± 2 °C		
	During the test: no change impairing their further use and sealing compound, if any, not flow		P
	After the test: no access to live parts, markings still legible		P
21.3	Ball-pressure test on parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position		
	Parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position: ball-pressure test (1 h, 125 °C)	See appended table 21.3	P
21.4	Ball-pressure test on parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position		
	Parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: ball-pressure test (1 h)	See appended table 21.4	P
22	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		
22.1	General		
	Connections withstand mechanical stresses		P
	Thread-forming or thread-cutting screws used only if supplied together with the piece in which they are intended to be inserted		N/A
	Thread-cutting screws intended to be used during installation are captive with the relevant part of the accessory		N/A
	Screws and nuts which transmit contact pressure are of metal and are in engagement with a metal thread		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Threaded part torque test	See appended table 22.1	N/A
22.2	Correct insertion of screws		
	Screws in engagement with a thread of insulating material: correct introduction into the screw hole or nut ensured		N/A
22.3	Contact pressure of electrical connections		
	Contact pressure: not transmitted through insulating material other than ceramic, pure mica or other material no less suitable unless there is sufficient resiliency in metallic parts		P
22.4	Screws and rivets, used both as electrical and mechanical connections		
	Screws and rivets which serve as electrical as well as mechanical connections shall be locked against loosening and/or turning		N/A
22.5	Material of current-carrying parts		
	Current-carrying parts of metal having mechanical strength, electrical conductivity and resistance to corrosion adequate:		
	Requirement of 22.5 does not apply to screws, nuts, washers, clamping plates and similar parts of terminals		N/A
	- copper		N/A
	- alloy with at least 58 % copper for parts made from cold-rolled sheet or with at least 50 % copper for other parts		P
	- stainless steel with at least 13 % chromium and not more than 0,09 % carbon		N/A
	- steel with electroplated coating of zinc (ISO 2081): service condition ISO no. (1/2/3); IP (X0/X4/X5/X6); thickness (µm)		N/A
	- steel with electroplated coating of nickel and chromium (ISO 1456): service condition ISO no. (2/3/4); IP (X0/X4/X5/X6); thickness (µm)		N/A
	- steel with electroplated coating of tin (ISO 2093): service condition ISO no. (2/3/4); IP (X0/X4/X5/X6); thickness (µm)		N/A
	Current-carrying parts subjected to mechanical wear: not of steel with electroplated coating		P
	Metals having a great difference of electrochemical potential: not used in contact with each other		P
22.6	Contacts subjected to sliding actions		
	Contacts subjected to sliding action: of metal resistant to corrosion		P
22.7	Thread-forming and thread-cutting screws		
	Thread-forming screws and thread-cutting screws not used for the connection of current-carrying parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Thread-forming screws and thread-cutting screws used to provide earthing continuity: not necessary to disturb the connection and at least two screws are used for each connection		N/A
23	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		
23.1	General		
	Creepage distances, clearances and distances through sealing compound no less than the values shown in table 23	See appended table 23.1	P
	Sub clause 23.1 does not apply to pilot light units. Requirements for pilot light units are given in 13.16		N/A
23.2	Insulating compound		
	Insulating compound: not protrude above the edge of the cavity in which it is contained		P
24	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING		
24.1	Resistance to abnormal heat and to fire		
	Parts of insulating material which might be exposed to thermal stresses due to electric effects and the deterioration of which might impair the safety are not unduly affected by abnormal heat and fire		P
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11	See appended table 24.1	P
24.2	Resistance to abnormal heat and to fire		
	Parts of insulating material retaining live parts in position of switches with IP>X0: of material resistant to tracking		N/A
	Tracking test with solution A of IEC 60112	See appended table 24.2	N/A
25	RESISTANCE TO RUSTING		
	Ferrous parts protected against rusting		P
	Test: 10 min in a 10 % solution of ammonium chloride in water at a temperature of (+20 ± 5) °C., 10 min in a box containing air saturated with moisture at a temperature of (+20 ± 5) °C., 10 min in a heating cabinet at a temperature of (+100 ± 5) °C		
	No signs of rust		P
26	EMC REQUIREMENTS		
26.1	Immunity		
	No immunity tests necessary		
26.2	Emission		
	No emission tests necessary		

