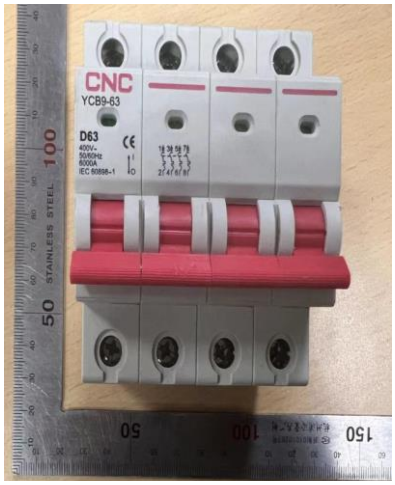
Prüfbericht - Produkte
Test Report - Products

Prüfbericht-Nr.: *Test report no.:*	**CN24H0M4 001**	**Auftrags-Nr.:** *Order no.*:	**244589441**	Seite 1 von1 *Page 1 of **1***
Kunden-Referenz-Nr.: *Client reference no.:*	**2262903**	**Auftragsdatum:** *Order date:*	10.11.2023	
Auftraggeber: *Client:*	**Zhejiang Changcheng Trading Co., Ltd.** *DianHou Village, Liushi Town, Yueqing City,, Zhejiang P.R. China*			
Prüfgegenstand: *Test item:*	**Miniature Circuit-breaker**			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	**YCB9-63**			
Auftrags-Inhalt: *Order content*:	**Type Test**			
Prüfgrundlage: *Test specification:*	**EN 60898-1:2019**			
Wareneingangsdatum: *Date of sample receipt:*	**10.11.2023**			
Prüfmuster-Nr.: *Test sample no:*	**24458944101**			
Prüfzeitraum: *Testing period:*	**10.11.2023-10.12.2023**			
Ort der Prüfung: *Place of testing:*	**TÜV Rheinland (Shanghai) Co., Ltd.**			
Prüflaboratorium: *Testing laboratory:*	**TÜV Rheinland (Shanghai) Co., Ltd.**			
Prüfergebnis*: *Test result*:*	Pass			



geprüft von: *reviewed by:*
Jiacheng Ding
Signed by:Jiacheng Ding

Datum: *Date:* 25-01-2024

Stellung / *Position:* Project Engineer

genehmigt von: *authorized by:*
Tonghui Wu
Signed by:Tonghui Wu

Ausstelldatum: *Issue date:* 25-01-2024

Stellung / *Position:* Authorizer

Sonstiges / *Other:*
This report is created for type approval based on CB certificate and CB reports.
Attachment 1: CB certificates – HU- 004782 (1 page)
Attachment 2: CB test report – CN24JZ8W 001 (172 page)

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Ref. Certif. No.

HU-004782

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

CB TEST CERTIFICATE

Product	MCB
Name and address of the applicant	Zhejiang Changcheng Trading Co., Ltd. DianHou Village, Liushi Town, Yueqing City,, Zhejiang P.R. China
Name and address of the manufacturer	CNC Electric Group Zhejiang Technology Co., Ltd. DianHou Village, Liushi Town Yueqing City, 325603 Zhejiang P.R. China
Name and address of the factory Note: *When more than one factory, please report on page 2*	CNC Electric Group Zhejiang Technology Co., Ltd. DianHou Village, Liushi Town Yueqing City, 325603 Zhejiang P.R. China
Ratings and principal characteristics	Ue: 230/400VAC or 240/415VAC(1P); 230/240V or 400/415VAC(2P);400 or 415V(3P/4P); In: 6/10/16/20/25/32/40/50/63A; B/C/D-type; Icn=Ics=6,0kA; Icn1=Icn; Uimp: 4,0kV
Trademark / Brand (if any)	CNC
Customer's Testing Facility (CTF) Stage used	
Model / Type Ref.	YCB9-63
Additional information (if necessary may also be reported on page 2)	N/A
A sample of the product was tested and found to be in conformity with	IEC 60898-1:2015+A1 See Test Report for National Differences
As shown in the Test Report Ref. No. which forms part of this Certificate	CN24JZ8W 001

This CB Test Certificate is issued by the National Certification Body

TÜVRheinland®

TÜV Rheinland InterCert Kft., MEEI Division
H-1143 Budapest, Gizella út 51-57., Hungary
Web: www.tuv.com

Date: 2024-01-29

Signature: Wencai Zhang

10/061SMD 2022-07 rke-fix

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60898-1
Circuit-breakers for over current protection for household and similar installations
Part 1 - Circuit-breakers for a.c. operation

Report Number. ..... :	**CN24JZ8W 001**
Date of issue ..... :	**12.01.2024**
Total number of pages ..... :	**172**
Name of Testing Laboratory preparing the Report ..... :	**Zhejiang Testing & Inspection Institute for Mechanical and Electrical Products Quality Co., Ltd (ZTME)**
Applicant's name ..... :	**Zhejiang Changcheng Trading Co., Ltd.**
Address ..... :	**DianHou Village, Liushi Town, Yueqing City,, Zhejiang P.R. China**
Test specification:	
Standard ..... :	IEC 60898-1:2015, AMD1:2019
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60898_1E
Test Report Form(s) Originator .... :	DEKRA Certification B.V.
Master TRF ..... :	Dated 2021-10-17

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

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

Test item description .....:	**Circuit Breaker for overcurrent protection**
Trade Mark .....:	**CNC**
Manufacturer.....:	**CNC Electric Group Zhejiang Technology Co., Ltd.**
Model/Type reference .....:	YCB9-63
Ratings .....:	Ue: 230/400VAC or 240/415VAC(1P); 230/240VAC or 400/415VAC(2P); 400 or 415VAC(3P/4P) In: 6/10/16/20/25/32/40/50/63A; B/C/D-type; Icn=Ics=6,0kA; Icn1=Icn; Uimp: 4,0kV

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**CB Testing Laboratory:**	**Zhejiang Testing & Inspection Institute for Mechanical and Electrical Products Quality Co., Ltd. (ZTME)**	
Testing location/ address .....:		**No 125 Miaohouwang Road Binjiang District Hangzhou, Zhejiang CHINA**	
Tested by (name, function, signature).....:		**Gao yunyan** **Test engineer**	Gao yun yan
Approved by (name, function, signature).....:		**Ma Lin** **Reviewer**	Malin
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address .....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature).....:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address .....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature).....:			
Approved by (name, function, signature).....:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**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) .....:			

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

Attachment 1: Photo documentation – 6 pages

Summary of testing:

The model YCB9-60 according to table C.3 of Annex A, following ratings products were subject relevant test accordingly.

Sample allocation and test items according to IEC 60898-1 and EN 60898-1

Test sample Rating				Test sequence								
Pole	Curve	In [A]	Class	A	B	C1	C2	D0+D1	D0	E1	E2	E3
1P	D	63	-	1+3	3	3	3	3	-	6	-	-
1P	D	50	-	-	-	-	-	-	1	-	-	-
1P	D	40	-	-	-	-	-	-	1	-	-	-
1P	D	32	-	-	-	-	-	-	1	-	-	-
1P	D	25	-	-	-	-	-	-	1	-	-	-
1P	D	20	-	-	-	-	-	-	1	-	-	-
1P	D	16	-	-	-	-	-	-	1	-	-	-
1P	D	10	-	-	-	-	-	-	1	-	-	-
1P	D	6	-	-	-	-	-	-	1	6	-	-
1P	C	63	-	-	-	-	-	-	1[b]	-	-	-
1P	C	50	-	-	-	-	-	-	1[b]	-	-	-
1P	C	40	-	-	-	-	-	-	1[b]	-	-	-
1P	C	32	-	-	-	-	-	-	1[b]	-	-	-
1P	C	25	-	-	-	-	-	-	1[b]	-	-	-
1P	C	20	-	-	-	-	-	-	1[b]	-	-	-
1P	C	16	-	-	-	-	-	-	1[b]	-	-	-
1P	C	10	-	-	-	-	-	-	1[b]	-	-	-
1P	C	6	-	-	-	-	-	-	1[b]	-	-	-
1P	B	63	-	-	3[a]	-	-	-	1[b]	-	-	-
1P	B	50	-	-	-	-	-	-	1[b]	-	-	-
1P	B	40	-	-	-	-	-	-	1[b]	-	-	-
1P	B	32	-	-	-	-	-	-	1[b]	-	-	-
1P	B	20	-	-	-	-	-	-	1[b]	-	-	-
1P	B	16	-	-	-	-	-	-	1[b]	-	-	-
1P	B	10	-	-	-	-	-	-	1[b]	-	-	-
1P	B	6	-	-	-	-	-	-	1[b]	-	-	-
2P	D	63	-	-	-	-	2	-	-	3	-	-
2P	D	6	-	-	-	-	-	-	-	3	-	-
4P	D	63	-	1+3	3	3	1	3	-	3	-	-
4P	D	6	-	-	-	-	-	-	-	3	-	-
4P	B	63	-	-	3[a]	-	-	-	-	-	-	-

D-type circuit breaker type-tested first

C-type circuit breaker D0

B-type circuit breaker D0 + B

a-only do test 9.8

b-only do test 9.10.3

Tests performed (name of test and test clause):		**Testing location:**
Test Sequence A		**Zhejiang Testing & Inspection Institute for Mechanical and Electrical Products Quality Co., Ltd.(ZTME)**
D63; 1POLE (1+3 SAMPLE)	page 9	
D63; 4POLE (1+3 SAMPLE)	page 20	
Test Sequence B		
D63; 1POLE (3 SAMPLE)	page 31	
D63; 4POLE (3 SAMPLE)	page 37	
B63; 1POLE (3 SAMPLE)	page 44	
B63; 4POLE (3 SAMPLE)	page 44	
Test Sequence C1+C2		
D63; 1POLE (6 SAMPLE)	page 46	
D63; 2POLE (2 SAMPLE)	page 49	
D63; 4POLE (4 SAMPLE)	page 50	
Test Sequence D0+D1		
D63; 1POLE (3 SAMPLE)	page 54	
D63; 4POLE (3 SAMPLE)	page 59	
Test Sequence D0		
D50; 1POLE (1 SAMPLE)	page 64	
D40; 1POLE (1 SAMPLE)	page 67	
D32; 1POLE (1 SAMPLE)	page 70	
D25; 1POLE (1 SAMPLE)	page 72	
D20; 1POLE (1 SAMPLE)	page 75	
D16; 1POLE (1 SAMPLE)	page 78	
D10; 1POLE (1 SAMPLE)	page 81	
D6; 1POLE (1 SAMPLE)	page 84	
C63; 1POLE (1 SAMPLE)	page 87	
C50; 1POLE (1 SAMPLE)	page 89	
C40; 1POLE (1 SAMPLE)	page 92	
C32; 1POLE (1 SAMPLE)	page 95	
C25; 1POLE (1 SAMPLE)	page 98	
C20; 1POLE (1 SAMPLE)	page 101	
C16; 1POLE (1 SAMPLE)	page 103	
C10; 1POLE (1 SAMPLE)	page 106	
C6; 1POLE (1 SAMPLE)	page 109	
B63; 1POLE (1 SAMPLE)	page 112	
B50; 1POLE (1 SAMPLE)	page 115	
B40; 1POLE (1 SAMPLE)	page 118	
B32; 1POLE (1 SAMPLE)	page 121	
B25; 1POLE (1 SAMPLE)	page 124	
B20; 1POLE (1 SAMPLE)	page 127	
B16; 1POLE (1 SAMPLE)	page 130	
B10; 1POLE (1 SAMPLE)	page 133	
B6; 1POLE (1 SAMPLE)	page 136	
Test Sequence E1		
D63; 1POLE (6 SAMPLES)	page 138	
D6; 1POLE (6 SAMPLES)	page 141	
D63; 2P (3 SAMPLES)	page 144	

D6; 2P(3 SAMPLES) page 146 D63; 4P (3 SAMPLES) page 147 D6; 4P(3 SAMPLES) page 149	

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

EU Group Differences

☒ **The product fulfils the requirements of _EN60898-1:2019_____ .**

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES page 169	**Zhejiang Testing & Inspection Institute for Mechanical and Electrical Products Quality Co., Ltd.(ZTME)**

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

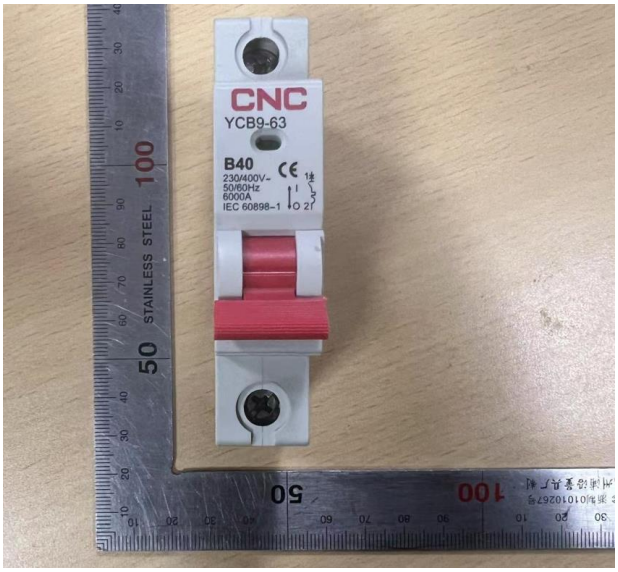
Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.

☒ **Statement not required by the standard used for type testing**

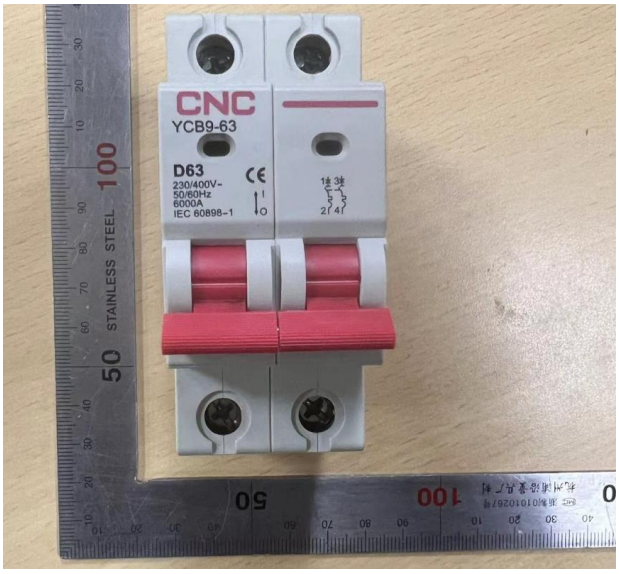
(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)

Copy of marking plate

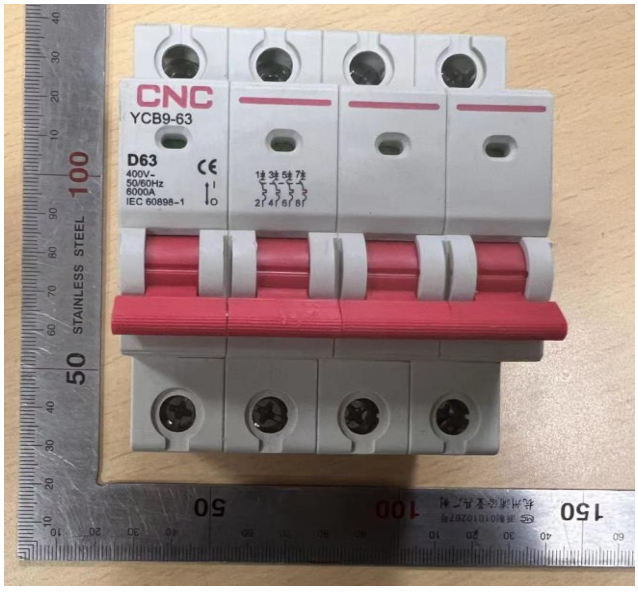
With sample of B40, 1P



With sample of D63, 2P



With sample of D63, 4P



Test item particulars.....:	**MCB**
Classification of installation and use.....:	**Circuit Breaker for overcurrent protection**
Supply Connection.....:	**not associated with the mechanical mounting**
.....:	
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 .....:	01.12.2023
Date (s) of performance of tests.....:	01.12.2023 to 01.01.2024

General remarks:

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

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

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

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

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

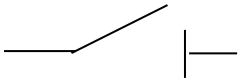
Name and address of factory (ies).....:	CNC Electric Group Zhejiang Technology Co., Ltd. DianHou Village, Liushi Town Yueqing City, 325603 Zhejiang P.R. China

General product information and other remarks:
The family products YCB9-63 are series product, according to Annex C in IEC / EN 60898-1.
Ratings:

Rated voltage 1P:	Ue = 230/400VAC or 240/415VAC
Rated voltage 2P:	Ue = 230/240VAC or 400/415VAC
Rated voltage 3P/4P:	Ue = 400VAC or 415VAC
Rated current In:	In= 6/10/16/20/25/32/40/50/63A
Instantaneous characteristic:	B-type, C-type, D-type
Short-circuit Capacity:	Icn=Ics=6kA

Test item particulars .....:	
Type of circuit-breaker .....:	Circuit Breaker for overcurrent protection
Number of poles .....:	☒ 1-P ☐ 1-P+N ☒ 2-P ☒ 3-P ☐ 3-P+N ☒ 4-P
Protection against external influences .....:	☐ enclosed ☒ unenclosed
Method of mounting .....:	☐ surface ☐ flush ☒ panel board
Method of connection .....:	☒not associated with the mechanical mounting ☐ associated with the mechanical mounting
Type of terminal .....:	☒ screw a) ~~b)~~ ☒ pillar a) ~~b)~~ ☐ cage a) b) ☐ plug ☐ screw less a) ☐ flat quick connect a) ☐ plug-in ☐ screw-in a) copper conductors ~~b) aluminium conductors~~
Instantaneous tripping current .....:	☒ B ☒ C ☒ D
I^2t characteristic .....:	
Value of rated operational voltage (Ue) .....:	☐ 120 V ☒ 230 V ☒ 240 V ☐ 120/240 V ☒ 230/400 V ☒ 400 V ☒ 240/415 V ☒ 415 V
Value of rated current (In) .....:	1-63A
Value of rated frequency .....:	☒ 50 Hz ☐ 60 Hz
Ambient air temperature (°C) .....:	☒ 30°C ☐ 40°C ☐ Other _____°C
Rated short-circuit capacity (Icn) .....:	☐ 1,5 kA ☐ 3 kA ☐ 4,5 kA ☒ 6 kA ☐ 10 kA ☐ 15 kA ☐ 20 kA ☐ 25 kA
Rated impulse withstand voltage (Uimp)	☐ 2,5 kV ☒ 4 kV ☐ declared ___kV

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict
	TESTS „A_1“ 1 SAMPLE FOR D63, 1P		--
6	**MARKING AND OTHER INFORMATION**		
	Circuit-breaker marked with:		--
	a) Manufacturer’s name or trade mark.....:	Trademark: CNC	P
	b) Type designation, catalogue number or other serial number.....:	YCB9-63	P
	c) Rated voltage (V).....:	230/400 V~	P
	d) Rated current without symbol "A", preceded by the symbol of instantaneous tripping.....:	D63	P
	e) Rated frequency (Hz) .....:	50/60Hz	P
	f) Rated short circuit capacity (A) .....:	6000A	P
	g) Wiring diagram	See copy of marking plate	P
	h) Ambient air temperature, if different from 3 0°C		N/A
	i) Degree of protection, if different from IP20		N/A
	j) For D-type circuit-breakers: the maximum instantaneous tripping current, if higher than 20 In see table 2)		N/A
	k) Rated impulse withstand voltage Uimp if it is 2,5 kV	4,0 kV	P
	l) Making and breaking capacity on an individual protected pole of multipole circuit-breakers (Icn1), if different from Icn		N/A
	Marking d) shall be readily visible when the CB is installed		P
	If, for small devices, the available space is insufficient, markings a), b), c), e), f), h), j) and l) may be put on the side or on the back of the CB		N/A
	Marking g) may be on the inside of any cover which has to be removed in order to connect the supply wires but shall not be on a label loosely attached to the CB		N/A
	Any other information not marked shall be given in the manufacturer’s documentation		P

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict
	The suitability for isolation, which is provided by all circuit-breakers of this standard, may be indicated by the symbol on the device		P
	I^2t characteristic (documentation)		N/A
	Symbols on supply and load terminal		N/A
	Terminal for neutral conductor N		N/A
	Earthing terminal if any (IEC 60417-5019)		N/A
	On - off position shall be clearly indicated - 0 I -		P
	For push-button CB the off push-button shall either be red or be marked with the symbol ´0´		N/A
	Red not used for other push-button		N/A
	For CB with multiple current ratings, the maximum value is marked, the adjusted value indicated without ambiguity		N/A
	For rail-mounted circuit-breakers, appropriate rail(s) shall be indicated in the manufacturer's documentation		N/A
	Marking shall be indelible and easily legible (not on removable parts), 15 s with water, 15 s with hexane (see cl. 9.3)		P
8.	**REQUIREMENTS FOR CONSTRUCTION AND OPERATION**		
8.1.1	**General**		P
	Circuit-breakers shall be so designed and constructed that, in normal use, their performance is reliable and without danger to the user or surroundings		P
8.1.2	**Mechanism**		P
	The moving contact shall be mechanically coupled so that all poles make and break together, whether operated manually or automatically, even if an overload occurs on one pole only		P
	The switched neutral shall close before and open after the protected pole (s)		N/A
	Neutral pole having adequate making and breaking capacity and CB with independent manual operation: all poles operate together including neutral pole		N/A
	CB shall have a trip free mechanism		P

