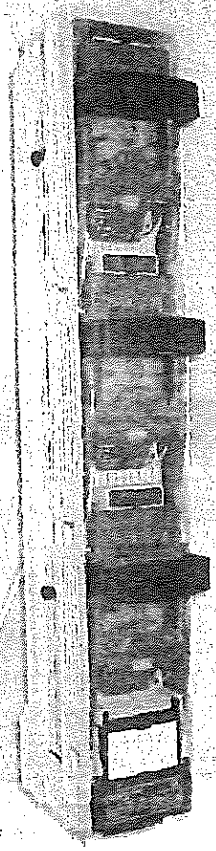
New generation of three pole LV fuse switches type NH

Neue Generation - Pronutec NH Sicherungslastschaltleisten

Triver +



pronutec
gorlan team

NEW GENERATION OF THREE POLE LV FUSE SWITCHES TYPE NH TRIVER +
NEUE GENERATION - PRONUTEC NH - Sicherungslastschaltleisten TRIVER +

As the market leader in fuse rails and fuse switches and thank to its policy innovation and constant development, Pronutec has designed a new generation of vertical fuse rails and switches NH-1/2/3 TRIVER+.

TRIVER+ is the new range of TRIVER, which aims to meet our customer needs in the recent years; anticipating the needs of the future.

Als Marktführer im Bereich der NH-Sicherungsleisten und NH-Sicherungslastschaltleisten und getreu der Unternehmensphilosophie "stetige Weiterentwicklung und Innovation", präsentiert Pronutec die neue NH-Sicherungslastschaltleisten Generation "TRIVER+" in den Größen NH-1/2/3.

Mit der neue "TRIVER+" Generation kommt Pronutec den sich gewandelten Kundenbedürfnissen nach und erfüllt schon heute zukünftige Bedürfnisse.

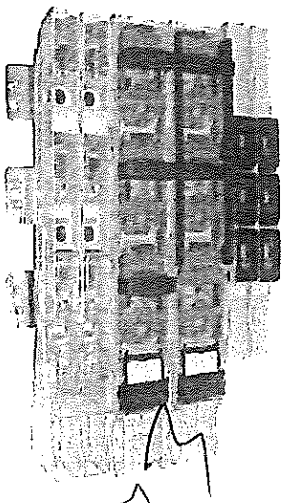
Fully compatible - Voll Kompatibel

TRIVER+ is a fuse switch / fuse rail 100% compatible with the current range. It maintains the same external dimensions so they can be installed in any currently installed LV panels in the market (valid fuse switches and fuse rails for front panels of 600mm or 650mm in height).

It has also been designed and tested under the IEC 60947-3 standard and in accordance with major national and international standards of different utilities.

Die neuen "TRIVER+" NH-Sicherungslastschaltleisten sind 100%-ig kompatible zum bestehenden Programm, die äußeren Abmessungen bleiben identisch, so dass keine Änderungen im Bereich der Konstruktion vorgenommen werden müssen.

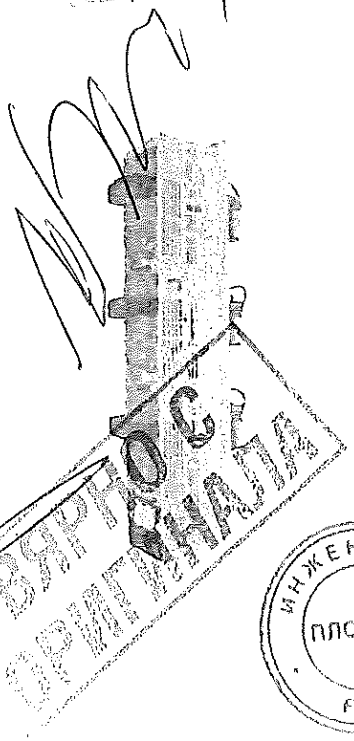
Die Entwicklung und Prüfung erfolgte gemäß der internationalen Norm IEC 60947-3. Des Weiteren werden die Kundenanforderungen nationaler wie internationaler Energieversorger erfüllt.



Adapted to future - Startklar für die Zukunft

This new generation of three pole switches are prepared to meet the market's needs that will appear in the near future with the implementation of Intelligent Networks (Smart Grids). For such purpose, it incorporates features and accessories for remote control such as integrated or independent metering sets, Fuse Supervision Control, etc...