12.2.5	TABLE: Test with apparatus shown in figure 10 (screw terminals)				N/A
	Rated current (A)				
	Type of conductors		rigid solid / rigid stranded / flexible		
	Smallest/largest cross-sectional area per table 4 (mm ²).....				
	Number of conductors				
	Nominal diameter of thread (mm); torque per table 5 (Nm)				
Cross-sectional area (mm ²)	Diameter of bushing hole per table 6 (mm)	Height H per table 6 (mm)	Mass (kg)	Remarks	
<i>Supplementary information:</i>					

12.2.6	TABLE: Pull test (screw terminals)				N/A
	Rated current (A)				
	Smallest/largest cross-sectional area per table 4 (mm ²).....				
	Nominal diameter of thread (mm); torque 2/3 per table 5 (Nm)				
Cross-sectional area (mm ²)	Number of conductors	Type of conductors (rigid solid / rigid stranded / flexible)	Pull per table 7 applied for 1 min (N)	Remarks	
<i>Supplementary information:</i>					

12.2.7	TABLE: Tightening test (screw terminals)				N/A
	Rated current (A)				
	Nominal diameter of thread (mm); torque 2/3 per table 5 (Nm)				
Largest cross-sectional area per table 2 (mm ²)	Permissible number of conductors	Type of conductors (rigid solid / rigid stranded / flexible)	Number of wires and nominal diameter of wires	Remarks	
<i>Supplementary information:</i>					

12.3.10	TABLE: Mechanical stresses occurring in normal use (screwless terminals)			P
	Rated current (A)	10		
	Largest/smallest cross-sectional area per table 8 (mm ²).....	2.5/1.5		
Number of connection (after that conductor subjected to a pull of 30 N for 1 min) / disconnection	Type of conductor (solid / rigid stranded / flexible)	Cross-sectional area (mm ²)	Remarks	
5	SOLID	2,5	P	
5	SOLID	1,5	P	
5	STRANDED	2,5	P	
5	STRANDED	1,5	P	
5	FLEXIBLE	2,5	P	
5	FLEXIBLE	1,5	P	
	TABLE: Test with apparatus shown in figure 9			
	Rated current (A)	10		
	Type of conductors	rigid solid / rigid stranded / flexible		
	Smallest/largest cross-sectional area per table 8 (mm ²).....	1.5/2.5		
	number of conductors.....	2		
Cross-sectional area (mm ²)	Diameter of bushing hole per table 6 (mm)	Height H per table 6 (mm)	Mass (kg)	Remarks
2.5	9,5	280	0,7	P
1.5	6,5	260	0,4	P
<i>Supplementary information: test done on samples:17-0503 _ 17-0504 _ 17-0505 data and values from the CB TEST REPORT No. 628433/01</i>				

12.3.11	TABLE: Electrical and thermal stresses occurring in normal use			P
Test a)	Test carried out for 1 h connecting rigid solid conductors:			
	test current per table 9 (A).....	17.5		
	nominal cross-sectional area (mm ²)	1.5		
Screwless terminal number	Voltage drop (mV)		Required voltage drop	
1. 17-0500	7,0		≤ 15 mV	
2. 17-0501	6,9		≤ 15 mV	
3. 17-0502	7,5		≤ 15 mV	
4. 17-0536	7,4		≤ 15 mV	
5. 17-0537	6,1		≤ 15 mV	