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict
	It shall be possible to switch the CB on and off by hand		P
	No intermediate position of the contacts		P
	Position of contacts shall be indicated		P
	Indication visible from the outside		P
	If the indication is on the actuating means, it shall, when released, automatically take up or stay in the position corresponding to that of the moving contacts; operating means shall have two different rest positions, except that, for automatic operation, a third distinct rest position may be provided		N/A
	If a separate mechanical indicator is used to indicate the position of the main contacts, colour red shall be used for the on position and green for the off position.		N/A
	The action of the mechanism shall not be influenced by the position of enclosures		P
	If the cover is used as a guiding means for push-button, it shall not be possible to remove this button from the outside		N/A
	Operating means securely fixed, not possible to remove them without a tool		P
	For the up-down operating means the contacts shall be closed by the up movement.		P
8.1.3	**Clearances and creepage distances and operation**		P
	The minimum required clearances and creepage distances are based on the CB being designed for operating in an environment with pollution degree 2		P
	Parts of PCBs connected to live parts and protected against pollution by the use of a type 2 protection according to IEC 60664-3 are exempted from this verification		N/A
	The insulating materials are classified into material groups on the basis of their comparative tracking index (CTI) according to IEC 60664-1		N/A

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict
	For clearances on printed wiring material, footnote 3 in Table F.2 of IEC 60664-1:2007 applies. For creepage distances on printed wiring material, the distances from Table F.4 of IEC 60664-1:2007 for pollution degree 1 can be applied only if protected with a coating meeting IEC 60664-3 requirements and tests		N/A
8.1.3.1	Clearances		P
	Compliance for item 1 in Table 4 is checked by measurement and by the test of 9.7.5.4. The test is carried out with samples not submitted to the humidity treatment described in 9.7.1		P
	Compliance as regards items 2 and 4 in Table 4 is checked by measurement and, if the clearances are reduced, by the tests of 9.7.5.2		P
	The clearances of items 2 and 4 (except accessible surface after installation) may be reduced provided that the measured clearances are not shorter than the minimum allowed in IEC 60664-1 for homogenous field conditions.		P
	In this case, compliance as regards items 2 and 4 is always checked by the test of 9.7.5.2		P
	Compliance as regards item 3 in Table 4 is checked by measurement		P
	Minimum clearances (see table 4)		P
	Clearances [mm] Uimp		--
	4 kV (see table 4) 2,5 kV (see table 4)	☒ ☐	--
		minimum clearances 4,0 [mm]	--
	1.between live parts (of the main circuits) which are separated when the CB is in off position .....:	6,08 mm	P
	2.between live parts of different polarity.....:	Single pole	P
	3.between circuits supplied from different sources, one of which being PELV or SELV.....:	no such part	N/A
	4.between live parts and		P
	- accessible surfaces of operating means.....:	26,94 mm	P
	- screws or other means for fixing covers .....:	-	N/A
	- surface on which the base is mounted.....:	26,32 mm	P
	- screws or other means for fixing the circuit breaker .....:	-	N/A
	- metal covers or boxes.....:	-	N/A
	- other accessible metal parts .....:	26,94mm	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- metal frames supporting the base (flush-type) . :	-	N/A
8.1.3.2	Creepage distances		P
	Compliance as regards items 1, 2, 3 and 4 of Table 4 is checked by measurement		
	Minimum creepage distances (see table 4)		
	Material group	☐ III_b ☒ III_a ☐ II ☐ I	--
		minimum creepage distances 4,0[mm]	--
	1.between live parts (of the main circuits) which are separated when the CB is in off position ..... :	8,68 mm	P
	2.between live parts of different polarity..... :	Single pole	P
	3.between circuits supplied from different sources, one of which being PELV or SELV..... :	no such part	N/A
	4.between live parts and		P
	- accessible surfaces of operating means..... :	32,38 mm	P
	- screws or other means for fixing covers ..... :	-	N/A
	- surface on which the base is mounted..... :	30,88mm	P
	- screws or other means for fixing the circuit breaker ..... :	-	N/A
	- metal covers or boxes..... :	-	N/A
	- other accessible metal parts ..... :	32,38mm	P
	- metal frames supporting the base (flush-type) . :		N/A
8.1.3.3	Solid insulation		P
	Compliance is checked by the tests according to 9.7.2, 9.7.3, 9.7.4 and 9.7.5, as applicable		P
8.1.4	**Screws, current-carrying parts and connections**		P
8.1.4.1	Connections, withstand mechanical stresses occurring in normal use		P
	Screws for mounting of the CB not of the thread-cutting type		N/A
	Test according to cl. 9.4:		P
	- 10 times (screw Ø / torque Nm)	Ø___mm___Nm (see table 11) Ø___mm___Nm	N/A
	- 5 times (screw Ø / torque Nm)	Ø_4,90__mm_2,0__Nm (see table 11) Ø___mm___Nm	P
	After test connections have not become loose nor electrical function impaired		P
8.1.4.2	Screws with a thread of insulating material ensured correct introduction		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.1.4.3	Electrical connection: contact pressure not transmitted through insulating material, unless there is sufficient resilience in the metallic parts		N/A
8.1.4.4	Current-carrying parts including parts intended for protective conductors, if any, shall be made of a metal having, under the conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use. Examples below:		P
	- copper		N/A
	- alloy 58% copper for worked cold parts	For contact	P
	- alloy 50% copper for other parts		N/A
	- other metal	Zn plated Steel for screw	P
	In case of using ferrous alloys or suitably coated ferrous alloys, compliance to resistance to corrosion is checked by a test of resistance to rusting (see 9.16).		N/A
	The requirements of this subclause do not apply to contacts, magnetic circuits, heater elements, bimetals, shunts, electronic components, including printed circuit board or to screws, nuts, washers, clamping plates, similar parts of terminals and parts of the test circuit		P
	Compliance is checked by inspection in accordance with the manufacturer's declaration		P
8.1.5	**Terminals for external conductors**		--
	Compliance is checked by inspection and by the tests as relevant for the type of connection:		--
	by tests of clause 9.5 for screw-type terminals		P
	by specific tests for plug-in or bolt-on CBs included in this document		N/A
	by the tescots of Annexes J, K		N/A
8.1.5.1	Terminals ensure the necessary contact pressure		P
9.5	Torque test:		P
	- torque (Nm); diameter (mm).....:	4.90	--
	- torque (Nm); diameter (mm).....:		--
	- torque (Nm); diameter (mm).....:		--
	- max. cross-sectional area (mm²).....:	25	--
9.5.2	Pull test:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminals shall be suitable for all types of conductors: rigid (solid or stranded) and flexible, unless otherwise specified by the manufacturer.		--
	Min. cross-section solid / stranded / flexible (mm²).....:	1mm² for solid / flexible construction 1,5mm² for stranded construction	--
	Max. cross-section solid / stranded / flexible (mm²).....:	6mm² for solid construction 25mm² for stranded construction 16mm² for flexible construction	--
	Torque $^2/_3$ (Nm) .....:	1,33	--
	Pull for 1 min solid / stranded / flexible (N).....:	50-100N	P
	During the test no noticeable move of conductor		P
9.5.3	Torque test:		P
	- torque $^2/_3$ (Nm).....:	1,33Nm	--
	- min. cross-sectional area (mm²).....:	1mm²	--
	- max. cross-sectional area (mm²).....:	25mm²	--
	The conductor shows no undue damage nor severed strands		P
	Terminals have not worked loose and no damage		P
9.5.4	Terminals fitted with the largest cross-section area specified in Table 5, for stranded copper conductor.		P
	Max. cross-section stranded (mm²).....:	25mm²	--
	Torque $^2/_3$ (Nm) .....:	1,33Nm	--
	After the test no strand of conductor escaped outside		P
8.1.5.2	Terminals allow the connection of conductors of the following cross-sectional areas: (table 5)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A) / Range of nominal cross sections to be clamped* (mm^2): Rigid (solid or stranded) conductors / Flexible conductors ≤ 13: 1 to 2,5 / 1 to 2,5 > 13 ≤ 16: 1 to 4 / 1 to 4 > 16 ≤ 25: 1,5 to 6 / 1,5 to 6 > 25 ≤ 32: 2,5 to 10 / 2,5 to 6 > 32 ≤ 50: 4 to 16 / 4 to 10 > 50 ≤ 80: 10 to 25 / 10 to 16 > 80 ≤ 100: 16 to 35 / 16 to 25 > 100 ≤ 125: 24 to 50 / 25 to 35		P
	*It is required that, for current ratings up to and including 50 A, terminals be designed to clamp solid conductors as well as rigid stranded conductors. Nevertheless, it is permitted that terminals for conductors having cross-sections from 1 mm^2 up to 6 mm^2 be designed to clamp solid conductors only.		N/A
	- or terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors according to Annex L.		N/A
8.1.5.3	Means for clamping the conductors in the terminals not serve to fix any other component (See test sub-clause 9.5)		P
8.1.5.4	Terminals for $I_N \leq 32$ A allow the connection of conductors without special preparation		P
8.1.5.5	Terminals shall have adequate mechanical strength; ISO thread or equivalent (See tests of sub-clause 9.4 and 9.5.2)		P
8.1.5.6	Clamping of conductor without damage to the conductor (See test of sub-clause 9.5.3)		P
8.1.5.7	Clamping of conductor between metal surfaces (See tests of sub-clause 9.4 and 9.5.2)		P
8.1.5.8	Conductor shall not slip-out when the clamping screw or nuts are tightened (See test of sub-clause 9.5.4)		P
8.1.5.9	Terminals shall be properly fixed. No work loose when the clamping screws or nuts are tightened or loosened (See test of sub-clause 9.4)		P
8.1.5.10	Clamping screws or nuts of terminals for protective conductors adequately secured against accidental loosening		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.1.5.11	Pillar terminals shall allow full insertion and reliable clamping of the conductor		N/A
8.1.5.12	Screws and nuts of terminals for external conductors shall be in engagement with a metal thread, and the screws shall not be the thread cutting type		P
8.1.6	**Non-interchangeability**		**N/A**
	For circuit-breakers intended to be mounted on bases forming a unit therewith (plug-in or screw-in type) it shall not be possible, without the aid of a tool, to replace a circuit-breaker when mounted as for normal use by another of the same make having a higher rated current, compliance is checked by inspection		N/A
8.1.7	**Mechanical mounting of plug-in circuit-breakers**		N/A
8.1.7.1	The mechanical mounting of plug-in circuit-breakers, the retention of which does not depend solely on their plug-in connection(s), shall be reliable and have adequate stability		N/A
8.1.7.2	Plug-in type circuit-breakers, the retention of which does not depend solely on their plug-in connection(s) Compliance of the mechanical mounting is checked by the relevant test 9.13		N/A
8.1.7.3	Plug-in type circuit-breakers, the retention of which does depend solely on their plug-in connection(s) Compliance of the mechanical mounting is checked by the relevant test 9.13		N/A
8.14	**Electromagentic Immunity**		P
	Circuit-breakers for overcurrent protection for household and similar installations are not sesetive to normal electromagetic disturbance and the therefore no immunity tests are required		P
8.15	**Electromagnetic emission**		P
	Electromagnetic disturbance can only be generated by circuit-breakers for overcurrent protection for household and simliar installations during occasional switching or auomatic breaking operations. The duration of the distrubances is of the order of millisections		P
	The frequency, the level and the consequences of the these emissions are considered as part of the normal eletromagnetic enviroment of low-voltage installations. Therefore the requirements for electromagnetic emssions are deemed to be satisfied and no verifications is necessary		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2	**Protection against electric shock**		P
	Live parts not accessible in normal use		P
	For CB, other than plug-in type, external parts, other than screws and other means for fixing covers, which are accessible shall be of insulating material		P
	Unless the live parts are within an internal enclosure of insulating material: Lining - reliable fixed, - adequate thickness and - mechanical strength		P
	Inlet openings for cables shall be in insulating material or be provided with bushings or similar devices in insulating material Such device - shall be reliable fixed - shall have adequate mechanical strength		N/A
	For plug-in CB, external parts, other than screws and other means for fixing covers, which are accessible shall be in insulating material		N/A
	Metallic operating means insulated from live parts		N/A
	Metal parts of the mechanism not accessible and insulated from accessible metal parts, metal frames (for flush-type), screws or other means for fixing the base		P
	Replacement of plug-in CB possible without touching live parts		N/A
	Lacquer or enamel not considered		N/A
8.1.3	**Creepage distances [mm] (see table 4)**		P
	Internal parts only	See above	N/A
9.6	**Test of protection against electric shock**		P
	This verification is applicable to those parts of circuit breakers which are exposed to the operator when mounted as for normal use		P
	Use of test finger so designed that each jointed can be turned through an angle of 90° with respect to the finger		P
	Circuit-breaker with enclosures of thermoplastic material are additional tested at 35 °C for 1 min with a force of 75 N		P
8.10	**Resistance to heat**		P
	CB sufficiently resistant to heat		P
9.14	**Test of resistance to heat**		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.14.1	Test:		P
	- without removable covers ..... 1 h (100 ± 2) °C		P
	- removable covers..... 1 h (70 ± 2) °C		N/A
	After the test no access to live parts, marking still legible		P
9.14.2	Ball pressure test for external parts of insulating material (parts retaining current-carrying parts and parts of the protective circuit in position) T = 125°C Ø of impression ≤ 2 mm	Impression: 1,1mm for enclosure	P
9.14.3	Ball pressure test for external parts of insulating material (parts not retaining current-carrying parts and parts of the protective circuit in position T = (70 ± 2)°C or T = ___ °C = (40 ± 2)°C + max. temperature rise of sub-clause 9.8 Ø of impression ≤ 2 mm		P
8.12	**Resistance to rusting**		**P**
	Ferrous parts adequately protected against rusting		P
9.16	**Test of resistance to rusting:**		P
	- 10 min immersed in a cold chemical degreaser such as methyl-chloroform or refined petrol		P
	- 10 min immersed in a 10% solution of chloride in water at 20°C		P
	- 10 min at 95% humidity at 20°C		P
	- 10 min at 100°C		P
	No sign of rust		P

	TESTS „A_2“ 3 samples For D63, 2P	**A_{2-1} A_{2-2} A_{2-3}**	
8.11	**Resistance to abnormal heat and to fire**		**P**
	External parts of insulating material shall not ignite or spread fire under fault or overload conditions		P
9.15	**Resistance to abnormal heat and to fire**		**P**
	Test performed on a complete CB		P
	external parts retaining current-carrying parts and parts of the protective circuit in position ..... (960 ± 15)°C		P
	all other external parts ..... (650 ± 10)°C		M/A
	No visible flames, no sustained glowing, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	flames and glowing extinguish within 30 s after removal .....:		P
	No ignition of tissue paper or scorching of the pinewood board		P
	TESTS „A_1“ 1 SAMPLE FOR D63, 4P		--
6	**MARKING AND OTHER INFORMATION**		
	Circuit-breaker marked with:		--
	a) Manufacturer’s name or trade mark.....:	Trademark: CNC	P
	b) Type designation, catalogue number or other serial number.....:	YCB9-63	P
	c) Rated voltage (V).....:	400V~	P
	d) Rated current without symbol "A", preceded by the symbol of instantaneous tripping.....:	D63	P
	e) Rated frequency (Hz) .....:	50/60Hz	P
	f) Rated short circuit capacity (A) .....:	6000A	P
	g) Wiring diagram	See copy of marking plate	P
	h) Ambient air temperature, if different from 3 0°C		N/A
	i) Degree of protection, if different from IP20		N/A
	j) For D-type circuit-breakers: the maximum instantaneous tripping current, if higher than 20 In see table 2)		N/A
	k) Rated impulse withstand voltage Uimp if it is 2,5 kV	4,0 kV	P
	l) Making and breaking capacity on an individual protected pole of multipole circuit-breakers (Icn1), if different from Icn		N/A
	Marking d) shall be readily visible when the CB is installed		P
	If, for small devices, the available space is insufficient, markings a), b), c), e), f), h), j) and l) may be put on the side or on the back of the CB		N/A

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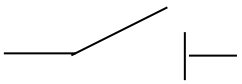
Clause	Requirement + Test	Result - Remark	Verdict
	Marking g) may be on the inside of any cover which has to be removed in order to connect the supply wires but shall not be on a label loosely attached to the CB		N/A
	Any other information not marked shall be given in the manufacturer's documentation		P
	The suitability for isolation, which is provided by all circuit-breakers of this standard, may be indicated by the symbol on the device		P
	I^2t characteristic (documentation)		N/A
	Symbols on supply and load terminal		N/A
	Terminal for neutral conductor N		N/A
	Earthing terminal if any (IEC 60417-5019)		N/A
	On - off position shall be clearly indicated - 0 I -		P
	For push-button CB the off push-button shall either be red or be marked with the symbol ´0´		N/A
	Red not used for other push-button		N/A
	For CB with multiple current ratings, the maximum value is marked, the adjusted value indicated without ambiguity		N/A
	For rail-mounted circuit-breakers, appropriate rail(s) shall be indicated in the manufacturer's documentation		N/A
	Marking shall be indelible and easily legible (not on removable parts), 15 s with water, 15 s with hexane (see cl. 9.3)		P
8.	**REQUIREMENTS FOR CONSTRUCTION AND OPERATION**		
8.1.1	**General**		P
	Circuit-breakers shall be so designed and constructed that, in normal use, their performance is reliable and without danger to the user or surroundings		P
8.1.2	**Mechanism**		P
	The moving contact shall be mechanically coupled so that all poles make and break together, whether operated manually or automatically, even if an overload occurs on one pole only		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The switched neutral shall close before and open after the protected pole (s)		N/A
	Neutral pole having adequate making and breaking capacity and CB with independent manual operation: all poles operate together including neutral pole		N/A
	CB shall have a trip free mechanism		P
	It shall be possible to switch the CB on and off by hand		P
	No intermediate position of the contacts		P
	Position of contacts shall be indicated		P
	Indication visible from the outside		P
	If the indication is on the actuating means, it shall, when released, automatically take up or stay in the position corresponding to that of the moving contacts; operating means shall have two different rest positions, except that, for automatic operation, a third distinct rest position may be provided		N/A
	If a separate mechanical indicator is used to indicate the position of the main contacts, colour red shall be used for the on position and green for the off position.		N/A
	The action of the mechanism shall not be influenced by the position of enclosures		P
	If the cover is used as a guiding means for push-button, it shall not be possible to remove this button from the outside		N/A
	Operating means securely fixed, not possible to remove them without a tool		P
	For the up-down operating means the contacts shall be closed by the up movement.		P
8.1.3	**Clearances and creepage distances and operation**		P
	The minimum required clearances and creepage distances are based on the CB being designed for operating in an environment with pollution degree 2		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Parts of PCBs connected to live parts and protected against pollution by the use of a type 2 protection according to IEC 60664-3 are exempted from this verification		N/A
	The insulating materials are classified into material groups on the basis of their comparative tracking index (CTI) according to IEC 60664-1		N/A
	For clearances on printed wiring material, footnote 3 in Table F.2 of IEC 60664-1:2007 applies. For creepage distances on printed wiring material, the distances from Table F.4 of IEC 60664-1:2007 for pollution degree 1 can be applied only if protected with a coating meeting IEC 60664-3 requirements and tests		N/A
8.1.3.1	Clearances		P
	Compliance for item 1 in Table 4 is checked by measurement and by the test of 9.7.5.4. The test is carried out with samples not submitted to the humidity treatment described in 9.7.1		P
	Compliance as regards items 2 and 4 in Table 4 is checked by measurement and, if the clearances are reduced, by the tests of 9.7.5.2		P
	The clearances of items 2 and 4 (except accessible surface after installation) may be reduced provided that the measured clearances are not shorter than the minimum allowed in IEC 60664-1 for homogenous field conditions.		P
	In this case, compliance as regards items 2 and 4 is always checked by the test of 9.7.5.2		P
	Compliance as regards item 3 in Table 4 is checked by measurement		P
	Minimum clearances (see table 4)		P
	Clearances [mm] Uimp		--
	4 kV (see table 4) 2,5 kV (see table 4)	☒ ☐	--
		minimum clearances 4,0 [mm]	--
	1.between live parts (of the main circuits) which are separated when the CB is in off position .....:	6,08 mm	P
	2.between live parts of different polarity.....:	9,14 mm	P