Die neue Generation der NH-Sicherungslastschaltleisten erfüllt schon heute die Anforderungen für zukünftige intelligente Netzwerke (Smart Grids) z. B. gibt es Zubehörteile zur Fernkontrolle, integrierte oder unabhängige Mess-Sets, Sicherungsüberwachung, usw...



Energy efficiency - Energie-Effizienz

The new TRIVER+, has been designed to achieve greater energy efficiency in real operation conditions. On one hand, it reduces power losses (thanks to the new design of the contact) and second, the heat dissipation of the fuse switch is higher (due to ventilation granted by the new housing of the switching unit).

Mit der neue "TRIVER+" Reihe steigert Pronutec die Energieeffizienz unter realen Bedingungen.
- Reduktion der Verlustleistung durch neu entwickelte Kontakte.
- Bessere Wärmeabfuhr durch einen intelligenten Aufbau des Oberteils.

Fuse switch heat reduction
Reduzierung der Verlustleistung

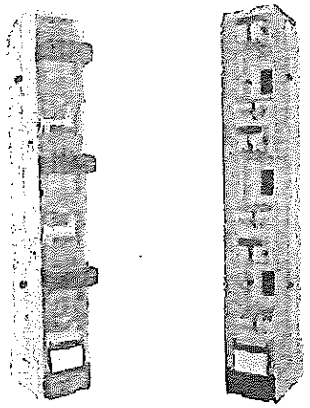
11%

Safety against accidental contacts - Berührungsschutz

Saftey is the main aspect for the development of new products in Pronutec. The new TRIVER+, provides a IP30 protection degree in the closed position and IP20 in the open position, ensuring maximum protection against accidental contacts.

Sicherheit ist der Hauptaspekt für Neuentwicklungen des Hauses Pronutec. Die neue "TRIVER+"-Reihe bietet maximalen Berührungsschutz, so wird ein Schutzgrad von IP30 in der geschlossenen und IP20 in der geöffneten Position erreicht.

Front protection degree
Schutzgrad Frontbedienung



Closed: IP 30
Geschlossen: IP 30

Open: IP 20
Geöffnet: IP 20

Ecodesign - Ecodesign

The reduction of power losses thanks to the new design of the TRIVER+ has a positive effect on the environment by saving energy.

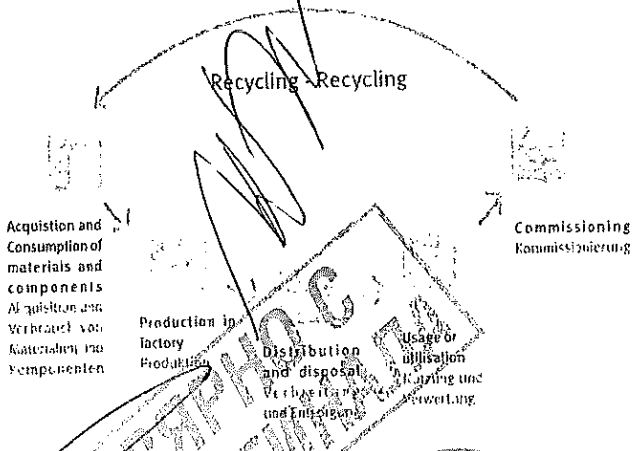
At the same time, with the design of this new TRIVER+, the impact of the product on the environment has been reduced throughout its whole life cycle.

This reflects Pronutec's commitment in terms of sustainable development and respect for the environment.

Neben der Reduktion von Verlustleistungen hat das neue Design "TRIVER+" auch einen positiven Umwelteffekt, da diese durch die Einsparung von Energie entlastet wird.

Gleichzeitig wurde mit der Neuentwicklung "TRIVER+" dafür gesorgt, dass die Belastung der Umwelt während des gesamten Lebenszyklus reduziert wird.

Dieses spiegelt Pronutec's Engagement im Sinne der Nachhaltigkeit wieder.



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Ergonomic, Modern and Functional Design - Ergonomisches, Modernes und Funktionales Design

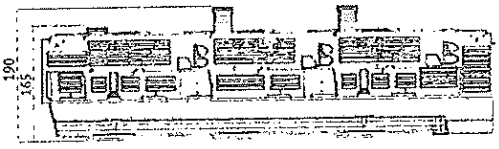
Better maneuverability. Faster to install and handle. More effective.
Safer.