Test b)	Temperature cycles test carried out on terminals subjected to Test a):					
	test current per table 9 (A).....	17.5				
	nominal cross-sectional area (mm ²)	1.5				
	allowed voltage drop (mV)	≤ 22,5 mV or 2 times 24 th cycle value (mV)				
Screwless terminal number	1 17-0500	2 17-0501	3 17-0502	4 17-0536	5 17-0537	Remarks
voltage drop after 24 th cycle	12,0	11,5	12,7	12,5	10,1	P
voltage drop after 48 th cycle	12,0	11,5	12,6	12,5	10,1	P
voltage drop after 72 th cycle	12,1	11,5	12,5	12,5	10,1	P
voltage drop after 96 th cycle	12,2	11,5	12,5	12,5	10,1	P
voltage drop after 120 th cycle	12,2	11,5	12,6	12,5	10,1	P
voltage drop after 144 th cycle	12,3	11,5	12,6	12,5	10,1	P
voltage drop after 168 th cycle	12,3	11,5	12,6	12,6	10,1	P
voltage drop after 192 th cycle	12,3	11,5	12,6	12,6	10,1	P
12.3.10	TABLE: mechanical stresses occurring in normal use					
	Rated current (A)	10				
	Largest/smallest cross-sectional area per table 8 (mm ²)	2.5/1.5				
Number of connection (after that conductor subjected to a pull of 30 N for 1 min) / disconnection	Type of conductor (solid / rigid stranded / flexible)		Cross-sectional area (mm ²)		Remarks	
5	Solid		2,5		P	
1	Rigid stranded		2,5		P	
5	flexible		2,5		P	
5	Solid		1,5		P	
1	Rigid stranded		1,5		P	
5	flexible		1,5		P	
	TABLE: Test with apparatus shown in figure 9					
	Rated current (A)	10				
	Type of conductors	rigid solid / rigid stranded / flexible				
	Smallest/largest cross-sectional area per table 8 (mm ²)	1.5/2.5				
	Number of conductors	2				
Cross-sectional area (mm ²)	Diameter of bushing hole per table 6 (mm)	Height H per table 6 (mm)	Mass (kg)		Remarks	
2,5	9,5	280	0,7		P	
1,5	6,5	260	0,4		P	
<i>Supplementary information: supplementary information: test on 17-0501 / 17-0500 / 17-0502 / 17-0536 / 17-0537 data and values from the CB TEST REPORT No. 628433/01</i>						

12.3.12	TABLE: Deflection test (principle of test apparatus shown in figure 10a)						P
Test carried out for 1 h connecting rigid solid conductors:							
test current (A) (equal rated current)					10		
required voltage drop (mV)					≤ 25 mV		
Type of conductor	Smallest			Largest			Remarks
cross-sectional area per table 10 (mm ²)	1,5mm			2,5mm			
force per table 11 (N)	0,5N			1,0N			
screwless terminal number	1	2	3	1	2	3	
starting point (X = deflection original point)	X	X+10°	X+20°	X	X+10°	X+20°	
voltage drop 1 st deflection (mV)	8,7	6,1	7,7	12,4	8,9	6,9	
voltage drop 2 nd deflection (mV)	7,5	6,3	7,5	7,3	6,4	8,4	
voltage drop 3 rd deflection (mV)	7,1	6,8	7,2	5,7	6,1	7,0	
voltage drop 4 th deflection (mV)	6,3	5,9	6,6	5,9	5,4	6,2	
voltage drop 5 th deflection (mV)	8,5	6,5	6,6	9,2	6,9	6,9	
voltage drop 6 th deflection (mV)	10,7	7,4	10,5	8,5	7,5	6,8	
voltage drop 7 th deflection (mV)	15,5	8,1	9,3	9,4	7,2	6,6	
voltage drop 8 th deflection (mV)	20,2	8,9	8,3	12,5	7,3	7,0	
voltage drop 9 th deflection (mV)	11,6	9,1	10,6	7,2	7,6	6,3	
voltage drop 10 th deflection (mV)	9,1	7,8	8,6	7,8	6,4	6,6	
voltage drop 11 th deflection (mV)	9,3	7,6	7,5	6,3	6,7	5,8	
voltage drop 12 th deflection (mV)	9,1	8,1	7,4	9,1	11,4	7,3	
<i>Supplementary information: supplementary information: test on 17-0541-17-0507-17-0508 data and values from the CB TEST REPORT No. 628433/01</i>							

16.2	TABLE: Insulation resistance		
Item per table 23	test voltage applied between:	measured (MΩ)	required (MΩ)
	All poles / body (ON)	>1000	5
	One pole / all other poles (ON)	>1000	2
	Terminals connected in on position (OFF)	>1000	2
	All poles / body (ON)	>1000	5
<p><i>Supplementary information: TEST ON:</i> <i>PATTERN NUMBER 2</i> <i>18-0710, 18-0711</i> <i>18-0712,</i> <i>PATTERN NUMBER 4</i> <i>SWITCH :</i> <i>18-0680,</i> <i>18-0681, 18-0682,</i> <i>PUSH BUTTON:</i> <i>18-0695, 18-0696,</i> <i>18-0697</i></p>			