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Clause	Requirement + Test	Result - Remark	Verdict
	3.between circuits supplied from different sources, one of which being PELV or SELV.....:	no such part	N/A
	4.between live parts and		P
	- accessible surfaces of operating means.....:	26,94 mm	P
	- screws or other means for fixing covers .....:	-	N/A
	- surface on which the base is mounted.....:	26,32 mm	P
	- screws or other means for fixing the circuit breaker .....:	-	N/A
	- metal covers or boxes.....:	-	N/A
	- other accessible metal parts .....:	26,94mm	P
	- metal frames supporting the base (flush-type) .:	-	N/A
8.1.3.2	Creepage distances		P
	Compliance as regards items 1, 2, 3 and 4 of Table 4 is checked by measurement		
	Minimum creepage distances (see table 4)		
	Material group	☐ III_b ☒ III_a ☐ II ☐ I	--
		minimum creepage distances 4,0[mm]	--
	1.between live parts (of the main circuits) which are separated when the CB is in off position .....:	8,68 mm	P
	2.between live parts of different polarity.....:	17,82	P
	3.between circuits supplied from different sources, one of which being PELV or SELV.....:	no such part	N/A
	4.between live parts and		P
	- accessible surfaces of operating means.....:	32,38 mm	P
	- screws or other means for fixing covers .....:	-	N/A
	- surface on which the base is mounted.....:	30,88mm	P
	- screws or other means for fixing the circuit breaker .....:	-	N/A
	- metal covers or boxes.....:	-	N/A
	- other accessible metal parts .....:	32,38mm	P
	- metal frames supporting the base (flush-type) .:		N/A
8.1.3.3	Solid insulation		P
	Compliance is checked by the tests according to 9.7.2, 9.7.3, 9.7.4 and 9.7.5, as applicable		P
8.1.4	**Screws, current-carrying parts and connections**		P
8.1.4.1	Connections, withstand mechanical stresses occurring in normal use		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Screws for mounting of the CB not of the thread-cutting type		N/A
	Test according to cl. 9.4:		P
	- 10 times (screw Ø / torque Nm)	Ø___mm___Nm (see table 11) Ø___mm___Nm	N/A
	- 5 times (screw Ø / torque Nm)	Ø_4,90__mm_2,0__Nm (see table 11) Ø___mm___Nm	P
	After test connections have not become loose nor electrical function impaired		P
8.1.4.2	Screws with a thread of insulating material ensured correct introduction		N/A
8.1.4.3	Electrical connection: contact pressure not transmitted through insulating material, unless there is sufficient resilience in the metallic parts		N/A
8.1.4.4	Current-carrying parts including parts intended for protective conductors, if any, shall be made of a metal having, under the conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use. Examples below:		P
	- copper		N/A
	- alloy 58% copper for worked cold parts	For contact	P
	- alloy 50% copper for other parts		N/A
	- other metal	Zn plated Steel for screw	P
	In case of using ferrous alloys or suitably coated ferrous alloys, compliance to resistance to corrosion is checked by a test of resistance to rusting (see 9.16).		N/A
	The requirements of this subclause do not apply to contacts, magnetic circuits, heater elements, bimetals, shunts, electronic components, including printed circuit board or to screws, nuts, washers, clamping plates, similar parts of terminals and parts of the test circuit		P
	Compliance is checked by inspection in accordance with the manufacturer's declaration		P
8.1.5	**Terminals for external conductors**		--
	Compliance is checked by inspection and by the tests as relevant for the type of connection:		--
	by tests of clause 9.5 for screw-type terminals		P

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Clause	Requirement + Test	Result - Remark	Verdict
	by specific tests for plug-in or bolt-on CBs included in this document		N/A
	by the tescots of Annexes J, K		N/A
8.1.5.1	Terminals ensure the necessary contact pressure		P
9.5	Torque test:		P
	- torque (Nm); diameter (mm).....:	4.90	--
	- torque (Nm); diameter (mm).....:		--
	- torque (Nm); diameter (mm).....:		--
	- max. cross-sectional area (mm²).....:	25	--
9.5.2	Pull test:		P
	Terminals shall be suitable for all types of conductors: rigid (solid or stranded) and flexible, unless otherwise specified by the manufacturer.		--
	Min. cross-section solid / stranded / flexible (mm²).....:	1mm² for solid / flexible construction 1,5mm² for stranded construction	--
	Max. cross-section solid / stranded / flexible (mm²).....:	6mm² for solid construction 25mm² for stranded construction 16mm² for flexible construction	--
	Torque $^2/_3$ (Nm) .....:	1,33	--
	Pull for 1 min solid / stranded / flexible (N).....:	50-100N	P
	During the test no noticeable move of conductor		P
9.5.3	Torque test:		P
	- torque $^2/_3$ (Nm).....:	1,33Nm	--
	- min. cross-sectional area (mm²).....:	1mm²	--
	- max. cross-sectional area (mm²).....:	25mm²	--
	The conductor shows no undue damage nor severed strands		P
	Terminals have not worked loose and no damage		P
9.5.4	Terminals fitted with the largest cross-section area specified in Table 5, for stranded copper conductor.		P
	Max. cross-section stranded (mm²).....:	25mm²	--
	Torque $^2/_3$ (Nm) .....:	1,33Nm	--

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test no strand of conductor escaped outside		P
8.1.5.2	Terminals allow the connection of conductors of the following cross-sectional areas: (table 5)		P
	Rated current (A) / Range of nominal cross sections to be clamped* (mm^2): Rigid (solid or stranded) conductors / Flexible conductors ≤ 13: 1 to 2,5 / 1 to 2,5 > 13 ≤ 16: 1 to 4 / 1 to 4 > 16 ≤ 25: 1,5 to 6 / 1,5 to 6 > 25 ≤ 32: 2,5 to 10 / 2,5 to 6 > 32 ≤ 50: 4 to 16 / 4 to 10 > 50 ≤ 80: 10 to 25 / 10 to 16 > 80 ≤ 100: 16 to 35 / 16 to 25 > 100 ≤ 125: 24 to 50 / 25 to 35		P
	*It is required that, for current ratings up to and including 50 A, terminals be designed to clamp solid conductors as well as rigid stranded conductors. Nevertheless, it is permitted that terminals for conductors having cross-sections from 1 mm^2 up to 6 mm^2 be designed to clamp solid conductors only.		N/A
	- or terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors according to Annex L.		N/A
8.1.5.3	Means for clamping the conductors in the terminals not serve to fix any other component (See test sub-clause 9.5)		P
8.1.5.4	Terminals for $I_N \leq 32$ A allow the connection of conductors without special preparation		P
8.1.5.5	Terminals shall have adequate mechanical strength; ISO thread or equivalent (See tests of sub-clause 9.4 and 9.5.2)		P
8.1.5.6	Clamping of conductor without damage to the conductor (See test of sub-clause 9.5.3)		P
8.1.5.7	Clamping of conductor between metal surfaces (See tests of sub-clause 9.4 and 9.5.2)		P
8.1.5.8	Conductor shall not slip-out when the clamping screw or nuts are tightened (See test of sub-clause 9.5.4)		P
8.1.5.9	Terminals shall be properly fixed. No work loose when the clamping screws or nuts are tightened or loosened (See test of sub-clause 9.4)		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.1.5.10	Clamping screws or nuts of terminals for protective conductors adequately secured against accidental loosening		N/A
8.1.5.11	Pillar terminals shall allow full insertion and reliable clamping of the conductor		N/A
8.1.5.12	Screws and nuts of terminals for external conductors shall be in engagement with a metal thread, and the screws shall not be the thread cutting type		P
8.1.6	**Non-interchangeability**		**N/A**
	For circuit-breakers intended to be mounted on bases forming a unit therewith (plug-in or screw-in type) it shall not be possible, without the aid of a tool, to replace a circuit-breaker when mounted as for normal use by another of the same make having a higher rated current, compliance is checked by inspection		N/A
8.1.7	**Mechanical mounting of plug-in circuit-breakers**		N/A
8.1.7.1	The mechanical mounting of plug-in circuit-breakers, the retention of which does not depend solely on their plug-in connection(s), shall be reliable and have adequate stability		N/A
8.1.7.2	Plug-in type circuit-breakers, the retention of which does not depend solely on their plug-in connection(s) Compliance of the mechanical mounting is checked by the relevant test 9.13		N/A
8.1.7.3	Plug-in type circuit-breakers, the retention of which does depend solely on their plug-in connection(s) Compliance of the mechanical mounting is checked by the relevant test 9.13		N/A
8.14	**Electromagentic Immunity**		P
	Circuit-breakers for overcurrent protection for household and similar installations are not sesetive to normal electromagetic disturbance and the therefore no immunity tests are required		P
8.15	**Electromagnetic emission**		P
	Electromagnetic disturbance can only be generated by circuit-breakers for overcurrent protection for household and simliar installations during occasional switching or auomatic breaking operations. The duration of the distrubances is of the order of millisections		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The frequency, the level and the consequences of the these emissions are considered as part of the normal eletromagnetic enviroment of low-voltage installations. Therefore the requirements for electromagnetic emssions are deemed to be satisfied and no verifications is necessary		P
8.2	**Protection against electric shock**		P
	Live parts not accessible in normal use		P
	For CB, other than plug-in type, external parts, other than screws and other means for fixing covers, which are accessible shall be of insulating material		P
	Unless the live parts are within an internal enclosure of insulating material: Lining - reliable fixed, - adequate thickness and - mechanical strength		P
	Inlet openings for cables shall be in insulating material or be provided with bushings or similar devices in insulating material Such device - shall be reliable fixed - shall have adequate mechanical strength		N/A
	For plug-in CB, external parts, other than screws and other means for fixing covers, which are accessible shall be in insulating material		N/A
	Metallic operating means insulated from live parts		N/A
	Metal parts of the mechanism not accessible and insulated from accessible metal parts, metal frames (for flush-type), screws or other means for fixing the base		P
	Replacement of plug-in CB possible without touching live parts		N/A
	Lacquer or enamel not considered		N/A
8.1.3	**Creepage distances [mm] (see table 4)**		P
	Internal parts only	See above	N/A
9.6	**Test of protection against electric shock**		P
	This verification is applicable to those parts of circuit breakers which are exposed to the operator when mounted as for normal use		P
	Use of test finger so designed that each jointed can be turned through an angle of 90° with respect to the finger		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Circuit-breaker with enclosures of thermoplastic material are additional tested at 35 °C for 1 min with a force of 75 N		P
8.10	**Resistance to heat**		P
	CB sufficiently resistant to heat		P
9.14	**Test of resistance to heat**		P
9.14.1	Test:		P
	- without removable covers ..... 1 h (100 ± 2) °C		P
	- removable covers..... 1 h (70 ± 2) °C		N/A
	After the test no access to live parts, marking still legible		P
9.14.2	Ball pressure test for external parts of insulating material (parts retaining current-carrying parts and parts of the protective circuit in position) T = 125°C Ø of impression ≤ 2 mm	Impression: 1,1mm for enclosure	P
9.14.3	Ball pressure test for external parts of insulating material (parts not retaining current-carrying parts and parts of the protective circuit in position T = (70 ± 2)°C or T = ___ °C = (40 ± 2)°C + max. temperature rise of sub-clause 9.8 Ø of impression ≤ 2 mm		P
8.12	**Resistance to rusting**		**P**
	Ferrous parts adequately protected against rusting		P
9.16	**Test of resistance to rusting:**		P
	- 10 min immersed in a cold chemical degreaser such as methyl-chloroform or refined petrol		P
	- 10 min immersed in a 10% solution of chloride in water at 20°C		P
	- 10 min at 95% humidity at 20°C		P
	- 10 min at 100°C		P
	No sign of rust		P

	TESTS „A_2“ 3 samples For D63, 4P	**A_{2-1} A_{2-2} A_{2-3}**	
8.11	**Resistance to abnormal heat and to fire**		**P**
	External parts of insulating material shall not ignite or spread fire under fault or overload conditions		P
9.15	**Resistance to abnormal heat and to fire**		**P**
	Test performed on a complete CB		P

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Clause	Requirement + Test	Result - Remark	Verdict
	external parts retaining current-carrying parts and parts of the protective circuit in position ..... (960 ± 15)°C		P
	all other external parts ..... (650 ± 10)°C		M/A
	No visible flames, no sustained glowing, or		N/A
	flames and glowing extinguish within 30 s after removal .....:		P
	No ignition of tissue paper or scorching of the pinewood board		P

	TESTS „B“ 3 samples D63; 1POLE	**B_1 B_2 B_3**	
8.3	**Dielectric properties and isolating capability**		P
8.3.1	CB shall have adequate dielectric properties and shall ensure isolation:		P
8.3.2	Dielectric strength at power frequency		P
	Compliance is checked by the tests 9.7.1, 9.7.2 and 9.7.3 on circuit-breaker in new condition		P
8.3.3	Isolating capability		P
	Circuit-breakers shall be suitable for isolation. Compliance is checked by the verification of compliance with the minimum clearances and creepage distances of item 1 of table 4 and by tests of 9.7.5.1 and 9.7.5.3.		P
8.3.4	Dielectric strength at rated impulse withstand voltage (Uimp)		
	Circuit-breakers shall adequately withstand impulse voltages. Compliance is checked by the tests of 9.7.5.2.		P
9.7	**Test of dielectric properties and isolating capability**		P
9.7.5.4	Verification of resistance of the insulation of open contact and basic insulation against an impulse voltage in normal conditions		P
	These tests are not preceded by the humidity treatment described in 9.7.1.		P
	The test is carried out on an CB fixed on a metal support		P
	The impulses are given by a generator producing positive and negative impulses having a front time of 1,2μs, and a time to half-value of 50μs		P
	The shape of the impulses is adjusted with the CB under test connected to the impulse generator.		P
	rated impulse withstand voltage [kV]:	4,0kV	--

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Clause	Requirement + Test	Result - Remark	Verdict
	sea level of test laboratory [m]:	5 m	--
	test voltage (acc. Table 15) [kV]:	6,2kV	--
9.7.5.4.2	CB in open position (contacts in open position)		P
	The impulses are applied between:		--
	the line terminals connected together and the load terminals connected together		P
9.7.5.4.3	CB in closed position		P
	A first series of tests is made applying the impulse voltage between the phase pole(s) and the neutral pole (or path) connected together and the metal support connected to the terminal(s) intended for the protective conductor(s), if any		P
	A second series of tests is made applying the impulse voltage between the phase pole(s), connected together, and the neutral pole (or path) of the CB		P
	Five positive impulses and five negative impulses are applied, the interval between consecutive impulses being at least 1 s for impulses of the same polarity and being at least 10 s for impulses of the opposite polarity.		P
	no disruptive discharges during the test		P
9.7.1	Resistance to humidity		P
9.7.1.1	Preparation of the circuit-breaker for test		P
	Inlet openings, if any, are left open; if knock-outs are provided, one of them is opened.		N/A
9.7.1.2	Test conditions		P
	The humidity treatment is carried out in humidity cabinet 91% to 95% and the temperature of the air between 20 °C and 30 °C	Rf = 93…94 % T = 21,5…22,5 °C	P
9.7.1.3	Test procedure.		P
	The sample is kept in the cabinet for 48 h.		P
9.7.1.4	Conditions of the circuit breaker after the tests.		P
	The sample show no damage within the meaning of this standard and shall withstand the tests of 9.7.2 and 9.7.3, 9.7.4 and 9.7.5.2		P
9.7.2	Insulation resistance of the main circuit		P
9.7.2	After an interval between 30 min and 60 min flowing this treatment, the insulation resistance is measured 5 s after application of a d.c. voltage of approximately 500 V, consecutively as follows:	[MΩ] [MΩ] [MΩ]	P

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Clause	Requirement + Test	Result - Remark	Verdict
	a) In off-position, between the terminals which are electrically connected together when the circuit-breaker is in the closed position ≥ 2 MΩ		P
	b) in off-position, between each pole in turn and the others connected together ≥ 2 MΩ		N/A
	c) in on-position, between all poles connected together and the frame ≥ 5 MΩ		P
	d) between metal parts of mechanism and the frame ≥ 5 MΩ		N/A
	e) between the frame and metal foil in contact with the inner surface of the internal enclosure or lining of insulating material ≥ 5 MΩ		N/A
9.7.3	Dielectric strength of the main circuit		P
	After the circuit-breakers have passed the tests of 9.7.2 the test voltage specified is applied for 1 min between the parts indicated in 9.7.2		P
	a) 2000 V		P
	b) 2000 V		N/A
	c) 2000 V		P
	d) 2000 V		N/A
	e) 2500 V		N/A
	No flashover or breakdown		P
9.7.4	Insulation resistance and dielectric strength of the auxiliary circuits		N/A
	Insulation resistance of auxiliary circuits measured with 500 V DC after 1 min:		--
	1) between all auxiliary circuits and the frame (MΩ) ≥ 2 MΩ		N/A
	2) between each part of the auxiliary circuits which might be isolated from the other parts and the whole of the other parts connected together (MΩ) ≥ 2 MΩ		N/A
	Dielectric strength of auxiliary circuits measured with an AC voltage at rated frequency for 1 min:		--
	Rated voltage of auxiliary circuits (a.c. or d.c.) — Test voltage (V) ≤ 30 — 600 > 30 ≤ 50 — 1000 > 50 ≤ 110 — 1500 > 110 ≤ 250 — 2000 > 250 ≤ 500 — 2500	V	--
	1) between all auxiliary circuits and the frame		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	2) between each part of the auxiliary circuits which might be isolated from the other parts and the whole of the other parts connected together		N/A
	No flashover or perforation		N/A
9.7.5.1	General testing procedure for the impulse withstand voltage tests		P
	The impulses are given by a generator producing positive and negative impulses having a front time of 1,2μs, and a time to half-value of 50μs		P
	Five positive impulses and five negative impulses are applied, the interval between consecutive impulses being at least 1 s for impulses of the same polarity and being at least 10 s for impulses of the opposite polarity.		P
	The surge impedance of the test apparatus 500Ω and surge protective devices disconnected before testing or		P
	When carrying out tests on a circuit-breaker incorporating components across the parts under test (e.g. surge protective components), an impulse generator with a virtual impedance of 2Ω shall be used		P
	The shape of the impulses is adjusted with the circuit-breaker under test connected to the impulse generator. For this purpose, appropriate voltage dividers and voltage sensors shall be used		P
	For a circuit-breaker incorporating components across the parts under test (e.g. surge protective components), the shape of the impulses is adjusted without connection of the CB to the impulse generator		P
9.7.5.2	Verification of clearances with the impulse withstand voltage		N/A
	If the measurement of clearances of items 2 and 4 in Table 4 shows a reduction of the required length, this test applies.		N/A
	The test is carried out on an CB fixed on a metal support and being in the closed position		N/A
	The impulses are given by a generator producing positive and negative impulses having a front time of 1,2μs, and a time to half-value of 50μs		N/A
	The shape of the impulses is adjusted with the CB under test connected to the impulse generator.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	test performed with:		--
	-surge impedance of the test apparatus ≤500Ω and surge protective devices disconnected before testing or		N/A
	-hybrid generator with an surge impedance of 2 Ω and surge protective devices not disconnected before testing		N/A
	rated impulse withstand voltage [kV]:		--
	see level of test laboratory [m]:		--
	test voltage (acc. Table 14) [kV]:		--
	A first series of tests is made applying the impulse voltage between the phase pole(s) and the neutral pole (or path) connected together and the metal support connected to the terminal(s) intended for the protective conductor(s), if any		N/A
	A second series of tests is made applying the impulse voltage between the phase pole(s), connected together, and the neutral pole (or path) of the CB		N/A
	A third series of tests is made applying the impulse voltage between (and not tested during the two first sequences described here above):		--
	b) between each pole and the others connected together		-
	c) between all poles connected together and the frame		N/A
	d) between metal parts of the mechanism and the frame		N/A
	e) between the frame and a metal foil in contact with the inner surface of the lining of insulating material		N/A
	Five positive impulses and five negative impulses are applied, the interval between consecutive impulses being at least 1 s for impulses of the same polarity and being at least 10 s for impulses of the opposite polarity.		N/A
	no disruptive discharges during the test		P
8.4	**Temperature rise**		P
	Temperature rise does not exceed the limiting values stated in table 6:	sect. ___16___ mm²	P

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Clause	Requirement + Test	Result - Remark	Verdict

9.8.2	Test current: I_N= (reach the steady-state value) Four-pole CB's: ☐ 1) Three poles loaded 2) One pole and neutral pole loaded ☒ 1) Four-poles loaded	I_N = _63___A			P
	Ambient air temperature.....:	Tamb= __23,2____°C			P
	Parts .....Temperature rise [K]	[K]	[K]	[K]	P
	L1	31,4	32,4	29,7	P
	L2	35,4	31,1	31,2	
	Terminals for external connections .....60 K				P
	External parts liable to be touched during manual operation of the circuit-breaker, including operating means of insulating material and metallic means for coupling of insulating operating means of several poles .....40 K	9,2	9,9	9,5	P
	External metallic parts of operating means...25 K				P
	Other external parts, including that face of the circuit-breaker is in direct contact with the mounting surface.....60 K	13,5	14,2	13,8	P
9.8.5	Measurement of power losses	B_1	B_2	B_3	P
	Power loss do not exceed the values stated in table 8				P
	Test current: I_N =63 A (reach the steady state value)				P
	Loaded one pole after the other				P
	Max. power loss : _____13___ W	W	W	W	P
	L1	6,06	5,69	5,81	P
	L2	-	-	-	
	L3	-	-	-	
	L4(N)	-	-	-	
8.5	**Uninterrupted duty**				P
	Circuit-breakers operate reliable even after long service				P
9.9	**28 day test**				P
	28 cycles - 21 h with current - 3 h without current Cross-sectional area. __16__ mm²	I_N = ___63____A			P
	During the test no tripping during the last period, temperature rise shall be measured				P

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Clause	Requirement + Test	Result - Remark			Verdict
	Ambient air temperature.....:	23,2°C			P
	Parts .....Temperature rise [K]	[K]	[K]	[K]	--
	L1	32,2	32,8	30,5	P
	L2	34,7	31,7	31,4	
	Terminals for external connections				P
	The temperature rise does not exceed the value measured during the temperature rise test (sub-clause 9.8) by more than 15 K				P
	Test current 1,45 I_N =91,35 A	91,4A			P
	- Tripping within	[s]	[s]	[s]	P
	- 1h (≤ 63 A)	1min33s	1min29s	1min18s	P
	- 2h (> 63 A)				N/A