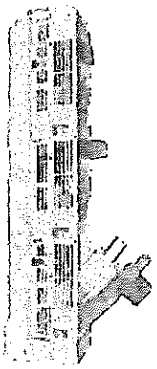
Steigerung der Bedienerfreundlichkeit. Schneller zu installieren.
Effizienter. Sicherer.

Applications - Anwendungen

Retractable handle / More compact panels.
Depth reduces from 190mm to 165mm.
LV panels can be designed with less depth.

Versenkbare Griffe / kompaktere Verteilungen.
Reduzierung der Tiefe von 190mm auf 165mm.
Verteilungen können mit einer geringeren Tiefe gebaut werden.



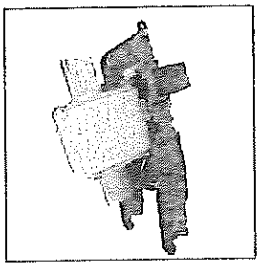


REVERSIBILITY
Connections can be done either in the upper part or lower part, with a simple turn of the base upside down.

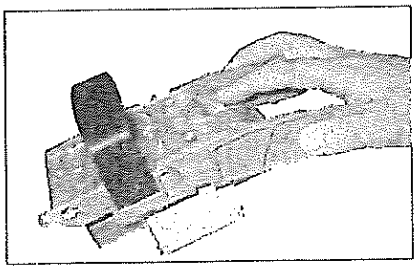
ABGANG OBEN/UNTEN FREI WÄHLBAR
Durch eine einfache Drehung des Unterteils entscheiden Sie selbst ob der Abgang ober- oder unterhalb sein soll.

Safety in its handling - Sicherheit in der Handhabung

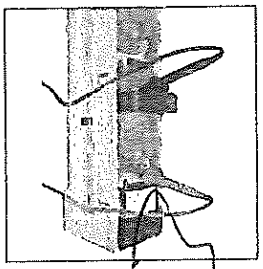
The new TRIVER+ has other elements that make the installation and maintenance operation even safer for people.
Höhere Sicherheit bei den neuen TRIVER+ bei Installation und Wartung.



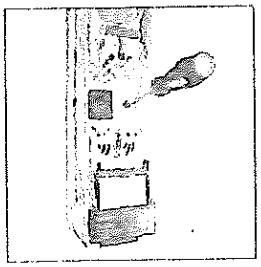
Safety and comfort in the extraction of the fuse.
Sicherheit und Komfort bei der Entnahme des Sicherungseinsatzes.



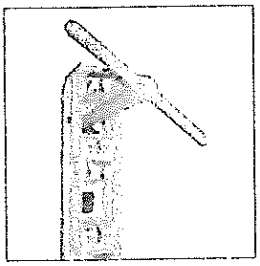
Fuse removed without touching with the use of an external drive.
Berührungslose Entfernung des Sicherungseinsatzes.



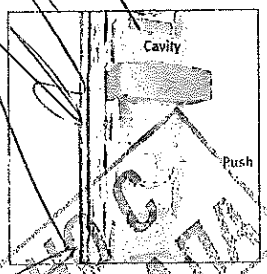
Cover including a device to allow direct access to the blade of the fuse in order to make stress testing.
Oberteil ermöglicht direkte Messung auf den Messern des Sicherungseinsatzes.



Easy to place the switching case.
Einfache Installation des Oberteils.



Live work is possible thanks to removable black windows in the switching unit.
Öffnungsfenster im Oberteil ermöglichen die Installation unter Spannung.



Release of fuse.
More space in the handle.
Entriegelung des Sicherungseinsatzes.
Mehr Komfort beim Schalten durch einen größeren Griffbereich.

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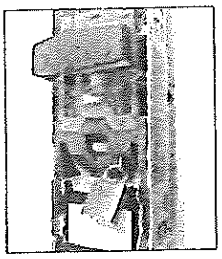
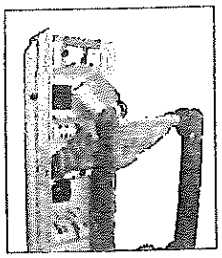
Blocking elements - Verriegelung & Blombierbarkeit

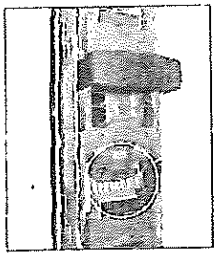
Valid for both, single and three pole switching versions.
Verfügbar in den Versionen 1-und 3-polig schaltbar.



Closed position with padlock in each phase.
Jede Phase in geschlossener Position verriegelbar.