16.3	TABLE: Dielectric strength			P
	Rated voltage (V)	250		
item per table 23	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)	
	All poles / body (ON)	2000	No	
	One pole / all other poles (ON)	2000	No	
	Terminals connected in on position (OFF)	2000	No	
<p><i>Supplementary information: Supplementary information: TEST ON:</i> <i>PATTERN NUMBER 2</i> <i>18-0710, 18-0711</i> <i>18-0712,</i> <i>PATTERN NUMBER 4</i> <i>SWITCH :</i> <i>18-0680,</i> <i>18-0681, 18-0682,</i> <i>PUSH BUTTON:</i> <i>18-0695, 18-0696,</i> <i>18-0697</i></p>				

17	TABLE: Temperature rise measurements		P
	Rated current (A)	10	
	Nominal cross-sectional area (mm ²)	2.5	
	Terminal screws: torque (Nm) (2/3 table 5)	N/A	
	Test current per table 16 passed for 1 h (A)	13.5	
	Rated voltage of pilot light (V)	250	
	Samples number	SEE TABLE	
PATTERN NUMBER 2 Sample _ thermocouple locations:		max. measured temperature rise (K)	allowed temperature rise (K)
18-0710 _1		20,4	45
18-0710 _3		22,6	45
18-0710 _2		22,0	45
18-0710 _4		25,1	45
18-0711 _1		19,7	45
18-0711 _3		25,3	45
18-0711 _2		22,3	45
18-0711 _4		25,6	45
18-0712 _1		21,2	45
18-0712 _3		25,7	45
18-0712 _2		21,5	45
18-0712 _4		24,5	45

PATTERN NUMBER 4 Sample _ thermocouple locations:	max. measured temperature rise (K)	allowed temperature rise (K)
18-0680_L	25,8	45
18-0680_1	27,8	45
18-0680_L	29,1	45
18-0680_2	33,8	45
18-0681_L	27,8	45
18-0681_1	28,7	45
18-0681_L	28,7	45
18-0681_2	36,4	45
18-0682_L	22,3	45
18-0682_1	23,2	45
18-0682_L	27,0	45
18-0682_2	27,5	45
18-0695_L	19,0	45
18-0695_1	24,1	45
18-0695_L	28,2	45
18-0695_2	34,0	45
18-0696_L	25,0	45
18-0696_1	33,1	45
18-0696_L	19,8	45
18-0696_2	22,8	45
18-0697_L	20,7	45
18-0697_1	23,5	45
18-0697_L	29,9	45
18-0697_2	37,8	45
<i>Supplementary information: for patter number 1 and 6 data and values from the CB TEST REPORT No. 628433/01</i>		

19.1	TABLE: Test for switches intended for inductive loads (clause 19.1)		P
Reduced electric strength per clause 16			
item per table 23	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
	All poles / body (ON)	1500	No
	One pole / all other poles (ON)	1500	No
	Terminals connected in on position (OFF)	1500	No
Reduced temperature rise test per clause 17			
	Rated current passed for 1 h (A).....:	10	
PATTERN NUMBER 2 Sample _ thermocouple locations:		max. measured temperature rise (K)	allowed temperature rise (K)
18-0710 _1		20,4	≤ 45
18-0710 _3		22,6	≤ 45
18-0710 _2		22,0	≤ 45
18-0710 _4		25,1	≤ 45
18-0711 _1		19,7	≤ 45
18-0711 _3		25,3	≤ 45
18-0711 _2		22,3	≤ 45
18-0711 _4		25,6	≤ 45
18-0712 _1		21,2	≤ 45
18-0712 _3		25,7	≤ 45
18-0712 _2		21,5	≤ 45
18-0712 _4		24,5	≤ 45

PATTERN NUMBER 4 Sample _ thermocouple locations:	max. measured temperature rise (K)	allowed temperature rise (K)
18-0680_L	27,8	45
18-0680_1	26,2	45
18-0680_L	24,1	45
18-0680_2	28,2	45
18-0681_L	20,9	45
18-0681_1	21,3	45
18-0681_L	21,4	45
18-0681_2	28,7	45
18-0682_L	21,2	45
18-0682_1	24,0	45
18-0682_L	25,5	45
18-0682_2	29,8	45
18-0695_L	12,3	45
18-0695_1	12,3	45
18-0695_L	16,6	45
18-0695_2	17,4	45
18-0696_L	24,5	45
18-0696_1	18,5	45
18-0696_L	27,2	45
18-0696_2	16,8	45
18-0697_L	20,3	45
18-0697_1	13,9	45
18-0697_L	17,1	45
18-0697_2	15,5	45
<i>Supplementary information: for patter number 1 and 6 data and values from the CB TEST REPORT No. 628433/01</i>		