	TESTS „B“ 3 samples D63; 4POLE	**B_1**	**B_2**	**B_3**	
8.3	**Dielectric properties and isolating capability**				P
8.3.1	CB shall have adequate dielectric properties and shall ensure isolation:				P
8.3.2	Dielectric strength at power frequency				P
	Compliance is checked by the tests 9.7.1, 9.7.2 and 9.7.3 on circuit-breaker in new condition				P
8.3.3	Isolating capability				P
	Circuit-breakers shall be suitable for isolation. Compliance is checked by the verification of compliance with the minimum clearances and creepage distances of item 1 of table 4 and by tests of 9.7.5.1 and 9.7.5.3.				P
8.3.4	Dielectric strength at rated impulse withstand voltage (Uimp)				
	Circuit-breakers shall adequately withstand impulse voltages. Compliance is checked by the tests of 9.7.5.2.				P
9.7	**Test of dielectric properties and isolating capability**				P
9.7.5.4	Verification of resistance of the insulation of open contact and basic insulation against an impulse voltage in normal conditions				P
	These tests are not preceded by the humidity treatment described in 9.7.1.				P
	The test is carried out on an CB fixed on a metal support				P
	The impulses are given by a generator producing positive and negative impulses having a front time of 1,2μs, and a time to half-value of 50μs				P

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Clause	Requirement + Test	Result - Remark	Verdict
	The shape of the impulses is adjusted with the CB under test connected to the impulse generator.		P
	rated impulse withstand voltage [kV]:	4,0kV	--
	sea level of test laboratory [m]:	5 m	--
	test voltage (acc. Table 15) [kV]:	6,2kV	--
9.7.5.4.2	CB in open position (contacts in open position)		P
	The impulses are applied between:		--
	the line terminals connected together and the load terminals connected together		P
9.7.5.4.3	CB in closed position		P
	A first series of tests is made applying the impulse voltage between the phase pole(s) and the neutral pole (or path) connected together and the metal support connected to the terminal(s) intended for the protective conductor(s), if any		P
	A second series of tests is made applying the impulse voltage between the phase pole(s), connected together, and the neutral pole (or path) of the CB		P
	Five positive impulses and five negative impulses are applied, the interval between consecutive impulses being at least 1 s for impulses of the same polarity and being at least 10 s for impulses of the opposite polarity.		P
	no disruptive discharges during the test		P
9.7.1	Resistance to humidity		P
9.7.1.1	Preparation of the circuit-breaker for test		P
	Inlet openings, if any, are left open; if knock-outs are provided, one of them is opened.		N/A
9.7.1.2	Test conditions		P
	The humidity treatment is carried out in humidity cabinet 91% to 95% and the temperature of the air between 20 °C and 30 °C	Rf = 93…94 % T = 21,5…22,5 °C	P
9.7.1.3	Test procedure.		P
	The sample is kept in the cabinet for 48 h.		P
9.7.1.4	Conditions of the circuit breaker after the tests.		P
	The sample show no damage within the meaning of this standard and shall withstand the tests of 9.7.2 and 9.7.3, 9.7.4 and 9.7.5.2		P
9.7.2	Insulation resistance of the main circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.7.2	After an interval between 30 min and 60 min flowing this treatment, the insulation resistance is measured 5 s after application of a d.c. voltage of approximately 500 V, consecutively as follows:	[MΩ] [MΩ] [MΩ]	P
	a) In off-position, between the terminals which are electrically connected together when the circuit-breaker is in the closed position ≥ 2 MΩ		P
	b) in off-position, between each pole in turn and the others connected together ≥ 2 MΩ		N/A
	c) in on-position, between all poles connected together and the frame ≥ 5 MΩ		P
	d) between metal parts of mechanism and the frame ≥ 5 MΩ		N/A
	e) between the frame and metal foil in contact with the inner surface of the internal enclosure or lining of insulating material ≥ 5 MΩ		N/A
9.7.3	Dielectric strength of the main circuit		P
	After the circuit-breakers have passed the tests of 9.7.2 the test voltage specified is applied for 1 min between the parts indicated in 9.7.2		P
	a) 2000 V		P
	b) 2000 V		P
	c) 2000 V		P
	d) 2000 V		N/A
	e) 2500 V		N/A
	No flashover or breakdown		P
9.7.4	Insulation resistance and dielectric strength of the auxiliary circuits		N/A
	Insulation resistance of auxiliary circuits measured with 500 V DC after 1 min:		--
	1) between all auxiliary circuits and the frame (MΩ) ≥ 2 MΩ		N/A
	2) between each part of the auxiliary circuits which might be isolated from the other parts and the whole of the other parts connected together (MΩ) ≥ 2 MΩ		N/A
	Dielectric strength of auxiliary circuits measured with an AC voltage at rated frequency for 1 min:		--

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated voltage of auxiliary circuits (a.c. or d.c.) Test voltage (V) ≤ 30 600 > 30 ≤ 50 1000 > 50 ≤ 110 1500 > 110 ≤ 250 2000 > 250 ≤ 500 2500	V	--
	1) between all auxiliary circuits and the frame		N/A
	2) between each part of the auxiliary circuits which might be isolated from the other parts and the whole of the other parts connected together		N/A
	No flashover or perforation		N/A
9.7.5.1	General testing procedure for the impulse withstand voltage tests		P
	The impulses are given by a generator producing positive and negative impulses having a front time of 1,2μs, and a time to half-value of 50μs		P
	Five positive impulses and five negative impulses are applied, the interval between consecutive impulses being at least 1 s for impulses of the same polarity and being at least 10 s for impulses of the opposite polarity.		P
	The surge impedance of the test apparatus 500Ω and surge protective devices disconnected before testing or		P
	When carrying out tests on a circuit-breaker incorporating components across the parts under test (e.g. surge protective components), an impulse generator with a virtual impedance of 2Ω shall be used		P
	The shape of the impulses is adjusted with the circuit-breaker under test connected to the impulse generator. For this purpose, appropriate voltage dividers and voltage sensors shall be used		P
	For a circuit-breaker incorporating components across the parts under test (e.g. surge protective components), the shape of the impulses is adjusted without connection of the CB to the impulse generator		P
9.7.5.2	Verification of clearances with the impulse withstand voltage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If the measurement of clearances of items 2 and 4 in Table 4 shows a reduction of the required length, this test applies.		N/A
	The test is carried out on an CB fixed on a metal support and being in the closed position		N/A
	The impulses are given by a generator producing positive and negative impulses having a front time of 1,2μs, and a time to half-value of 50μs		N/A
	The shape of the impulses is adjusted with the CB under test connected to the impulse generator.		N/A
	test performed with:		--
	-surge impedance of the test apparatus ≤500Ω and surge protective devices disconnected before testing or		N/A
	-hybrid generator with an surge impedance of 2 Ω and surge protective devices not disconnected before testing		N/A
	rated impulse withstand voltage [kV]:	4,0kV	--
	see level of test laboratory [m]:	5m	--
	test voltage (acc. Table 14) [kV]:	Utest =4,97 kV	--
	A first series of tests is made applying the impulse voltage between the phase pole(s) and the neutral pole (or path) connected together and the metal support connected to the terminal(s) intended for the protective conductor(s), if any		N/A
	A second series of tests is made applying the impulse voltage between the phase pole(s), connected together, and the neutral pole (or path) of the CB		N/A
	A third series of tests is made applying the impulse voltage between (and not tested during the two first sequences described here above):		--
	b) between each pole and the others connected together		-
	c) between all poles connected together and the frame		P
	d) between metal parts of the mechanism and the frame		P
	e) between the frame and a metal foil in contact with the inner surface of the lining of insulating material		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Five positive impulses and five negative impulses are applied, the interval between consecutive impulses being at least 1 s for impulses of the same polarity and being at least 10 s for impulses of the opposite polarity.				N/A
	no disruptive discharges during the test				P
8.4	**Temperature rise**				P
	Temperature rise does not exceed the limiting values stated in table 6:	sect. ___16___ mm²			P
9.8.2	Test current: I_N= (reach the steady-state value) Four-pole CB's: ☐ 1) Three poles loaded 2) One pole and neutral pole loaded ☒ 1) Four-poles loaded	I_N = _63___A			P
	Ambient air temperature.....:	Tamb= __23,3____°C			P
	Parts .....Temperature rise [K]	[K]	[K]	[K]	P
	L1	44,1	39,1	38,1	P
	L2	56,8	41,7	45,7	
		58,3	44,7	47,5	
		45,3	41,9	47,3	
		39,7	35,4	37,1	
		42,6	41,4	42,4	
		52,6	47,1	39,7	
		40,9	36,7	38,7	
	Terminals for external connections .....60 K				P
	External parts liable to be touched during manual operation of the circuit-breaker, including operating means of insulating material and metallic means for coupling of insulating operating means of several poles .....40 K	18,9	19,3	19,2	P
	External metallic parts of operating means...25 K	-	-	-	P
	Other external parts, including that face of the circuit-breaker is in direct contact with the mounting surface.....60 K	24,6	24,9	24,8	P
9.8.5	Measurement of power losses	B_1	B_2	B_3	P
	Power loss do not exceed the values stated in table 8				P
	Test current: I_N =63 A (reach the steady state value)				P

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Clause	Requirement + Test	Result - Remark			Verdict
	Loaded one pole after the other				P
	Max. power loss : _____13___ W	W	W	W	P
	L1	5,99	5,83	5,95	P
	L2	6,17	5,79	6,21	
	L3	6,68	5,95	6,49	
	L4(N)	6,16	5,69	5,85	
8.5	**Uninterrupted duty**				P
	Circuit-breakers operate reliable even after long service				P
9.9	**28 day test**				P
	28 cycles - 21 h with current - 3 h without current Cross-sectional area. __16__ mm²	I_N = ___63____A			P
	During the test no tripping during the last period, temperature rise shall be measured				P
	Ambient air temperature.....:	23,0°C			P
	Parts .....Temperature rise [K]	[K]	[K]	[K]	--
	L1	44,8	39,8	38,5	P
	L2	56,9	41,9	45,9	
	L3	58,5	45,3	48,2	
	L4	45,7	42,4	48,0	
	L5	40,2	35,9	39,5	
	L6	42,3	41,8	42,9	
	L7	52,9	47,7	39,5	
	L8	41,4	36,9	39,2	
	Terminals for external connections				P
	The temperature rise does not exceed the value measured during the temperature rise test (sub-clause 9.8) by more than 15 K				P
	Test current 1,45 I_N =91,35 A	91,4A			P
	- Tripping within	[s]	[s]	[s]	P
	- 1h (≤ 63 A)	59,6s	1min02s	1min07s	P
	- 2h (> 63 A)				N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „B“ 3 samples B63; 1POLE	**B_1**	**B_2**	**B_3**	
	Temperature rise does not exceed the limiting values stated in table 6:	sect. ___16___ mm²			P
9.8.2	Test current: I_N= (reach the steady-state value) Four-pole CB‘s: ☐ 1) Three poles loaded 2) One pole and neutral pole loaded ☒ 1) Four-poles loaded	I_N = _63___A			P
	Ambient air temperature.....:	Tamb= __23,3____°C			P
	Parts .....Temperature rise [K]	[K]	[K]	[K]	P
	L1	35,6	39,6	38,5	P
	L2	37,4	39,2	34,3	
	Terminals for external connections .....60 K				P
	External parts liable to be touched during manual operation of the circuit-breaker, including operating means of insulating material and metallic means for coupling of insulating operating means of several poles .....40 K	7,5	7,7	7,2	P
	External metallic parts of operating means...25 K				P
	Other external parts, including that face of the circuit-breaker is in direct contact with the mounting surface.....60 K	29,1	33,5	30,8	P
9.8.5	Measurement of power losses	B_1	B_2	B_3	P
	Power loss do not exceed the values stated in table 8				P
	Test current: I_N =63 A (reach the steady state value)				P
	Loaded one pole after the other				P
	Max. power loss : _____13___ W	W	W	W	P
	L1	9,01	7,94	8,13	P
	L2	-	-	-	
	L3	-	-	-	
	L4(N)	-	-	-	

	TESTS „B“ 3 samples B63; 4POLE	**B_1**	**B_2**	**B_3**	
	Temperature rise does not exceed the limiting values stated in table 6:	sect. ___16___ mm²			P

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Clause	Requirement + Test	Result - Remark	Verdict

9.8.2	Test current: I_N= (reach the steady-state value) Four-pole CB's: ☐ 1) Three poles loaded 2) One pole and neutral pole loaded ☒ 1) Four-poles loaded	I_N = _63___A			P
	Ambient air temperature.....:	Tamb= __23,3____°C			P
	Parts .....Temperature rise [K]	[K]	[K]	[K]	P
	L1	51,4	40,4	47,5	P
	L2	43,1	41,8	42,5	
	L3	44,8	42,9	46,3	
	L4	49,6	44,9	45,8	
	L5	38,7	47,2	41,5	
	L6	54,0	49,9	49,2	
	L7	42,8	40,4	43,7	
	L8	47,0	39,2	41,1	
	Terminals for external connections .....60 K				P
	External parts liable to be touched during manual operation of the circuit-breaker, including operating means of insulating material and metallic means for coupling of insulating operating means of several poles .....40 K	16,5	12,3	14,8	P
	External metallic parts of operating means...25 K	-	-	-	N/A
	Other external parts, including that face of the circuit-breaker is in direct contact with the mounting surface.....60 K	33,2	25,6	29,6	P
9.8.5	Measurement of power losses	B_1	B_2	B_3	P
	Power loss do not exceed the values stated in table 8				P
	Test current: I_N =63 A (reach the steady state value)				P
	Loaded one pole after the other				P
	Max. power loss : _____13___ W	W	W	W	P
	L1	5,71	7,43	7,81	P
	L2	6,87	8,57	6,55	
	L3	6,62	6,74	8,76	

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Clause	Requirement + Test	Result - Remark			Verdict
	L4(N)	8,92	6,87	7,62	

	TESTS „C_1“ 3 +3 samples D63, 1POLE				**P**
8.7	**Test „C_1“ Mechanical and electrical endurance**	**C_{1-1}**	**C_{1-2}**	**C_{1-3}**	P
	Circuit-breaker shall be capable to perform an adequate number of cycles with rated current				P
9.11.1	General test conditions				P
	Test: Test Voltage _240_V (rated voltage) Test Current __63_A (rated current) Power factor ___(0,85-0,9) Par. resistor _____ (Ω) Cross sect. area 16mm²	Obtained 244 V 63,2 A 0,86			P
9.11.2	Test procedure				P
	The circuit-breaker is submitted to 4000 operating cycles with rated current.				P
	- $I_N \leq 32$ A: 2 s on - 13 s off				N/A
	- $I_N > 32$ A: 2 s on - 28 s off	In = 63 A			P
	During the test the circuit-breaker shall be operated as in normal use.				P
9.11.3	Conditions of the circuit breaker after the tests.				P
	Following the test 9.11.2 the sample shall not show:				P
	- undue wear				P
	- discrepancy between the position of the moving contacts and corresponding position of the Indicating device				P
	- damage to the enclosure permitting access to live parts by test finger (see 9.6)				P
	- loosening of electrical or mechanical connections				P
	- seepage of sealing compound				P
	Moreover test current .....2,55 I_N___A	161,0A			N/A
	Opening time not less 1 s or more than	[s]	[s]	[s]	P
	- 60 s (≤ 32 A)				N/A
	- 120 s (> 32 A)	43,1s	27,9s	31,2s	P
	Dielectric strength reduced to 1500 V	1500 V; 1 min; 100 mA			P
9.12.11.2	**Test at reduced short-circuit currents**				P
9.12.11.2.1	Test on all circuit-breakers				P

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Clause	Requirement + Test	Result - Remark			Verdict
9.12.11.2.1	Test at reduced short-circuit currents: Fig. 3				P
	Test current:	Obtained			--
	- 500 A or 10 In	I test= ___638_____A			--
	Test voltage 1,05 Un	Un = __255_____V			--
	Power factor 0,93-0,98	__0,94_____			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,80 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	"a" = __50____ mm			P
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			N/A
	I_{Peak} (A) max. value	854	853	852	--
	Sequence: 6 x "O" and 3 x "CO"	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s	1,13	0,67	0,71	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12	Verification of the circuit-breaker after short-circuit tests				P
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= _264__ V. The circuit – breaker is in the open position	**C_{1-1}** [mA]	**C_{1-2}** [mA]	**C_{1-3}** [mA]	P
	The leakage current shall not exceed 2 mA L1	< 0,01	< 0,01	< 0,01	P
	L2	-	-	-	N/A
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A

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Clause	Requirement + Test	Result - Remark	Verdict

9.12.11.2.2	**Test „C_2“ Short-circuit test on circuit-breakers for use in IT systems (3 sample)**				P
	Test current:				P
	- 500 A or 1,2 times the upper limit of the standard range of instantaneous tripping (see table 2) whichever is the higher, but < 2500 A. When tripping exceed 20 In the current adjusted at 1,2 times the upper limit even when higher 2500 A	1,54kA 0,96			P
	Test voltage 1,05 Un	437V			P
	Power factor 0,93-0,98	0,96			P
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = 50 mm			P
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			N/A
	I_{Peak} (A) max. value	1,99 kA	2,00kA	2,01 kA	--
	Sequence: "0" + "CO" on each protected pole	[kA2s]	[kA2s]	[kA2s]	--
	Shifted point 30 ° on the other protected pole	**C_{2-1}**	**C_{2-2}**	**C_{2-3}**	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4	14,8	13,1	13,6	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.6.3, each pole is supplied at a voltage 1,1 times Un.=457V. The circuit – breaker is in the open position	**C_{2-1}** [mA]	**C_{2-2}** [mA]	**C_{2-3}** [mA]	P
	The leakage current shall not exceed 2 mA L1	< 0,1	< 0,1	< 0,1	P
	L2	-	-	-	N/A
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:	1500 V, 1 min, 100 mA			P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test voltage 1500 V (see 8.7.2)		P
	a)		P
	b)		N/A
	c)		P
	d)		N/A
	e) 2000 V		N/A

	TESTS „C_2“2 samples D63, 2POLE				**P**
9.12.11.2.2	**Test „C_2“ Short-circuit test on circuit-breakers for use in IT systems (3 sample)**				P
	Test current:				P
	- 500 A or 1,2 times the upper limit of the standard range of instantaneous tripping (see table 2) whichever is the higher, but < 2500 A. When tripping exceed 20 In the current adjusted at 1,2 times the upper limit even when higher 2500 A	1,54kA 0,96			P
	Test voltage 1,05 Un	437V			P
	Power factor 0,93-0,98	0,96			P
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = 50 mm			P
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			N/A
	I_{Peak} (A) max. value	2,00 kA	2,01kA	1,96 kA	--
	Sequence: "0" + "CO" on each protected pole	[kA2s]	[kA2s]	[kA2s]	--
	Shifted point 30 ° on the other protected pole	**C_{2-1}**	**C_{2-2}**	**C_{2-3}**	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4	16,8	15,5	13,9	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P

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Clause	Requirement + Test	Result - Remark	Verdict

	a) leakage current across open contacts, according to 9.7.6.3, each pole is supplied at a voltage 1,1 times Un.=457V. The circuit – breaker is in the open position	**C_{2-1}** [mA]	**C_{2-2}** [mA]	**C_{2-3}** [mA]	P
	The leakage current shall not exceed 2 mA L1	< 0,01	< 0,01	< 0,01	P
	L2	< 0,01	< 0,01	< 0,01	P
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:	1500 V, 1 min, 100 mA			P
	Test voltage 1500 V (see 8.7.2)				P
	a)				P
	b)				P
	c)				P
	d)				N/A
	e) 2000 V				N/A

	TESTS „C_1“ 3 +3 samples D63, 4POLE				**P**
8.7	**Test „C_1“ Mechanical and electrical endurance**	**C_{1-1}**	**C_{1-2}**	**C_{1-3}**	P
	Circuit-breaker shall be capable to perform an adequate number of cycles with rated current				P
9.11.1	General test conditions				P
	Test: Test Voltage _415_V (rated voltage) Test Current __63_A (rated current) Power factor ___(0,85-0,9) Par. resistor _____ (Ω) Cross sect. area 16mm²	Obtained 418 V 64,0 A 0,87			P
9.11.2	Test procedure				P
	The circuit-breaker is submitted to 4000 operating cycles with rated current.				P
	- $I_N \leq 32$ A: 2 s on - 13 s off				N/A
	- $I_N > 32$ A: 2 s on - 28 s off	In = 63 A			P
	During the test the circuit-breaker shall be operated as in normal use.				P
9.11.3	Conditions of the circuit breaker after the tests.				P
	Following the test 9.11.2 the sample shall not show:				P
	- undue wear				P

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Clause	Requirement + Test	Result - Remark			Verdict
	- discrepancy between the position of the moving contacts and corresponding position of the Indicating device				P
	- damage to the enclosure permitting access to live parts by test finger (see 9.6)				P
	- loosening of electrical or mechanical connections				P
	- seepage of sealing compound				P
	Moreover test current .....2,55 I_N___A	161A			N/A
	Opening time not less 1 s or more than	[s]	[s]	[s]	P
	- 60 s (≤ 32 A)				N/A
	- 120 s (> 32 A)	39,7s	42,1s	51,2s	P
	Dielectric strength reduced to 1500 V	1500 V; 1 min; 100 mA			P
9.12.11.2	**Test at reduced short-circuit currents**				P
9.12.11.2.1	Test on all circuit-breakers				P
9.12.11.2.1	Test at reduced short-circuit currents: Fig. 3				P
	Test current:	Obtained			--
	- 500 A or 10 In	I test= ___638_____A			--
	Test voltage 1,05 Un	Un = __255_____V			--
	Power factor 0,93-0,98	__0,94_____			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	"a" = __35____ mm			P
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			N/A
	I_{Peak} (A) max. value	869A	868A	868A	--
	Sequence: 6 x "O" and 3 x "CO"	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s	1,12	1,23	0,92	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12	Verification of the circuit-breaker after short-circuit tests				P
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P

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Clause	Requirement + Test	Result - Remark			Verdict
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= _457__ V. The circuit – breaker is in the open position	**C_{1-1}** [mA]	**C_{1-2}** [mA]	**C_{1-3}** [mA]	P
	The leakage current shall not exceed 2 mA L1	< 0,01	< 0,01	< 0,01	P
	L2	< 0,01	< 0,01	< 0,01	P
	L3	< 0,01	< 0,01	< 0,01	P
	L4(N)	< 0,01	< 0,01	< 0,01	P
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
9.12.11.2.2	**Test „C_2“ Short-circuit test on circuit-breakers for use in IT systems (3 sample)**				P
	Test current:				P
	- 500 A or 1,2 times the upper limit of the standard range of instantaneous tripping (see table 2) whichever is the higher, but < 2500 A. When tripping exceed 20 In the current adjusted at 1,2 times the upper limit even when higher 2500 A	1,52kA 0,96			P
	Test voltage 1,05 Un	422V			P
	Power factor 0,93-0,98	0,97			P
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = 35 mm			P
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			N/A
	I_{Peak} (A) max. value	2,02 kA	2,00kA	1,97 kA	--
	Sequence: "0" + "CO" on each protected pole	[kA2s]	[kA2s]	[kA2s]	--
	Shifted point 30 ° on the other protected pole	**C_{2-1}**	**C_{2-2}**	**C_{2-3}**	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4	17,0	16,4	16,6	P
	- No permanent arcing				P

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Clause	Requirement + Test	Result - Remark			Verdict
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.6.3, each pole is supplied at a voltage 1,1 times Un.=457V. The circuit – breaker is in the open position	**C_{2-1}** [mA]	**C_{2-2}** [mA]	**C_{2-3}** [mA]	P
	The leakage current shall not exceed 2 mA L1	< 0,1	< 0,1	< 0,1	P
	L2	-	-	-	N/A
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:	1500 V, 1 min, 100 mA			P
	Test voltage 1500 V (see 8.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**D63; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-1} D_{O-2} D_{O-3}**	P
	I_N (A)	63A	--
	Sect. (mm²)	16mm²	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	71,2A	P
	- 1 h ($I_N \leq 63$ A)		P
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	91,4A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	1min25s 27,0s 1min02s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	161A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	23,8s 25,4s 26,8s	P
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	1	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____630_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____1260_____A	N/A
	Tripping less than 0,1 s	5,28ms 6,15ms 5,57ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	161A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	26,8s 25,9s 27,4s	P
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	P
	Test current 1,13 I_N (A)	____71,4_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____120_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	14,9s 10,8s 15,2s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	N/A
	Test current I_N (A)	63	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A
	Tests „D1“	D1-1 D1-2 D1-3	P
8.9	**Resistance to mechanical shock and impact**		P
	CB shall have adequate mechanical behaviour so as to withstand the stresses imposed during installation and use		P
9.13.1	Mechanical shock		P
	- 50 falls on two sides of vertical board C		P
	- Vertical board turned 90°		P
	- 50 falls on two sides of vertical board C		P
	During the test the circuit-breakers shall not open		P

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Clause	Requirement + Test	Result - Remark			Verdict
9.13.2	Mechanical impact				P
9.13.2.2	All types:				P
	- Impact test: 10 blows-height 10 cm, no damage				P
9.13.2.3	Screw-in types:				N/A
	- Torque 2,5 Nm for 1 min, no damage				N/A
9.13.2.4	CB intended to be mounted on a rail				P
	- downward vertical 50 N for 1 min				P
	- upward vertical 50 N for 1 min, no damage				P
9.13.2.5	Plug-in types				N/A
	The circuit-breaker are mounted in their normal position, complete with plug-in base but without cables and any cover plate				N/A
	A force of 20 N applied for 1min to the circuit-breaker (see fig 16).				N/A
	During this test the circuit-breaker part shall not become loose from the base and shall not show damage impairing further use.				N/A
9.12.11.3	**Test at 1500 A:**				P
	Prospective current of 1500 A - power factor 0,93 to 0,98				P
	Prospective current obtained (A)	1,55 kA			--
	Power factor	0,97			--
	Test voltage 1,05 Un	258 V			--
	Test circuit: figure	3/5			--
	T (min)	3 min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = 35 mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			--
	Sequence	6 O – 2 CO - O			--
	I_{Peak} (A) max. value	1,97kA	1,96kA	2,03kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1	11,7	12,7	12,2	P
	L2	___	___	___	
	L3	___	___	___	
	L4(N)	___	___	___	
	- No permanent arcing				P

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Clause	Requirement + Test	Result - Remark			Verdict
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= 264 V. The circuit – breaker is in the open position	**D_{1-1}** [mA]	**D_{1-2}** [mA]	**D_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2				N/A
	L3				N/A
	L4(N)				N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	60,8 A			P
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	101 A			P
		D_{1-1} [min]	**D_{1-2}** [min]	**D_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	3min17s	4min32s	2min03s	P

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**D63; 4POLE**			P
8.6	**Automatic operation**				P
8.6.1	Standard time-current zone				P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.				P
9.10	**Tests „D_0“**	**D_{O-1}**	**D_{O-2}**	**D_{O-3}**	P
	I_N (A)	63A			--
	Sect. (mm²)	16mm²			--
	Instantaneous tripping current	☐ B	☐ C	☒ D	--
9.10.1	General				P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results				P
9.10.2	Test of time-current characteristic				P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	71,2A			P
	- 1 h ($I_N \leq 63$ A)				P
	- 2 h ($I_N > 63$ A)				N/A
	No tripping				P
	Then steadily increased within 5 s to 1,45 I_N (A)	91,4A			P
	- Tripping within	[min]	[min]	[mini]	--
	- 1h (≤ 63 A)	1min03s	49,8s	30,6s	P
	- 2h (> 63 A)				N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	161A			P
	opening time not less than 1 s or more than	[s]	[s]	[s]	--
	- 60 s (≤ 32 A)				N/A
	- 120 s (> 32 A)	26,8s	28,0s	28,1s	P
9.10.3	Test of instantaneous tripping and of correct opening of the contacts				P
9.10.3.1	General test conditions				P
	For the lower values of the test current the test is made once, at any convenient voltage.				P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.				P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min				P
	The tripping time of the O operation is measured				P
	After each operation the indicating means shall show the open position of the contacts				P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____630_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____1260_____A	N/A
	Tripping less than 0,1 s	7,11ms 6,19ms 6,58ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	161A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	27,2s 28,3s 28,5s	P
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	___111_____A	P
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)	2min03s 1min58s 2min04s	P
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	P
	Test current 1,13 I_N (A)	____71,2_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____120_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	11,2s 8,95s 9,10s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	N/A
	Test current I_N (A)	63	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A
	Tests „D1“	D1-1 D1-2 D1-3	P
8.9	**Resistance to mechanical shock and impact**		P
	CB shall have adequate mechanical behaviour so as to withstand the stresses imposed during installation and use		P
9.13.1	Mechanical shock		P
	- 50 falls on two sides of vertical board C		P
	- Vertical board turned 90°		P
	- 50 falls on two sides of vertical board C		P
	During the test the circuit-breakers shall not open		P

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Clause	Requirement + Test	Result - Remark			Verdict
9.13.2	Mechanical impact				P
9.13.2.2	All types:				P
	- Impact test: 10 blows-height 10 cm, no damage				P
9.13.2.3	Screw-in types:				N/A
	- Torque 2,5 Nm for 1 min, no damage				N/A
9.13.2.4	CB intended to be mounted on a rail				P
	- downward vertical 50 N for 1 min				P
	- upward vertical 50 N for 1 min, no damage				P
9.13.2.5	Plug-in types				N/A
	The circuit-breaker are mounted in their normal position, complete with plug-in base but without cables and any cover plate				N/A
	A force of 20 N applied for 1min to the circuit-breaker (see fig 16).				N/A
	During this test the circuit-breaker part shall not become loose from the base and shall not show damage impairing further use.				N/A
9.12.11.3	**Test at 1500 A:**				P
	Prospective current of 1500 A - power factor 0,93 to 0,98				P
	Prospective current obtained (A)	1,52 kA			--
	Power factor	0,97			--
	Test voltage 1,05 Un	439 V			--
	Test circuit: figure	3/5			--
	T (min)	3 min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = 35 mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimension of enclosure: _____x_____x_____mm			--
	Sequence	6 O – 2 CO - O			--
	I_{Peak} (A) max. value	1,79kA	1,85kA	1,83kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1	11,2	10,2	11,3	P
	L2	___	___	___	
	L3	___	___	___	
	L4(N)	___	___	___	
	- No permanent arcing				P

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Clause	Requirement + Test	Result - Remark			Verdict
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= 457 V. The circuit – breaker is in the open position	**D_{1-1}** [mA]	**D_{1-2}** [mA]	**D_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	<0,01	<0,01	<0,01	P
	L3	<0,01	<0,01	<0,01	P
	L4(N)	<0,01	<0,01	<0,01	P
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				P
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	60,8 A			P
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	101 A			P
		D_{1-1} [min]	**D_{1-2}** [min]	**D_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	4min17s	2min28s	3min14s	P

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**D50; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-1}**	P
	I_N (A)	50A	--
	Sect. (mm^2)	10mm^2	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	56,6A	P
	- 1 h ($I_N \leq 63$ A)		P
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	72,6A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	8min19s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	128A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	18,1s	P
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	1	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____500_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____1000_____A	N/A
	Tripping less than 0,1 s	7,52ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	128A	P
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	18,7	P
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =____-5_____°C	P
	Test current 1,13 I_N (A)	___56,8_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	___95,2_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	24,9s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	P
	Test current I_N (A)	50A	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**D40; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-2}**	P
	I_N (A)	40A	--
	Sect. (mm^2)	10mm^2	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	45,2A	P
	- 1 h ($I_N \leq 63$ A)		P
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	58,0A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	1min46s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	102A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	9,40s	P
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold		N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	__400___A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	__800___A	N/A
	Tripping less than 0,1 s	8,12ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	____102_____A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	10,9s	P
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	-5℃	P
	Test current 1,13 I_N (A)		P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	76,0s	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	10,1s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	40℃	P
	Test current I_N (A)	40	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**D32; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-3}**	P
	I_N (A)	32A	--
	Sect. (mm^2)	6mm^2	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	36,2A	P
	- 1 h ($I_N \leq 63$ A)		P
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	46,4A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	3min19s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	81,6A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	21,8s	P
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____320_____A	P
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s	3,25s	P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____641_____A	N/A
	Tripping less than 0,1 s	6,59ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	81,6A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	23,2s	P
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =____-5_____°C	P
	Test current 1,13 I_N (A)	___36,2_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____60,8_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	36,2s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	P
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**D25; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-4}**	P
	I_N (A)	25A	--
	Sect. (mm²)	4mm²	--

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Clause	Requirement + Test	Result - Remark	Verdict
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	28,3A	P
	- 1 h ($I_N \leq 63$ A)		P
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	36,3A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	1min59s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	63,8A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	15,1s	P
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current 3I_N (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	1	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____250_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____500_____A	N/A
	Tripping less than 0,1 s	6,52ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	63,8A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	14,5s	P
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--

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Clause	Requirement + Test	Result - Remark	Verdict
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	P
	Test current 1,13 I_N (A)	___28,3_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____47,5_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	9,20s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	N/A
	Test current I_N (A)	25A	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample D20; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**$D_{O\text{-}5}$**	P
	I_N (A)	20A	--
	Sect. (mm²)	4mm²	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	22,6A	P
	- 1 h (I_N ≤ 63 A)		P
	- 2 h (I_N > 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	29,0A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	9min40s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	51,0A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	15,7s	P
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current 3I_N (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current 5I_N (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____200_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____400_____A	P
	Tripping less than 0,1 s	7,45ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	51,0A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	16,4s	P
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	N/A
	Test current 1,13 I_N (A)	___22,6_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Current is then steadily increased to 1,9 I_N (A) within 5s	____38,0_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	16,2s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	N/A
	Test current I_N (A)	20A	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample D16; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-6}**	P
	I_N (A)	16A	--
	Sect. (mm²)	2,5mm²	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	18,1A	P
	- 1 h (I_N ≤ 63 A)		P
	- 2 h (I_N > 63 A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	23,2A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	1min12s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	40,8A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	12,4s	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____160_____A	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____320_____A	N/A
	Tripping less than 0,1 s	8,52ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	40,8A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	15,1s	P
	- 120 s (> 32 A)		N
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		P
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	P
	Test current 1,13 I_N (A)	___18,1_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____30,4_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	2,60s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	N/A
	Test current I_N (A)	16A	P
	No tripping within		--

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Clause	Requirement + Test	Result - Remark	Verdict
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample D10; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-7}**	P
	I_N (A)	10A	--
	Sect. (mm²)	1,5mm²	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	11,3A	P
	- 1 h (I_N ≤ 63 A)		P
	- 2 h (I_N > 63 A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	14,5A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	8min15s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	25,5A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	13,2s	P
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____100_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____200_____A	P
	Tripping less than 0,1 s	6,95ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	25,5A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	14,0s	P
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	N/A
	Test current 1,13 I_N (A)	___11,3_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____19,0_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	17,9s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	N/A
	Test current I_N (A)	10,0A	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**D6; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-8}**	P
	I_N (A)	6A	--
	Sect. (mm^2)	1mm^2	--
	Instantaneous tripping current	☐ B ☐ C ☒ D	--
9.10.1	General		P
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		P
9.10.2	Test of time-current characteristic		P
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:	6,80A	P
	- 1 h ($I_N \leq 63$ A)		P
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		P
	Then steadily increased within 5 s to 1,45 I_N (A)	8,70A	P
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	9min04s	P
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:	15,3A	P
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	12,9s	P
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current $10I_N$ (A), starting from cold	____60_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	____120_____A	N/A
	Tripping less than 0,1 s	7,54ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	15,3A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	12,3s	P
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____-5____°C	P
	Test current 1,13 I_N (A)	___6,80_____A	P
	- Passed for 1h		P
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	____11,4_____A	P
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)	17,9s	P
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =____40_____°C	P
	Test current I_N (A)	6,0A	P
	No tripping within		--
	- 1h (≤ 63 A)		P
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**C63; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-13}**	P
	I_N (A)	63A	--
	Sect. (mm²)	16mm²	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	_____A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	315 A	P
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	630	P
	Tripping less than 0,1 s	8,92	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	161A	P
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	28,5s	P
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	_____A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	-5℃	N/A
	Test current 1,13 I_N (A)		N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s		N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	40℃	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**C50; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-14}**	P
	I_N (A)	50A	--
	Sect. (mm²)	10mm²	--

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Clause	Requirement + Test	Result - Remark	Verdict
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	____251_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___500_____ A	N/A
	Tripping less than 0,1 s	9,83	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	128	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	21,3s	P
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**C40; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-15}**	P
	I_N (A)	40A	--
	Sect. (mm²)	10mm²	--

	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h (I_N ≤ 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 2 h (I_N > 63 A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current 3I_N (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current 5I_N (A), starting from cold	____200_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 10 I_N (A), starting from cold	400 A	N/A
	Tripping less than 0,1 s	9,56ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	102	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	11,9s	P
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current 10I_N (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**C32; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-16}**	P
	I_N (A)	32A	--
	Sect. (mm²)	6mm²	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h (I_N ≤ 63 A)		N/A
	- 2 h (I_N > 63 A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--

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Clause	Requirement + Test	Result - Remark	Verdict
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	___ 160_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___320____ A	N/A
	Tripping less than 0,1 s	9,14ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	81,6A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	25,9s	P
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**C25; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-17}**	P
	I_N (A)	25A	--
	Sect. (mm²)	4mm²	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h (I_N ≤ 63 A)		N/A
	- 2 h (I_N > 63 A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	___ 125_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___250___ A	N/A
	Tripping less than 0,1 s	9,42ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	63,8A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	18,9s	P
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**C20; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-18}**	P
	I_N (A)	20A	--
	Sect. (mm^2)	2,5mm^2	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P

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Clause	Requirement + Test	Result - Remark	Verdict
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	___ 100_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___201___ A	N/A
	Tripping less than 0,1 s	10,1ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	51,0A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	19,9s	P
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A

9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**C16; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.10	**Tests „D_0“**	**D_{O-19}**	P
	I_N (A)	16A	--
	Sect. (mm²)	2,5mm²	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Tripping less than 0,1 s		N/A
)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	___ 80_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___161___ A	N/A
	Tripping less than 0,1 s	9,82ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	40,8A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	15,9s	P
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	TESTS „D“ 1 sample C10; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10	**Tests „D_0“**	**D_{O-20}**	P
	I_N (A)	10A	--
	Sect. (mm²)	1,5mm²	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current $3I_N$ (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Tripping less than 0,1 s		N/A
)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	___ 50_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___100___ A	N/A
	Tripping less than 0,1 s	9,53ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	25,5A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	17,8s	P
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample C6; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-21}**	P
	I_N (A)	30,1A	--
	Sect. (mm²)	1,0mm²	--
	Instantaneous tripping current	☐ B ☒ C ☐ D	--

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	The tripping time of the O operation is measured		P
	After each operation the indicating means shall show the open position of the contacts		P
9.10.3.2	☐ For circuit-breakers of the B – Type		N/A
	Test current 3I_N (A), starting from cold	_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 5 I_N (A), starting from cold	_____A	N/A

	Tripping less than 0,1 s		N/A
*)	Test current 2,55 IN (A) starting from cold for:	A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--

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Clause	Requirement + Test	Result - Remark	Verdict
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current $5I_N$ (A), starting from cold	___ 30,1_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 10 I_N (A), starting from cold	___60,1___ A	N/A
	Tripping less than 0,1 s	9,17ms	P
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:	15,3A	N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	14,9s	P
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
*see Annex 1 acc. EN60898-1	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „D“ 1 sample	**B63; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-26}**	P
	I_N (A)	63,0A	--
	Sect. (mm²)	16,0mm²	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h (I_N ≤ 63 A)		N/A
	- 2 h (I_N > 63 A)		N/A
	No tripping		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current 3I_N (A), starting from cold	____189_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 5 I_N (A), starting from cold	____315_____A	N/A
	Tripping less than 0,1 s	11,2ms	P
	Test current 2,55 IN (A) starting from cold for:	161A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	27,6s	P
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current 5I_N (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current 10I_N (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--

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Clause	Requirement + Test	Result - Remark	Verdict
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	TESTS „D“ 1 sample B50; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-27}**	P
	I_N (A)	50,0A	--
	Sect. (mm²)	10,0mm²	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h (I_N ≤ 63 A)		N/A
	- 2 h (I_N > 63 A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____150_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 5 I_N (A), starting from cold	____251_____A	N/A
	Tripping less than 0,1 s	11,5ms	P
	Test current 2,55 IN (A) starting from cold for:	128A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	23,7s	P
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample B40; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-28}**	P
	I_N (A)	40,0A	--
	Sect. (mm²)	10,0mm²	--

	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____120_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 5 I_N (A), starting from cold	____200_____A	N/A
	Tripping less than 0,1 s	10,9ms	P
	Test current 2,55 IN (A) starting from cold for:	102A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)	13,8s	P
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	TESTS „D“ 1 sample B32; 1POLE		P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-29}**	P
	I_N (A)	32,0A	--
	Sect. (mm^2)	6,0mm^2	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____96,0_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		P
	Test current 5 I_N (A), starting from cold	____160_____A	N/A
	Tripping less than 0,1 s	12,2ms	P
	Test current 2,55 IN (A) starting from cold for:	81,6A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	23,9s	P
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**B25; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-30}**	P
	I_N (A)	25,0A	--
	Sect. (mm^2)	4,0mm^2	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P
	The tripping time of the O operation is measured		P

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____60,0_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s	11,5s	P
	Test current 5 I_N (A), starting from cold	____100_____A	N/A
	Tripping less than 0,1 s	11,5ms	P
	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	19,7s	P
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**B20; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-30}**	P
	I_N (A)	20,0A	--
	Sect. (mm^2)	2,5mm^2	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____60,0_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s	11,7s	P
	Test current 5 I_N (A), starting from cold	____100_____A	N/A
	Tripping less than 0,1 s	11,9ms	P
	Test current 2,55 IN (A) starting from cold for:	51,0A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	22,7s	P
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**B16; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-30}**	P
	I_N (A)	16,0A	--
	Sect. (mm^2)	2,5mm^2	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____48,0_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s	10,5s	P
	Test current 5 I_N (A), starting from cold	____80,1_____A	N/A
	Tripping less than 0,1 s	11,6ms	P
	Test current 2,55 IN (A) starting from cold for:	40,8A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	17,7s	P
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**B10; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-30}**	P
	I_N (A)	10,0A	--
	Sect. (mm^2)	1,5mm^2	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____30,0_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s	9,55s	P
	Test current 5 I_N (A), starting from cold	____50,1_____A	N/A
	Tripping less than 0,1 s	12,3ms	P
	Test current 2,55 IN (A) starting from cold for:	25,5A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	30,2s	P
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „D“ 1 sample	**B6; 1POLE**	P
8.6	**Automatic operation**		P
8.6.1	Standard time-current zone		P
	Tripping characteristic of CB ensures adequate protection of the circuit, without premature operation.		P
9.10	**Tests „D_0“**	**D_{O-33}**	P
	I_N (A)	6,0A	--
	Sect. (mm^2)	1,5mm^2	--
	Instantaneous tripping current	☒ B ☐ C ☐ D	--
9.10.1	General		N/A
	If the test is made in a test chamber, it shall be made in still air; the volume of the test chamber shall be such as not to affect the test results		N/A
9.10.2	Test of time-current characteristic		N/A
9.10.2.1	Test current 1,13 I_N (A) starting from cold for:		N/A
	- 1 h ($I_N \leq 63$ A)		N/A
	- 2 h ($I_N > 63$ A)		N/A
	No tripping		N/A
	Then steadily increased within 5 s to 1,45 I_N (A)		N/A
	- Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