19.2	TABLE: Test for switches intended for externally ballasted lamp loads (clause 19.2)		P
Reduced electric strength per clause 16			
item per table 23	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
	All poles / body (ON)	1500	No
	One pole / all other poles (ON)	1500	No
	Terminals connected in on position (OFF)	1500	No
Reduced temperature rise test per clause 17			
	Rated current passed for 1 h (A).....:	10	
PATTERN NUMBER 2 Sample _ thermocouple locations:		max. measured temperature rise (K)	allowed temperature rise (K)
18-0713_1		16,0	≤ 45
18-0713_3		17,5	≤ 45
18-0713_2		16,9	≤ 45
18-0713_4		20,4	≤ 45
18-0714_1		17,6	≤ 45
18-0714_3		22,4	≤ 45
18-0714_2		15,8	≤ 45
18-0714_4		19,7	≤ 45
18-0715_1		14,7	≤ 45
18-0715_3		15,5	≤ 45
18-0715_2		15,5	≤ 45
18-0715_4		18,1	≤ 45
PATTERN NUMBER 4 Sample _ thermocouple locations:		max. measured temperature rise (K)	allowed temperature rise (K)
18-0683_L		15,0	≤ 45
18-0683_1		17,8	≤ 45
18-0683_L		18,4	≤ 45
18-0683_2		20,9	≤ 45
18-0684_L		20,4	≤ 45
18-0684_1		28,1	≤ 45
18-0684_L		20,0	≤ 45
18-0684_2		26,7	≤ 45
18-0685_L		16,0	≤ 45
18-0685_1		19,4	≤ 45
18-0685_L		18,1	≤ 45
18-0685_2		19,5	≤ 45

Supplementary information: for patten number 1 and 6 data and values from the CB TEST REPORT No. 628433/01

19.3	TABLE: Test for switches intended for self-ballasted lamp loads (clause 19.3)		P
	Reduced electric strength per clause 16		
item per table 23	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
	All poles / body (ON)	1500	No
	One pole / all other poles (ON)	1500	No
	Terminals connected in on position (OFF)	1500	No
	Reduced temperature rise test per clause 17		
	Rated current passed for 1 h (A).....:	10	
PATTERN NUMBER 1 Sample _ thermocouple locations:		max. measured temperature rise (K)	allowed temperature rise (K)
18-0777_L		25,1	≤ 45
18-0777_1		24,9	≤ 45
18-0778_L		29,1	≤ 45
18-0778_1		27,2	≤ 45
18-0779_L		14,1	≤ 45
18-0779_1		12,5	≤ 45

PATTERN NUMBER 6 Sample _ thermocouple locations:	max. measured temperature rise (K)	allowed temperature rise (K)
18-0781_L	15,1	≤ 45
18-0781_1	15,2	≤ 45
18-0781_L	15,1	≤ 45
18-0781_2	13,1	≤ 45
18-0782_L	12,7	≤ 45
18-0782_1	13,0	≤ 45
18-0782_L	14,3	≤ 45
18-0782_2	14,1	≤ 45
18-0783_L	13,9	≤ 45
18-0783_1	13,8	≤ 45
18-0783_L	17,0	≤ 45
18-0783_2	16,9	≤ 45
PATTERN NUMBER 2 Sample _ thermocouple locations:	max. measured temperature rise (K)	allowed temperature rise (K)
18-0716_1	14,5	≤ 45
18-0716_3	15,0	≤ 45
18-0716_2	12,2	≤ 45
18-0716_4	15,7	≤ 45
18-0717_1	9,6	≤ 45
18-0717_3	14,2	≤ 45
18-0717_2	13,6	≤ 45
18-0717_4	13,4	≤ 45
18-0718_1	14,1	≤ 45
18-0718_3	14,8	≤ 45
18-0718_2	15,0	≤ 45
18-0718_4	14,3	≤ 45
PATTERN NUMBER 4 Sample _ thermocouple locations:	max. measured temperature rise (K)	allowed temperature rise (K)
18-0686_L	14,2	≤ 45
18-0686_1	19,4	≤ 45
18-0686_L	17,6	≤ 45
18-0686_2	17,9	≤ 45
18-0687_L	11,7	≤ 45
18-0687_1	16,9	≤ 45
18-0687_L	13,7	≤ 45