9.10.2.2	Test current 2,55 I_N (A) starting from cold for:		N/A
	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3	Test of instantaneous tripping and of correct opening of the contacts		P
9.10.3.1	General test conditions		P
	For the lower values of the test current the test is made once, at any convenient voltage.		P
	For the upper values of the test current the test is made at rated voltage Un(phase to neutral) with a power factor between 0,95 and 1.		P
	The sequence of operation is : O-CO-CO-CO Interval time: > 3 min		P
	After each operation the indicating means shall show the open position of the contacts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The tripping time of the O operation is measured		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_N$ (A), starting from cold	____18,0_____A	--
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s	11,7s	P
	Test current 5 I_N (A), starting from cold	____30,1_____A	N/A
	Tripping less than 0,1 s	11,9ms	P
	Test current 2,55 IN (A) starting from cold for:	15,3A	N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)	15,8s	P
	- 120 s (> 32 A)		N/A
9.10.3.3	☐ For circuit-breakers of the C – Type		N/A
	Test current $5I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 10 I_N (A), starting from cold	_____ A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A
9.10.3.4	☐ For circuit-breakers of the D – Type		N/A
	Test current $10I_N$ (A), starting from cold	_____A	N/A
	Opening time:	[s] [s] [s]	--
	≥ 0,1 s		N/A
	Test current 20 I_N (A) or to the maximum instantaneous tripping current(see cl. 6, item j), starting from cold	_____A	N/A
	Tripping less than 0,1 s		N/A
9.10.2.2 *)	Test current 2,55 IN (A) starting from cold for:		N/A
**see Annex 1 acc. EN60898-1*	opening time not less than 1 s or more than	[s] [s] [s]	--
	- 60 s (≤ 32 A)		N/A
	- 120 s (> 32 A)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.10.4	Test of effect of single pole loading on the tripping characteristic of multi-pole circuit-breakers:		N/A
	Test current 1,1 It (A), (two pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	Test current 1,2 It (A), (three pole or four pole) starting from cold	_____A	N/A
	Tripping within	[min] [min] [min]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
9.10.5	Test of effect of ambient temperature on the tripping characteristics		N/A
	a) Ambient temperature of (35 ± 2) K below the ambient air reference temperature	T =_____°C	N/A
	Test current 1,13 I_N (A)	_____A	N/A
	- Passed for 1h		N/A
	- Passed for 2h		N/A
	Current is then steadily increased to 1,9 I_N (A) within 5s	_____A	N/A
	Tripping within	[min] [min] [mini]	--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A
	b) Ambient temperature of (10 ± 2) K above the ambient air reference temperature	T =_____°C	N/A
	Test current I_N (A)		N/A
	No tripping within		--
	- 1h (≤ 63 A)		N/A
	- 2h (> 63 A)		N/A

	TESTS „E_1“ 3 samples D63, 1POLE,				P
9.12.11.4.2	**Test E_1: Test at service short-circuit capacity**	**E_{1-1}**	**E_{1-2}**	**E_{1-3}**	**P**
	Service short-circuit capacity (Ics) .....:	6kA			--
	Test circuit: figure .....:	3			--
	Test voltage 1,05 Un	256V			--
	Prospective current .....:	6kA			--

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Clause	Requirement + Test	Result - Remark			Verdict
	Prospective current obtained .....:	6,11 kA			--
	Power factor .....:	0,65…0,70			--
	Power factor obtained .....:	0,68			--
	Sequence .....:	O – O – CO			--
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,80 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = __50____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:	4,17kA	5,79kA	5,06kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	45,5 ___ ___ ___	109 ____ ___ ___	67,0 ___ ___ ___ ___	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __264___ V. The circuit – breaker is in the open position	**E_{1-1}** [mA]	**E_{1-2}** [mA]	**E_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2				N/A
	L3				N/A
	L4(N)				N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P

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Clause	Requirement + Test	Result - Remark			Verdict
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	___60,8__A			--
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___101___A			--
		E_{1-1} [min]	**E_{1-2}** [min]	**E_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	2min19s	1min22s	4min07s	P
9.12.11.4.2	**Test „E_1“(Test at service short-circuit capacity) three phase tests for single circuit-breakers**	**E_{1-4}**	**E_{1-5}**	**E_{1-6}**	P
	Service short-circuit capacity (Ics) .....:	____6_____kA			--
	Test circuit: figure .....:	____3_____			--
	Test voltage 1,05 Un	____438_____V			--
	Prospective current .....:	_____6,0____kA			--
	Prospective current obtained .....:	_____6,24____kA			--
	Power factor .....:	__0,65-0,70_____			--
	Power factor obtained .....:	___0,67_____			--
	Sequence .....:	____3/5_____			--
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	“a” = ___50___ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			P
	I_{Peak} (A) max. value .....:	___5,43_____kA			P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--

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Clause	Requirement + Test	Result - Remark			Verdict
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __264___ V. The circuit – breaker is in the open position	**E_{1-4}** [mA]	**E_{1-5}** [mA]	**E_{1-6}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	-	-	-	N/A
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.3)				P
	a)				P
	b)				N/A
	c)				P
	d) 2000 V				P
	Test current 0.85x non-tripping current (1,13 I_N)	____60,8_____A			P
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___101_____A			P
		E_{1-4} [min]	**E_{1-5}** [min]	**E_{1-6}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	1min23s	3min27s	2min50s	P

	TESTS „E_1“ 3 samples D6, 1POLE,				P
9.12.11.4.2	**Test E_1: Test at service short-circuit capacity**	**E_{1-1}**	**E_{1-2}**	**E_{1-3}**	**P**
	Service short-circuit capacity (Ics) .....:	6kA			--
	Test circuit: figure .....:	3			--
	Test voltage 1,05 Un	256V			--
	Prospective current .....:	6kA			--
	Prospective current obtained .....:	6,06 kA			--
	Power factor .....:	0,65…0,70			--
	Power factor obtained .....:	0,68			--
	Sequence .....:	O – O – CO			--

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Clause	Requirement + Test	Result - Remark			Verdict
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = __50____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:	2,95kA	2,96kA	3,61kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	15,1 ___ ___ ___	19,7 ____ ___ ___	30,7 ___ ___ ___ ___	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __264___ V. The circuit – breaker is in the open position	E_{1-1} [mA]	E_{1-2} [mA]	E_{1-3} [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2				N/A
	L3				N/A
	L4(N)				N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	___1,45__A			--
	- Passed for 1h				P

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Clause	Requirement + Test	Result - Remark			Verdict
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___2,40___A			--
		E_{1-1} [min]	**E_{1-2}** [min]	**E_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	3min29s	4min07s	3min21s	P
9.12.11.4.2	**Test „E_1“(Test at service short-circuit capacity) three phase tests for single circuit-breakers**	**E_{1-4}**	**E_{1-5}**	**E_{1-6}**	P
	Service short-circuit capacity (Ics) .....:	____6_____kA			--
	Test circuit: figure .....:	____3_____			--
	Test voltage 1,05 Un	____438_____V			--
	Prospective current .....:	_____6____kA			--
	Prospective current obtained .....:	_____6,24____kA			--
	Power factor .....:	__0,65-0,70_____			--
	Power factor obtained .....:	___0,67_____			--
	Sequence .....:	____3/5_____			--
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	“a” = ___50___ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			P
	I_{Peak} (A) max. value .....:	___3,70_____kA			P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __264___ V. The circuit – breaker is in the open position	**E_{1-4}** [mA]	**E_{1-5}** [mA]	**E_{1-6}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	-	-	-	N/A

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Clause	Requirement + Test	Result - Remark			Verdict
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.3)				P
	a)				P
	b)				N/A
	c)				P
	d) 2000 V				P
	Test current 0.85x non-tripping current (1,13 I_N)	____5,80_____A			P
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___9,60_____A			P
		E_{1-4} [min]	**E_{1-5}** [min]	**E_{1-6}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	2min11s	3min33s	4min17s	P

	TESTS „E_1“ 3 samples D63, 2POLE,				P
9.12.11.4.2	**Test E_1: Test at service short-circuit capacity**	**E_{1-1}**	**E_{1-2}**	**E_{1-3}**	**P**
	Service short-circuit capacity (Ics) .....:	6kA			--
	Test circuit: figure .....:	3			--
	Test voltage 1,05 Un	437V			--
	Prospective current .....:	6,0kA			--
	Prospective current obtained .....:	6,15 kA			--
	Power factor .....:	0,65…0,70			--
	Power factor obtained .....:	0,66			--
	Sequence .....:	O – O – CO			--
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	“a” = __50____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:	5,93kA	5,05kA	4,75kA	--

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Clause	Requirement + Test	Result - Remark			Verdict
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	172 ___ ___ ___	119 ____ ___ ___	85,7 — ___ ___ ___	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __457___ V. The circuit – breaker is in the open position	**E_{1-1}** [mA]	**E_{1-2}** [mA]	**E_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	<0,01	<0,01	<0,01	P
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	___60,8__A			--
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___101___A			--
		E_{1-1} [min]	**E_{1-2}** [min]	**E_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	1min19s	4min27s	5min02s	P

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Clause	Requirement + Test	Result - Remark	Verdict

	TESTS „E_1“ 3 samples D6, 2POLE,				P
9.12.11.4.2	**Test E_1: Test at service short-circuit capacity**	**E_{1-1}**	**E_{1-2}**	**E_{1-3}**	**P**
	Service short-circuit capacity (Ics) .....:	6kA			--
	Test circuit: figure .....:	3			--
	Test voltage 1,05 Un	437V			--
	Prospective current .....:	6,0kA			--
	Prospective current obtained .....:	6,15 kA			--
	Power factor .....:	0,65…0,70			--
	Power factor obtained .....:	0,66			--
	Sequence .....:	O – O – CO			--
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	“a” = __50____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:	3,03kA	3,78kA	2,15kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	32,3 ___ ___ ___	62,8 ____ ___ ___	18,0_ — ___ ___ ___	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P

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Clause	Requirement + Test	Result - Remark	Verdict

	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __457___ V. The circuit – breaker is in the open position	**E_{1-1}** [mA]	**E_{1-2}** [mA]	**E_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	<0,01	<0,01	<0,01	P
	L3	-	-	-	N/A
	L4(N)	-	-	-	N/A
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	___5,80__A			--
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___9,60___A			--
		E_{1-1} [min]	**E_{1-2}** [min]	**E_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	2min19s	4min21s	3min11s	P

	TESTS „E_1“ 3 samples D63, 4POLE				P
9.12.11.4.2	**Test E_1: Test at service short-circuit capacity**	**E_{1-1}**	**E_{1-2}**	**E_{1-3}**	**P**
	Service short-circuit capacity (Ics) .....:	6kA			--
	Test circuit: figure .....:	3			--
	Test voltage 1,05 Un	438V			--
	Prospective current .....:	6kA			--
	Prospective current obtained .....:	6,24 kA			--
	Power factor .....:	0,65…0,70			--
	Power factor obtained .....:	0,67			--
	Sequence .....:	O – O – CO			--
	T (min) .....:	____3_____min			--

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Clause	Requirement + Test	Result - Remark			Verdict
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = __50____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value.....:	4,88kA	4,97kA	4,66kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	110 ___ _____	128 ____ ___ ___	145_ — ___ ___ ___	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--
9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __457___ V. The circuit – breaker is in the open position	**E_{1-1}** [mA]	**E_{1-2}** [mA]	**E_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	<0,01	<0,01	<0,01	P
	L3	<0,01	<0,01	<0,01	P
	L4(N)	<0,01	<0,01	<0,01	P
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	___60,8__A			--
	- Passed for 1h				P
	- Passed for 2h				N/A

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Clause	Requirement + Test	Result - Remark			Verdict
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___101___A			--
		E_{1-1} [min]	**E_{1-2}** [min]	**E_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	5min21s	2min15s	3min21s	P
	TESTS „E_1“ 3 samples D6, 4POLE				P
9.12.11.4.2	**Test E_1: Test at service short-circuit capacity**	**E_{1-1}**	**E_{1-2}**	**E_{1-3}**	**P**
	Service short-circuit capacity (Ics) .....:	6kA			--
	Test circuit: figure .....:	3			--
	Test voltage 1,05 Un	438V			--
	Prospective current .....:	6,0kA			--
	Prospective current obtained .....:	6,24 kA			--
	Power factor .....:	0,65…0,70			--
	Power factor obtained .....:	0,67			--
	Sequence .....:	O – O – CO			--
	T (min) .....:	____3_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	“a” = __50____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:	2,89kA	3,07kA	3,92kA	--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	18,9 ___ ___ ___	34,5 ____ ___ ___	43,8_ — ___ ___ ___	P
	- No permanent arcing				P
	- No flash-over between poles or between poles and frame				P
	- No blowing of the fuses F and F′				P
	- Polyethylene foil shows no holes				P
	After the test:				--

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Clause	Requirement + Test	Result - Remark	Verdict

9.12.12.1	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				P
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= __457___ V. The circuit – breaker is in the open position	**E_{1-1}** [mA]	**E_{1-2}** [mA]	**E_{1-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	P
	L2	<0,01	<0,01	<0,01	P
	L3	<0,01	<0,01	<0,01	P
	L4(N)	<0,01	<0,01	<0,01	P
	Electric strength test:				P
	Test voltage 1500 V (see 9.7.2)				P
	a)				P
	b)				N/A
	c)				P
	d)				N/A
	e) 2000 V				N/A
	Test current 0.85x non-tripping current (1,13 I_N)	___5,80__A			--
	- Passed for 1h				P
	- Passed for 2h				N/A
	Current is then steadily increased to 1,1 x tripping current (1,45 I_N) within 5s	___9,60___A			--
		E_{1-1} [min]	**E_{1-2}** [min]	**E_{1-3}** [min]	--
	Tripping within ☒ 1 hour / ☐ 2 hour	5min11s	3min20s	2min11s	P

	TESTS „E_2“ 3 + 4 samples				
9.12.11.4.3	**Test: E2 (Test at rated short-circuit capacity)**	**E_{2-1}**	**E_{2-2}**	**E_{2-3}**	**N/A**
	Rated short-circuit capacity (Icn).....:				--
	Test circuit: figure .....:				--
	Test voltage 1,05 Un				--
	Prospective current .....:				--
	Prospective current obtained.....:				--
	Power factor .....:				--
	Power factor obtained .....:				--

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Clause	Requirement + Test	Result - Remark	Verdict

	Sequence .....:	_____			--
	T (min) .....:	_____min			--
9.12.9.2	Test in free air copper wire F': ☒ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	"a" = _____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:				--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4(N)	__ ___ ___ ___	__ ____ ___ ___	 ___ ___ ___	N/A
	- No permanent arcing				N/A
	- No flash-over between poles or between poles and frame				N/A
	- No blowing of the fuses F and F′				N/A
	- Polyethylene foil shows no holes After the test:				N/A --
9.12.12.2	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				N/A
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= _____ V. The circuit – breaker is in the open position	**E_{2-1}** [mA]	**E_{2-2}** [mA]	**E_{2-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	N/A
	L2				N/A
	L3				N/A
	L4(N)				N/A
	Electric strength test:				N/A
	Test voltage 900 V (see 9.7.3)				N/A
	a)				N/A
	b)				N/A
	c)				N/A
	d)				N/A
	e)				N/A
	Test current 2,8 I_N	_____A			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Tripping within > 0,1 s up to	[s]	[s]	[s]		--
	- 60 s					N/A
	- 120 s					N/A
9.12.11.4.3	**Test „E_2“(Test at rated short-circuit capacity) three phase tests for single circuit-breakers**	**E_{2-4}**	**E_{2-5}**	**E_{2-6}**	**E_{2-7}**	**N/A**
	Rated short-circuit capacity (Icn).....:					--
	Test circuit: figure .....:					--
	Test voltage 1,05 Un					--
	Prospective current .....:					--
	Prospective current obtained.....:					--
	Power factor .....:					--
	Power factor obtained .....:					--
	Sequence .....:					--
	T (min) .....:	_____min				--
9.12.9.2	Test in free air copper wire F': ☒ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	"a" = _____ mm				--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm				--
	I_{Peak} (A) max. value.....:					--
	- No permanent arcing					N/A
	- No flash-over between poles or between poles and frame					N/A
	- No blowing of the fuses F and F′					N/A
	- Polyethylene foil shows no holes					N/A
	After the test:					--
9.12.12.2	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.					N/A
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= _____ V. The circuit – breaker is in the open position	**E_{2-4}** [mA]	**E_{2-5}** [mA]	**E_{2-6}** [mA]	**E_{2-7}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	<0,01	N/A
	L2					N/A
	L3					N/A
	L4(N)					N/A

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Clause	Requirement + Test	Result - Remark				Verdict
	Electric strength test:					N/A
	Test voltage 900 V (see 9.7.3)					N/A
	a)					N/A
	b)					N/A
	c)					N/A
	d)					N/A
	e)					N/A
	Test current 2,8 I_N	_____A				N/A
	Tripping within > 0,1 s up to	[s]	[s]	[s]	[s]	--
	- 60 s					N/A
	- 120 s		7			N/A

	TESTS „E_3“ 3 samples				N/A
9.12.11.4.4	**Test: E_3 (Test at making and breaking capacity on an individual pole (Icn1)**	**E_{3-1}**	**E_{3-2}**	**E_{3-3}**	N/A
	Icn1 .....:	__kA			--
	Test circuit: figure .....:	____			--
	Test voltage 1,05 Un	_____V			--
	Prospective current.....:	____kA			--
	Prospective current obtained.....:	_____kA			--
	Power factor.....:				--
	Power factor obtained.....:				--
	Sequence.....:	____O-CO_____			--
	T (min).....:	_____min			--
9.12.9.2	Test in free air copper wire F': ☐ 0,12 mm / ☒ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☒ 1,5 Ohm	"a" = _____ mm			--
9.12.9.3	Test in enclosures copper wire F': ☐ 0,12 mm / ☐ 0,16 mm resistor R' : ☐ 0,75 Ohm / ☐ 1,5 Ohm	dimensions of enclosure: _____x_____x_____mm			--
	I_{Peak} (A) max. value .....:	__5,19_kA			--
	$I^2t \leq$ _____ kA^2s	[kA^2s]	[kA^2s]	[kA^2s]	--
	Max. $I^2t \leq$ _____kA^2s L1 L2 L3 L4 - No permanent arcing	_ ____ ___ ___	__ ____ ____	 ___ ___ ___	