18-0687_2	17,8	≤ 45
18-0688_L	14,1	≤ 45
18-0688_1	19,9	≤ 45
18-0688_L	16,3	≤ 45
18-0688_2	18,1	≤ 45
<i>Supplementary information:</i>		

20.2	TABLE: Impact resistance			
part of enclosure tested per table 21 (A, B, C, D)	blows per part	height of fall (mm)	comments	
A	5	80	P	
B	4	80	P	
<i>Supplementary information:</i>				

21.3	TABLE: Ball pressure test of thermoplastic materials			P
	Allowed impression diameter (mm) ≤ 2 mm			
part under test	material designation	test temperature (°C)	impression diameter (mm)	
Woc0025_21	Polycarbonate RAL7011	125	1,3	
w0c0025_15	Polycarbonate low visc,grey RAL7046	125	1,5	
<i>Supplementary information: test on : w1d0750_00, w1c0327_00, W1D0754_00, W1D0753_00 data and values from the CB TEST REPORT No. 628433/01</i>				

21.4	TABLE: Ball pressure test of thermoplastic materials			P
	Allowed impression diameter (mm) ≤ 2 mm			
part under test	material designation	test temperature (°C) ⁽¹⁾	impression diameter (mm)	
9515900592	POM	70	0,9	
Woc0025_80	PC MAKROLON 2407 RAL 9010	70	0,6	
<i>Supplementary information:</i> test on : W1D0704_00, w1a1285_00 data and values from the CB TEST REPORT No. 628433/01 ⁽¹⁾ 70 °C / 40 °C + highest temperature rise determined during the test of clause 17				

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

23.1	TABLE: Creepage distances, clearances and distances through sealing compound							P
	Rated voltage (V)						10	
item per table 23	creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)	required dtsc (mm)	dtsc (mm)	
1-6	Between live parts witch are separated when the contacts are open	≥3	3,6	≥3	3,6	≥3	N/A	
2	Between live parts of different polarity	≥3	3,5	≥3	3,5	≥3	N/A	
3	Between live parts accessible parts of insulation material,	≥3	3,7	≥3	3,7	≥3	N/A	
<i>Supplementary information: PATTERN NUMBER 1-6 data and values from the CB TEST REPORT No. 628433/01</i>								

23.1	TABLE: Creepage distances, clearances and distances through sealing compound							P
	Rated voltage (V) :						10	
item per table 23	creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	require d cl (mm)	cl (mm)	require d dcr (mm)	dcr (mm)	require d dtsc (mm)	dtsc (mm)	
1-6	Between live parts witch are separated when the contacts are open	≥ 3	3.3	≥ 3	>10	≥ 3	N/A	
2	Between live parts of different polarity	≥ 3	3.4	≥ 3	3.4	≥ 3	N/A	
3	Between live parts accessible parts of insulation material,	≥ 3	>8	≥ 3	>8	≥ 3	N/A	
<i>Supplementary information: PATTERN NUMBER 2</i>								

23.1	TABLE: Creepage distances, clearances and distances through sealing compound							P
	Rated voltage (V) :						10	
item per table 23	creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	require d cl (mm)	cl (mm)	require d dcr (mm)	dcr (mm)	require d dtsc (mm)	dtsc (mm)	
1-6	Between live parts witch are separated when the contacts are open	≥ 3	5.2	≥ 3	>10	≥ 3	N/A	
2	Between live parts of different polarity	≥ 3	na	≥ 3	na	≥ 3	N/A	

3	Between live parts accessible parts of insulation material,	≥ 3	>10	≥ 3	>10	≥ 3	N/A

Supplementary information: PATTERN NUMBER 4

24.1	TABLE: Glow-wire test			
part under test	material designation	test temperature (°C)	remarks	
BASE	Woc0025_21	850	P	
TECH COVER	w0c0025_15	850	P	
UNDE ROCKER	w0c0025_15	850	P	
ROCKER	W0C0025_00	650	P	

Supplementary information: data and values from the CB TEST REPORT No. 628433/01

24.2	TABLE: Resistance to tracking			N/A
	Number of drops	50		
part under test	material designation	test voltage (V)	flashover / breakdown (Yes/No)	
		175		

Supplementary information:

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Customer's Testing Facility according to CTF stage 1 or CTF stage 2 procedure has been used.