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Clause	Requirement + Test	Result - Remark			Verdict
	- No flash-over between poles or between poles and frame				
	- No blowing of the fuses F and F′				
	- Polyethylene foil shows no holes				
	After the test:				
9.12.12.2	The circuit-breakers shall show no damage impairing their further use and shall maintenance, withstand the following tests.				
	a) leakage current across open contacts, according to 9.7.5.3, each pole is supplied at a voltage 1,1 times Un.= _253___ V. The circuit – breaker is in the open position	**E_{3-1}** [mA]	**E_{3-2}** [mA]	**E_{3-3}** [mA]	--
	The leakage current shall not exceed 2 mA L1	<0,01	<0,01	<0,01	
	L2				N/A
	L3				N/A
	L4				N/A
	Electric strength test:				
	Test voltage 900 V (see 9.7.3)				
	a)				
	b)				
	c)				
	d)				
	e)				
	Test current 2,8 I_N	_____A			
	Tripping within > 0,1 s up to	[s]	[s]	[s]	--
	- 60 s				
	- 120 s				N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Annex E		N/A
	Special requirements for auxiliary circuits for safety extra-low voltage		N/A
8.1.3	**Clearances and creepage distances**		N/A
	Additional note to table 4 NOTE 4 live parts in auxiliary circuits intended to be connected to safety extra low voltages shall be separated from circuits with higher voltages in accordance with the requirements of 411.1.3.3 of IEC 60364-4-41		--
	Compliance is checked by inspection		N/A
9.7.4	**Dielectric strength of the auxiliary circuits**		N/A
	Note: A test for circuits intended for connection to safety extra-low voltage is under consideration		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Annex J		N/A
	Particular requirements for circuit-breakers with screw less type terminals for external copper conductors (In not exceeding 20 A, cross-sectional area up to 4 mm^2		N/A
J.6	**Marking**		**N/A**
	Universal terminals		--
	- no marking		N/A
	Non-universal		--
	- declared for rigid-solid conductors	marked with: “sol”	N/A
	- declared for rigid(solid and stranded) .....:	marked with: “r”	N/A
	- declared for flexible conductors .....:	Marked with: “f”	N/A
	The markings should appear on the circuit-breaker or, if available space is not sufficient, on smallest package unit or in technical information .....:		N/A
	Indication of length of insulation to be removed on the circuit-breaker.....:	_____mm	N/A
J.7	**Standard conditions for operation in service**		N/A
	Clause 7 applies		N/A
J.8	**Constructional requirements**		N/A
	Clause 8 applies with the follow modifications:		N/A
	In clause 8.1.5 only –5.1, -5.2. –5.3, - 5.6 and - 5.7 apply		N/A
	Compliance is checked by inspection and by the tests of J.9.1 and J.9.2		N/A
J.8.1	**Connection or disconnection of conductors**		N/A
	The connection or disconnection shall be made by:		N/A
	A general purpose tool or by a convenient device integral with the terminal or		N/A
	for rigid conductors by simple insertion		N/A
	For disconnection an operation other than a pull shall be necessary (push-wire terminals)		N/A
	Universal terminals shall accept rigid (solid or stranded and flexible unprepared conductors		N/A
	Non-universal terminals shall accept conductors declared by the manufacturer		N/A
	Compliance is checked by inspection and by the tests of J.9.1 and J.9.2		N/A
J.8.2	**Dimensions of connectable conductors**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The dimensions of connectable conductors are given in table J.1		N/A
	The ability to connect these conductors shall be checked by inspection and by the tests of J.9.1 and J.9.2		N/A
J.8.3	**Connectable cross-sectional areas**		N/A
	The nominal cross-sections to be clamped are given in table J.2		N/A
	Compliance is checked by inspection and by the tests of J.9.1 and J.9.2		N/A
J.8.4	**Insertion and connection of conductors**		N/A
	The insertion and disconnection of the conductors shall be made in accordance with the manufacturer's instructions		N/A
J.8.5	**Design and construction of terminals**		N/A
	Terminals shall be designed and constructed that:		N/A
	- each conductor is clamped individually		N/A
	- connection or disconnection connectors connected or disconnected separate or same		N/A
	- inadequate insertion of the conductor is avoided		N/A
	Compliance is checked by inspection and by the tests of J.9.1 and J.9.2		N/A
J.8.6	**The terminals shall be resistant to ageing**		N/A
	Compliance is checked by the tests of J.9.3		N/A
J.9	**Tests**		--
	Clause 9 applies, by replacing 9.4 and 9.5 by the follow		N/A
J.9.1	**Test of reliability of screw less terminals**		N/A
J.9.1.1	**Reliability of screw less system**		N/A
	5 times connection and disconnection		N/A
	3 rigid conductors min. cross-section max. cross-section	_____mm^2 _____mm^2	N/A
	3 flexible conductors min. cross-section max. cross-section	_____mm^2 _____mm^2	N/A
	After tests, the terminal shall not be damage in such a way as to impair its further use		N/A
J.9.1.2	**Test of reliability of connection**		N/A
	3 terminals of poles of new sample are fitted with new copper conductors according table J.2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	rigid conductors min. cross-section max. cross-section	_____mm^2 _____mm^2	N/A
	flexible conductors min. cross-section max. cross-section	_____mm^2 _____mm^2	N/A
	Each conductor is either pushed as far as possible into the terminal or shall be inserted so that adequate connection is obvious		N/A
	After tests, no wire of the conductor shall have escaped outside the terminals		N/A
J.9.2	**Tests of reliability of terminals for external conductors: Mechanical strength**		N/A
	Three terminals of new samples are fitted with new conductors of the type and of the minimum and maximum cross sectional area according table J.2.		N/A
	Each conductor is subjected to a pull force of value shown in table J.3. for 1 min		N/A
	Terminal screw torque : $^2/_3$ of table 11	_____ Nm	N/A
	rigid conductors min. cross-section max. cross-section	_____ mm^2 / _____N _____ mm^2 / _____N	N/A
	flexible conductors min. cross-section max. cross-section	_____ mm^2 / _____N _____ mm^2 / _____N	N/A
	During the test the conductor shall not slip out of the terminal		N/A
J.9.3	**Cycling test**		N/A
	The test is carried out with new copper conductors having a cross sectional area according table 10	_____ mm^2	N/A
	The test is carried out on new samples(a sample is one pole, the number of which is defined below, according the type of terminal		N/A
	- universal terminals for rigid (solid and stranded) and flexible conductors	3 + 3 samples	N/A
	- non-universal terminals for solid conductors only	3 samples	N/A
	-- non- universal terminals for rigid (solid and stranded) conductors	3 + 3 samples	N/A
	- non-universal terminals for flexible conductors only	3 samples	N/A
	The conductors are connected in series as in normal use to each of the three samples as defined on fig. J.1.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The sample is provided with a hole or equivalent in order to measure the voltage drop on the terminal		N/A
	The test arrangement is placed in a heating cabinet which is initially on 20°C		N/A
	Except the cooling period the test current (rated current) is applied to the circuit	I test _____ A	N/A
	The samples shall be subjected to 192 temperature cycles, each cycle having a duration of +/- 1 hour		N/A
	Description of the temperature cycle: In 20 min raised to 40°C, maintained for 10 min, then cool down in 20 min to 30 °C, maintained for 10 min. For measurement of the voltage drop it is allowed to cool down to 20 °C		N/A
	The maximum voltage drop, measured on each terminal, at the end of the 192nd cycle, with Inom. shall not exceed the smaller of the two following values - either 22,5 mV - or 1,5 times the value measured after the 24 cycle	Uv max. _____ mV	N/A
	Sample after 24 cycles: rigid conductors (mV) flexible conductors (mV)	J_1 / J_2 / J_3 _____ _____ _____ _____ _____ _____	N/A
	Sample after 192 cycles: rigid conductors (mV) flexible conductors (mV)	J_1 / J_2 / J_3 _____ _____ _____ _____ _____ _____	N/A
	After this test the samples shall show no changes evidently impairing further use, such as cracks, deformations or like		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Annex K		N/A
	Particular requirements for circuit-breakers with flat quick-connect terminations		--
K.6	**Marking**		N/A
	The whole of clause 6 applies		N/A
	Addition after the lettered item k		--
	The following information regarding the female connector according to IEC 61210 and the type of conductor to be used shall be given in the manufacturer's instructions		N/A
	a) manufacturers name or trade mark		--
	b) type reference		N/A
	c) information on cross-sections of conductors and colour code of insulating female connectors (see table K.1)		N/A
	d) the use of only silver or tin-plated copper alloys		N/A
K.7	**Standard conditions for operation in service**		N/A
	Clause 7 applies		N/A
K.8	**Constructional requirements**		N/A
	Clause 8 applies with the follow modifications:		N/A
	replacement of 8.1.3 by:		N/A
K.8.1	**Clearances and creepage distances (see annex B)**		N/A
	Subclause 8.1.3 applies, the female connectors being fitted to the male tabs of the circuit-breaker		N/A
	Replacement of 8.1.5 by:		N/A
K.8.2	**Terminals for external conductors**		N/A
K.8.2.1	Male tabs and female connectors shall be of a metal having mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use		N/A
K.8.2.2	The nominal width of male tab is 6,3 mm and the thickness 0,8 mm, applicable to rated currents up to and including 16 A NOTE 1:The use for rated currents up to and including 20 A is accepted in BE, FR, IT, PT, ES and US		N/A
	The dimensions of the male tab shall comply with those specified in table K.3 and in figures K.2, K3, K4, K5, where the dimensions A, B, C, D, E, F, J, M, N and Q are mandatory		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The dimensions of the female connector which may be fitted-on are given in figure K.6 and in table K.4		N/A
	Compliance is checked by inspection and by measurement	See table on page _____	N/A
K.8.2.3	**Male tabs shall be securely retained**		N/A
	Compliance is checked by the mechanical overload test of K.9.1		N/A
K.9	**Tests**		N/A
	Clause 9 applies, with follow modifications:		N/A
	Replacement of 9.5 by:		N/A
K.9.1	**Mechanical overload-force**		N/A
	10 terminals of circuit-breakers, mounted as normal use are subjected to a axial push force and successively the axial pull force specified in table K2 applied to male tab once	push force 96 N pull force 88 N	N/A
	No damage which could impair further use shall occur to the tab or to the circuit-breaker in which the tab is integrated		N/A
	Addition to 9.8.3:		N/A
	Fine –wire thermocouples shall be placed in such a way as not to influence the contact or the connection area. An example of placement is shown in fig K.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

		Dimensions of tabs according Table K.3		Measured in mm	Verdict
		Minimum	Maximum		N/A
A	Dimple	0,7	1,0	_____	N/A
	Hole	0,5	1,0	_____	N/A
B	Dimple	7,8 min		_____	N/A
	Hole	7,8 min		_____	N/A
C	Dimple	0,77	0,84	_____	N/A
	Hole	0,77	0,84	_____	N/A
D	Dimple	6,20	6,40	_____	N/A
	Hole	6,20	6,40	_____	N/A
E	Dimple	3,6	4,1	_____	N/A
	Hole	4,3	4,7	_____	N/A
F	Dimple	1,6	2,0	_____	N/A
	Hole	1,6	2,0	_____	N/A
J	Dimple	8°	12°	_____	N/A
	Hole	8°	12°	_____	N/A
M	Dimple	2,2	2,5	_____	N/A
	Hole	---	---	---	---
N	Dimple	1,8	2,0	_____	N/A
	Hole	---	---	---	---
P	Dimple	0,7	1,8	_____	N/A
	Hole	0,7	1,8	_____	N/A
Q	Dimple	8,9 min	---	_____	N/A
	Hole	8,9 min	---	_____	N/A
B3			7,8 max	_____	N/A
L2			3,5 max	_____	N/A

IEC 60898-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Annex L		N/A
	Specific requirements for circuit-breakers with screw-type terminals for external untreated aluminium conductors and with aluminium screw-type terminals for use with copper or with aluminium conductors		N/A
L.6	**Marking**		**N/A**
	In addition to clause 6 the following apply:		N/A
	Terminal marking according table L.1, on the circuit breaker, near the terminals		--
	Conductor types accepted: Copper only Aluminium only Aluminium and copper	 ☐ None ☐ "Al" ☐ "Al/Cu"	N/A N/A N/A N/A
	Other information concerning the number of conductors, screw torque (if different from table 11) and cross-section shall be indicated on the circuit-breaker	_____ Nm _____ mm²	N/A
L.7	**Standard conditions for operation in service**		N/A
	Clause 7 applies		N/A
L.8	**Constructional requirements**		N/A
	Clause 8 applies with the following exceptions:		N/A
8.1.5.2	is completed by:		N/A
	For connection of aluminium conductors, circuit-breakers shall be provided with screw-type terminals allowing the connection of conductors having nominal cross-sections as shown in table L.2		N/A
	Terminals for the connection of aluminium conductors and terminals of aluminium for the connection of copper or aluminium conductors shall have mechanical strength adequate to withstand the tests of 9.4, with the test conductors tightened with the torque indicated in table 11, or with the torque specified by the manufacturer, which shall never be lower than that specified in table 11.		N/A
	Compliance is checked by inspection, by measurement and by fitting in turn one conductor of the smallest and one of the largest cross-section areas as specified		N/A
8.1.5.4	Terminals shall allow the conductors to be connected without special preparation		N/A
	Compliance is checked by inspection and by the tests of L.9		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.9	**Tests**		N/A
	Clause 9 applies with the following modifications/additions:		N/A
	For the tests which are influenced by the material of the terminal and the type of conductor that can be connected, the test conditions of table L.3 are applied		N/A
	Additionally the test of L.9.2 is carried out on terminals separated from the circuit-breaker		N/A
L.9.2	**Current cycling test**		N/A
	This test is carried out on separate terminals		N/A
	The general arrangement of the samples shall be as shown in figure L.1		N/A
	90 % of torque stated by the manufacturer or selected in table 11 used for the specimens	torque:_____Nm	N/A
	The test is carried out with conductors according to table L.5. The length of the test conductor from the point of entry to the screw-type terminal specimens to the equalizer shall be as in table L.6	cross-section:_____mm^2 minimum conductor length:_____mm	N/A
	Cross section of equalizer not greater than that given in table L.7	max. crosssection_____mm^2	N/A
L.9.2.5	Test method and acceptance criteria		N/A
	Test loop subjected to 500 cycles of 1h current-on and 1h current-off, starting at an a.c. current value of 1,12 times the test current value determined in table L.8	test current:_____A	N/A
	Near the end of each current-on period of the first 24 cycles, the current shall subsequently be adjusted to raise the temperature of the reference conductor to 75°C		N/A
	At the end of the 25^{th} cycle the test current shall be adjusted the last time and the stable temperature shall be recorded as the first measurement. No further adjustment of test current for the remainder of the test		N/A
	Temperatures recorded for at least one cycle of each working day, and after approximately 25, 50, 75, 100, 125, 175, 225, 350, 425 and 500 cycles		N/A
	For each screw-type terminal		N/A
	- the temperature rise shall not exceed 110 K		N/A
	- the stability factor Sf shall not exceed ± 10 °C		N/A

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Clause	Requirement + Test	Result - Remark		Verdict
	ambient air temperature: _____°C	max. temperature rise [K]	max. stability factor Sf [°C]	N/A
	Terminal 1			N/A
	Terminal 2			N/A
	Terminal 3			N/A
	Terminal 4			N/A
	Terminal 5			N/A
	Terminal 6			N/A
	Terminal 7			N/A
	Terminal 8			N/A

	TABLE: Heating Test		**P**
	Test voltage (V) ..... :		**—**
	Ambient (°C) .....:		**—**

Thermocouple Locations	**max. temperature measured, (K)**	**max. temperature limit, (K)**

Supplementary information:
Refer to test sequence B of this test report about temperature rise

	TABLE: Dielectric Strength	**P**

Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**

Supplementary information:
Refer to test sequence B of this test report about Dielectric Strength

	TABLE: insulation resistance measurements	**N/A**

Insulation resistance R between:	**R (MΩ)**	**Required R (MΩ)**
Between mains poles (primary fuse disconnected)		N/A
Between parts separated by basic or supplementary insulation		N/A
Between parts separated by double or reinforced insulation		N/A

Supplementary information:

	TABLE: Impact Resistance			N/A
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**	
Supplementary information:				

	TABLE: Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance dcr at/of:	**Up (V)**	**U r.m.s. (V)**	**Required cl (mm)**	**cl (mm)**	**required dcr (mm)**	**dcr (mm)**
Supplementary information: Refer to test sequence A of this test report about Clearance And Creepage Distance						

	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm) ..... :		2		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information: Refer to test sequence A of this test report about Ball Pressure Test of Thermoplastics				

	TABLE: Needle- flame test (NFT)				N/A
Object/ Part No./ Material	Manufacturer/ trademark	Duration of application of test flame (ta); (s)	Ignition of specified layer Yes/No	Duration of burning (tb) (s)	Verdict

Supplementary information:

NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1
NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0

	TABLE: Resistance to heat and fire - Glow wire tests							**P**
Object/ Part No./ Material	**Manufacturer / trademark**	**Glow wire test (GWT); (°C)**						**Verdict**
		550	**650**		**750**		**960**	
			te	**ti**	**te**	**ti**		

Object/ Part No./ Material	**Manufacturer / trademark**	**Glow-wire flammability index (GWFI), °C**				**GW ignition temp. (GWIT), °C**		**Verdict**
		550	**650**	**750**	**850**	**675**	**775**	
		--	--	--				

The test specimen passed the glow wire test (GWT) with no ignition [(te – ti) ≤ 2s] (Yes/No) ..... :	P
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No)..... :	N/A
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)? ..... :	N/A
Ignition of the specified layer placed underneath the test specimen (Yes/No)..... :	N/A

Supplementary information:

550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF
The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances.

Refer to test sequence A of this test report about Resistance to heat and fire

	TABLE: Threaded Part Torque Test			**P**
Threaded part identification	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**	

Supplementary information:

Refer to test sequence A of this test report about mechanism.

IEC60898_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60898-1

EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Circuit-breakers for over current protection for household and similar installations
Part 1 - Circuit-breakers for a.c. operation

Differences according to ..... :	EN 60898-1:2019
Attachment Form No. ..... :	EU_GD_IEC60898_1D
Attachment Originator..... :	DEKRA Certification B.V.
Master Attachment..... :	2019-06-18

CENELEC COMMON MODIFICATIONS (EN)		-
Test item particulars:		-
Type of circuit-breaker ..... :	YCB9-63	-
Energy limiting class ..... :	☒ Class 1 ☐ Class 3	-
Value of rated operational voltage (Ue) and number of poles ..... :	☒ 230 V ☒ 230/400 V ☒ 400 V ☒ 1 P ☐ 1 P + N ☒ 2 P ☒ 3 P ☐ 3 P + N ☒ 4 P	P
Value of rated short-circuit capacities above 10 000 A up to and including 25 000 A..... :	☐ 15000 A ☐ 20000 A ☐ 25000 A	N/A
Rated impulse withstand voltage (Uimp)	4 kV	-

IEC60898_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Sequence A_1		
6	**MARKING AND OTHER INFORMATION**		**--**
6.1	***Standard marking:***		--
	f) Rated short circuit capacity in A within a rectangle, without symbol "A"	**6000 in rectangle**	P
	h) calibration temperature, if different from 30°C		P
	m) .....Energy limiting class in a square in accordance with annex ZA.		N/A
	Icn and the energy limiting class, when applied, marked both on the device and combined		P
	Irrespective of type (B, C or D), the manufacturer published in his literature the I^2t characteristic		P
	For rail mounting circuit-breakers, appropriate rail(s) are indicated in manufacturer's documentation.		P
6.2	***Additional marking***		--
	Additional marking to other standards (EN or IEC or other) is allowed under the follow conditions:		--
	- the circuit-breaker complies with all the requirements of the additional standard;		--
	- the relevant standard to which the additional marking refers is indicated adjacent to this marking and is clearly differentiated or separated from the standard marking according to cl. 6.1		--
6.3	**Guidance table for marking**		--
	Each CB shall be marked in a durable manner with all or, for small apparatus, according the guidance table for marking.		P
9.6	**TEST OF PROTECTION AGAINST ELECTRIC SHOCK**		--
	In case of knock-outs the test finger is applied with a force of 10 N		N/A

	Sequence C	**C_1 C_2 C_3**	
9.11.1	For single-pole circuit-breakers rated 230/400 V the test is made at 230 V.		P
9.11.3	Dielectric strength reduced to 900 V		P

IEC60898_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

	Sequence C_2 : Short-circuit test on circuit-breakers for use in IT systems		--
9.12.11.2.2	Test voltage 105 % of 400 V	_____V	P

	Sequence D		
9.10	**Tests: D_O**	**D_{O-1} D_{O-2} D_{O-3}**	P
	If the tests are made in a test chamber, it is made in still air; the volume of the chamber has no influence on the test results.		P
9.10.3.2	☒ For circuit-breakers of the B – Type		P
	Test current $3I_n$ (A), starting from cold	_____ A	P
	Opening time:	[s] [s] [s]	P
	- 0,1 s ≤ t ≤ 45 s (≤ 32A)		P
	- 0,1 s ≤ t ≤ 90 s (> 32A)		P
9.10.2.2	Test current 2,55 I_n (A) starting from cold for:	_____ A	P
	opening time not less than 1 s or more than	[s] [s] [s]	P
	- 60 s (≤ 32 A)		P
	- 120 s (> 32 A)		P
9.10.3.3	☒ For circuit-breakers of the C – Type		P
	Test current 5 I_n (A), starting from cold	_____ A	P
	Opening time:	[s] [s] [s]	P
	- 0,1 s ≤ t ≤ 15 s (≤ 32A)		P
	- 0,1 s ≤ t ≤ 30 s (> 32A)		P
9.10.2.2	Test current 2,55 I_n (A) starting from cold for:	_____ A	P
	opening time not less than 1 s or more than	[s] [s] [s]	P
	- 60 s (≤ 32 A)		P
	- 120 s (> 32 A)		P
9.10.3.4	☒ For circuit-breakers of the D – Type		P
	Test current 10 I_n (A), starting from cold	_____ A	P
	Opening time:	[s] [s] [s]	P
	- 0,1 s ≤ t ≤ 4 s (10 A < In ≤ 32 A)		P
	- 0,1 s ≤ t ≤ 8 s (10 A ≥ In > 32A)		P
	Test current 20 I_n (A) starting from cold		P
	Tripping less than 0,1 s		P

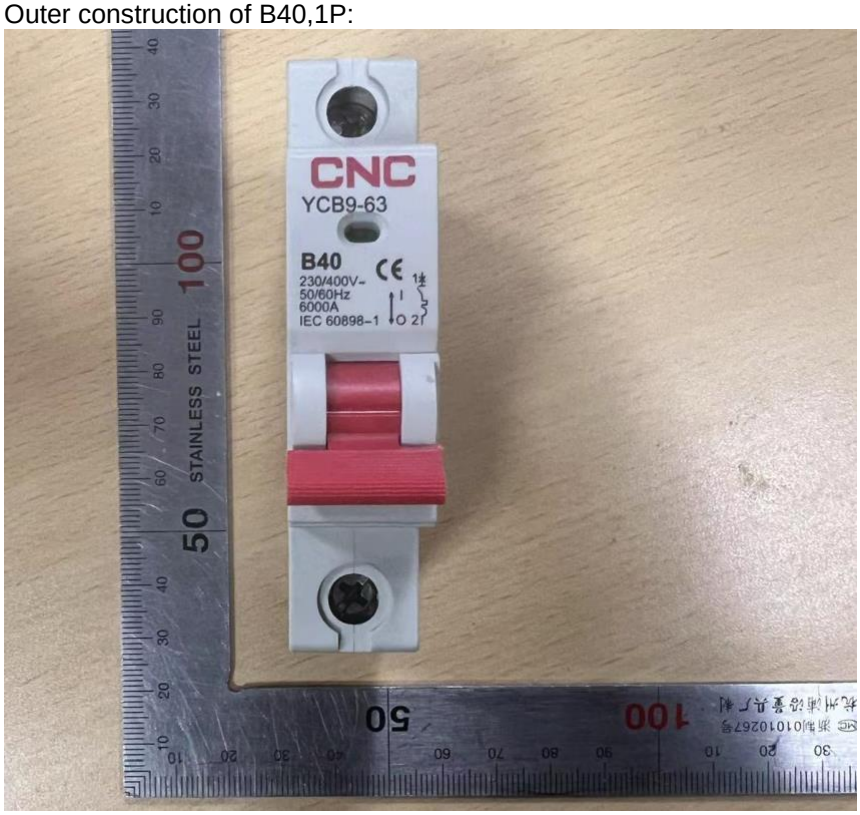
IEC60898_1D ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
9.10.2.2	Test current 2,55 I_n(A) starting from cold for:	_____ A	P
	opening time not less than 1 s or more than	[s] [s] [s]	P
	- 60 s (≤ 32 A)		P
	- 120 s (> 32 A)		P

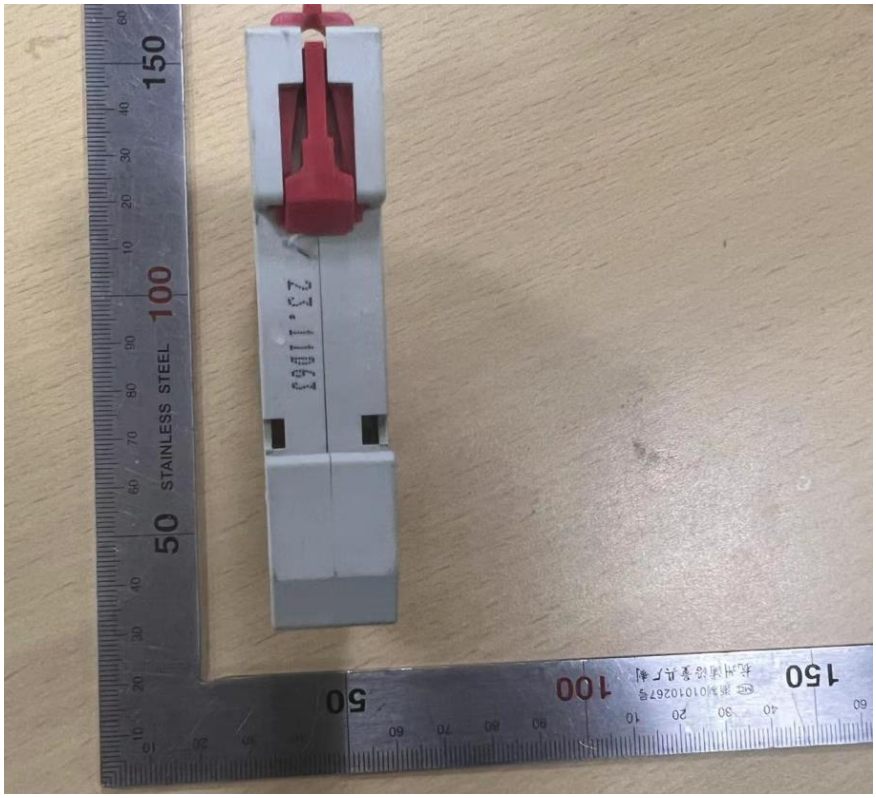
	Annex ZC	
	EN 60898-1 **Special national conditions**	
	For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.	
J.1	**Austria, Czech Republic, Netherlands, Norway and Switzerland**	
	The upper limit of current for use of screwless terminals is 16 A	N/A
J.3.3	**Austria, Belgium, Denmark, France, Germany, Italy, Portugal, Spain and Sweden**	
	Only universal screwless type terminals are accepted.	N/A
K.1	**Belgium, Italy and Spain**	
	The use of circuit-breakers with flat quick-connect terminations for rated currents up to and including 20 A is accepted.	N/A
K.8.2.2	**Belgium, Italy and Spain**	
	The use for rated currents up to and including 20 A is accepted	N/A

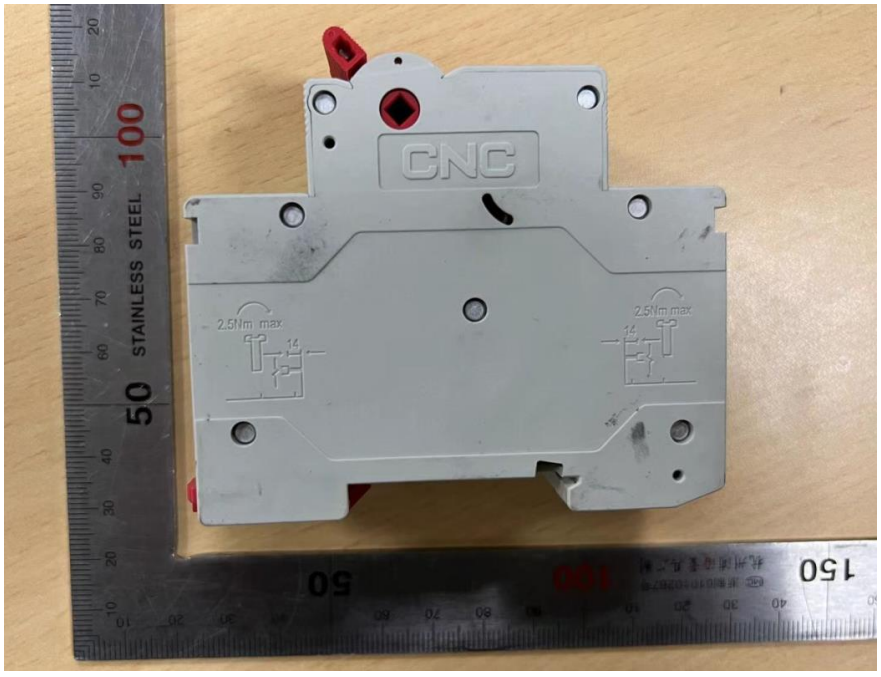
Attachment 1

Photographs

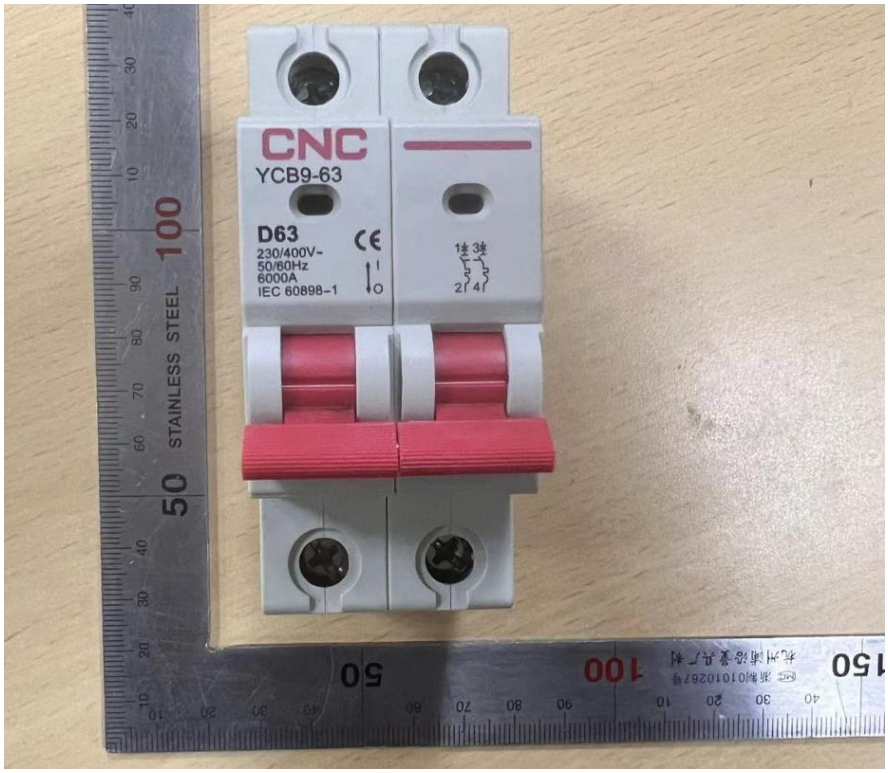
Outer construction of B40,1P:

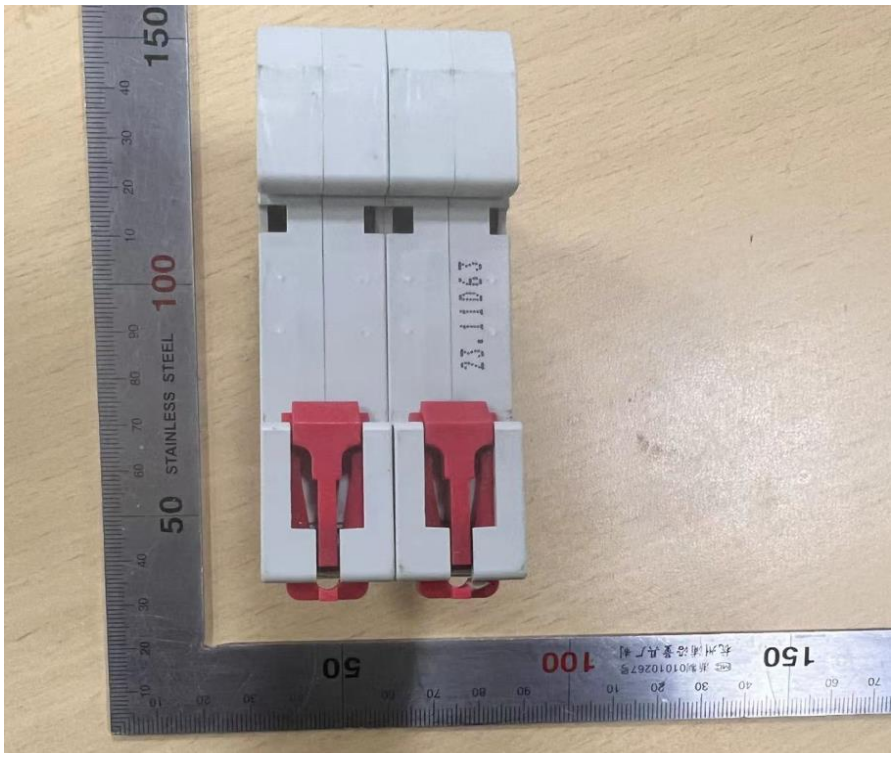


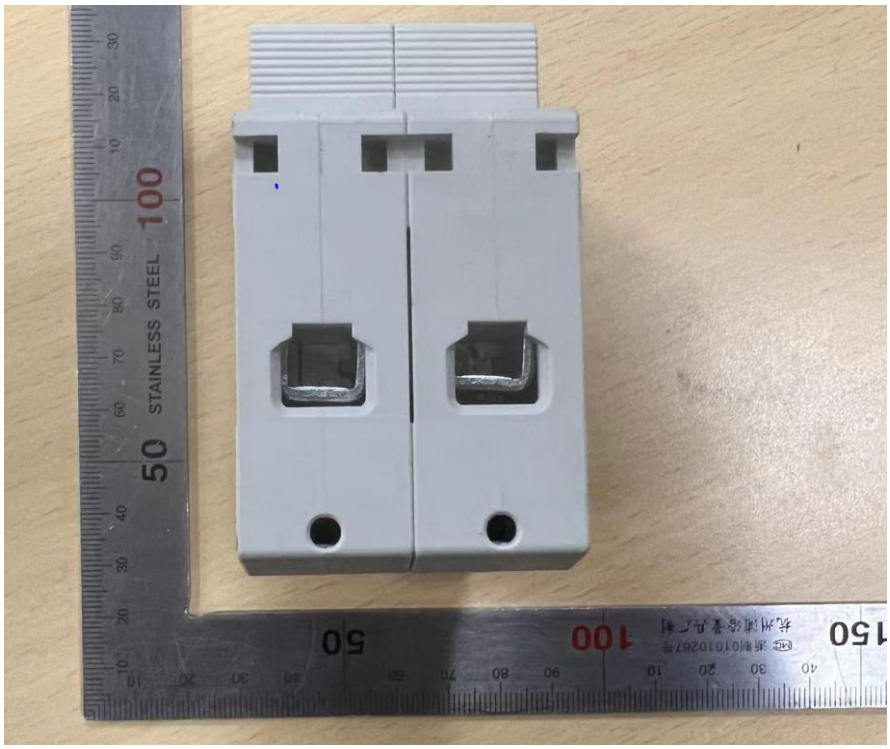

STAINLESS STEEL


CNC
2.5Nm max
2.5Nm max
STAINLESS STEEL

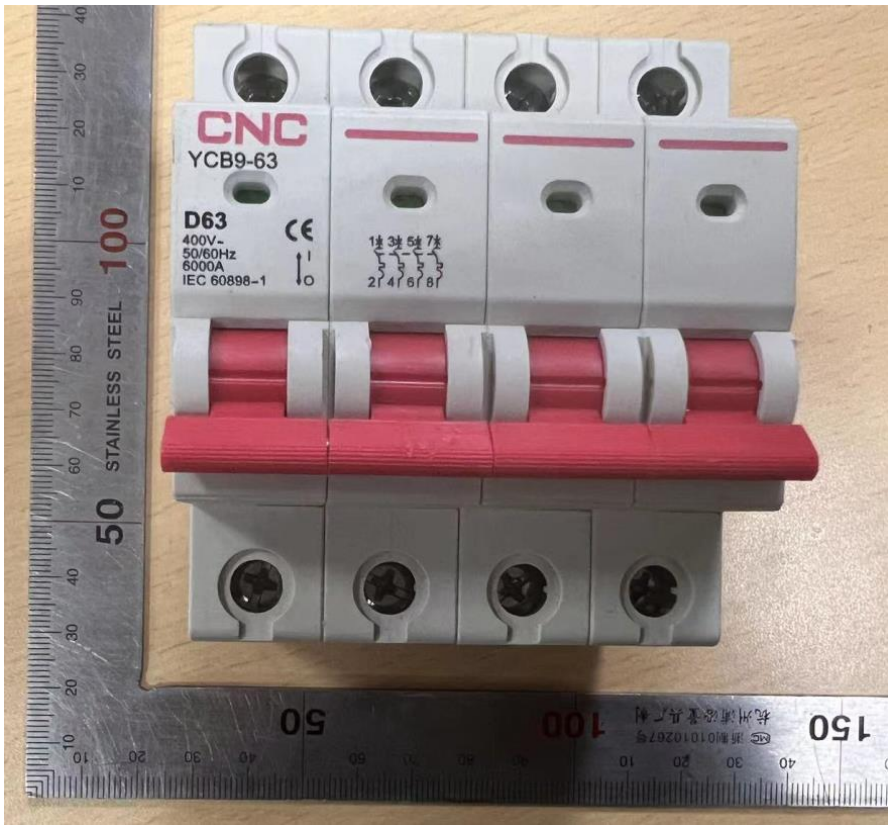
Outer construction of D63,2P:

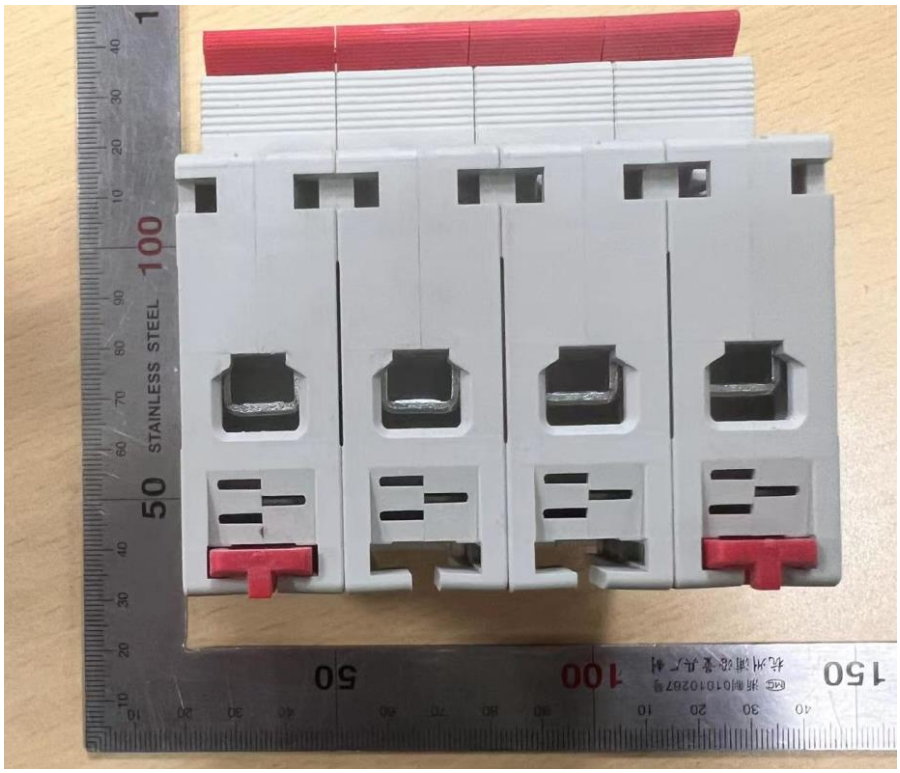


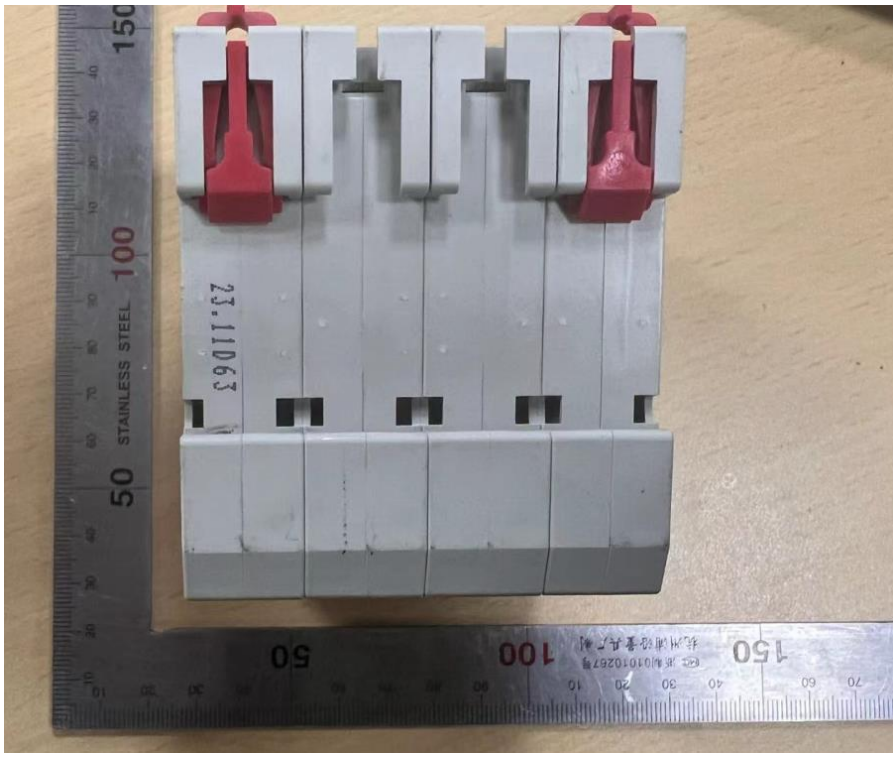




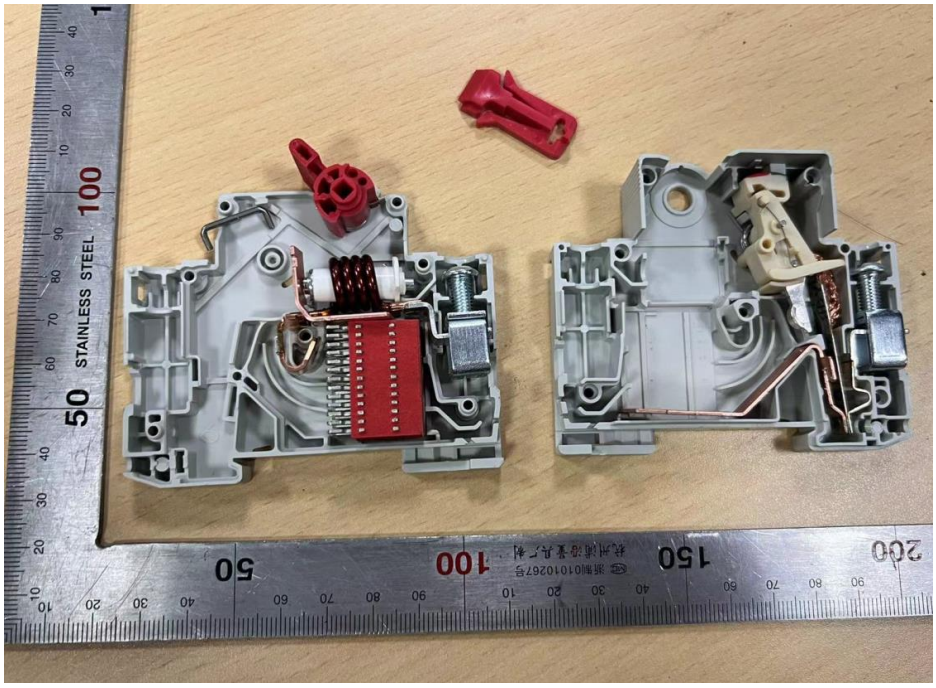
Outer construction of D63,4P:




STAINLESS STEEL


STAINLESS STEEL
ZJ.11063

Inter consutrction 1P B40:



End