Note: This page may be removed when CTF stage 1 or CTF stage 2 are not used. See also clause 4.8 in OD 2020 for more details.

Clause	Measurement / testing	Testing / measuring equipment / material used, (Equipment ID)	Range used	Last Calibration date	Calibration due date
8	TIME	W8T0002-01	0-15MIN	09/2016	09/2019
10	GAUGE	w8d0009-03	-	03/2018	03/2020
10	GAUGE	w8d0010-03	-	03/2018	03/2020
10	TIME	w8t0002-01	0-15MIN	09/2016	09/2018
12	ELECTRIC	w8e0003-02	10-40A	10/2017	10/2018
12	ELECTRIC	w8e0011-04	-	10/2017	10/2018
12	ELECTRIC	w8e0004-02	10-40A	10/2017	10/2018
12	ELECTRIC	w8e0002-10	-	10/2017	10/2018
12	EQUIPMENT	w8n0005-05	-	09/2016	09/2020
12	EQUIPMENT	w8n0007-05	-	-	-
12	MASS	w8m0016-01	0,7 Kg	12/2016	12/2019
12	MASS	w8m0015-01	0,4 Kg	12/2016	12/2019
12	TIME	w8t0002-01	0-15MIN	09/2016	09/2018
12	MASS	W8m0044-01	50 g	-	12/2019
12	MASS	W8m0045-01	100 g	-	02/2020
13	EQUIPMENT	W8m0017-01	0-500N	9/2016	9/2019
13	GAUGE	W8d0005-01	-	9/2016	9/2020
13	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
14	EQUIPMENT	W8a0011-00	-	-	-
14	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
15	TEMPERATURE	W8K0003-04	0-125°C	9/2017	9/2018
15	GAUGE	W8D0010-03	-	03/2018	03/2020
16	TIME	W8T0002-01	0-15MIN	09/2016	09/2019
16	ELECTRIC	W8E0002-06	2000V	10/2017	10/2018
16	ELECTRIC	W8E0001-06	500MΩ	10/2017	10/2018
17	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
17	ELECTRIC	W8E0009-04	-	10/2017	10/2018
17	ELECTRIC	W8E0005-10	-	10/2017	10/2018
17	ELECTRIC	W8E0002-02	10-40A	10/2017	10/2018
18	EQUIPMENT	W8e0004-12	-	10/2017	10/2018

18	EQUIPMENT	W8e0003_12	-	10/2017	10/2018
18	EQUIPMENT	W8e0001_12	-	10/2017	10/2018
19	EQUIPMENT	W8e0004-12	-	10/2017	10/2018
19	EQUIPMENT	W8e0003_12	-	10/2017	10/2018
19	EQUIPMENT	W8e0001_12	-	10/2017	10/2018
19	EQUIPMENT	W8e0004-12	-	10/2017	10/2018
19	EQUIPMENT	W8e0003_12	-	10/2017	10/2018
19	EQUIPMENT	W8e0001_12	-	10/2017	10/2018
19	ELECTRIC	W8E0002-06	1500V	10/2017	10/2018
19	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
19	ELECTRIC	W8E0009-04	-	10/2017	10/2018
19	ELECTRIC	W8E0005-10	-	10/2017	10/2018
19	ELECTRIC	W8E0002-02	10-40A	10/2017	10/2018
20	EQUIPMENT	w8n0004-05	-	09/2016	09/2020
20	MASS	w8m0040-01	250g	09/2016	09/2019
21	TEMPERATURE	w8k0003-04	70°C-125°C	09/2017	09/2018
21	MASS	w8n0002-02	20N	10/2017	10/2018
21	MASS	w8n0004-02	20N	10/2017	10/2018
21	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
21	EQUIPMENT	w8d0001-07	OGP	05/2017	05/2019
22	EQUIPMENT	w8n0004-05	-	09/2016	09/2020
22	MASS	w8m0040-01	250g	09/2016	09/2019
24	ELECTRIC	w8e0009-04	-	10/2017	10/2018
24	EQUIPMENT	w8k0002-05	650°C /850°C	09/2016	09/2020
24	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
25	TIME	w8t0002-01	0-15MIN	09/2016	09/2019
25	EQUIPMENT	w8k0003-04	100°C	09/2017	09/2018
25	EQUIPMENT	w8k0001-04	20°C	09/2017	09/2018