Open position with padlock.
Verriegelung in geöffneter Position.

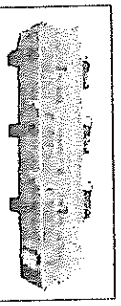


Sealed lock of each phase in its closed position as well as in the cable connection area.
Jede Phase in geschlossener Position plombierbar, zusätzlich kann der Anschlussraum plombiert werden.

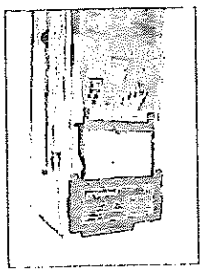
Accessories - Zubehör

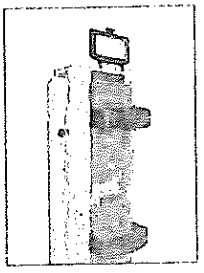
Large range of accessories that provide greater benefits inside the new TRIVER+.
Große Auswahl von Zubehörteilen, die weitere Vorteile der neuen "TRIVER+" Reihe bieten.

Permanent or temporary metering by means of a combined set of fuse - current transformer - ammeter.
Dauerhafte oder temporäre Messungen mittels eines kombinierten Sets von Stromwandlern und Amperemeter.



Upper/Lower rating plate.
Obers- und unteres Beschriftungsfeld.





Examples - Beispiele:

00

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02

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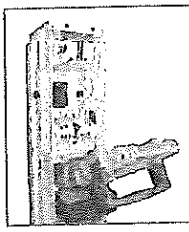
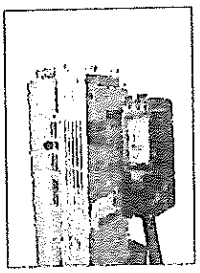
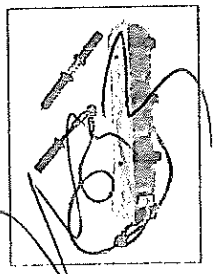


Microswitch which enables electronic open / close indicator.
LED - Integrated blown fuse indicator.
Mikroschalter für Positionsanzeige der NH-Sicherungslastschaltleisten.
LED - Integrierte Zustandsanzeige des Sicherungseinsatzes.



Fuse protected auxiliary supply (up to 160A fuses) used to provide temporary supply with no need for installing an additional fuse rail.
Huckepacksicherung - abgesicherte temporäre Hilfsanschluss (bis 160A) für die vorübergehende Versorgung ohne Installation einer zusätzlichen NH-Sicherungslastschaltleiste.

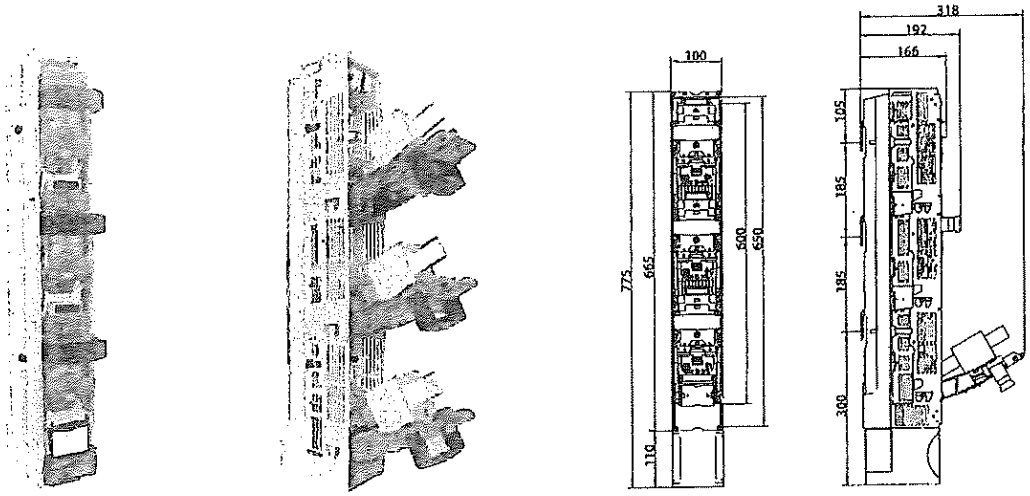


The blade of the earthing link is housed in the position of the fuse in the base.
The base is grounded by means of a copper braid.
Möglichkeit zur Erdung der angeschlossenen Kabel mit Hilfe unserer isolierten Erdungsgarnitur.

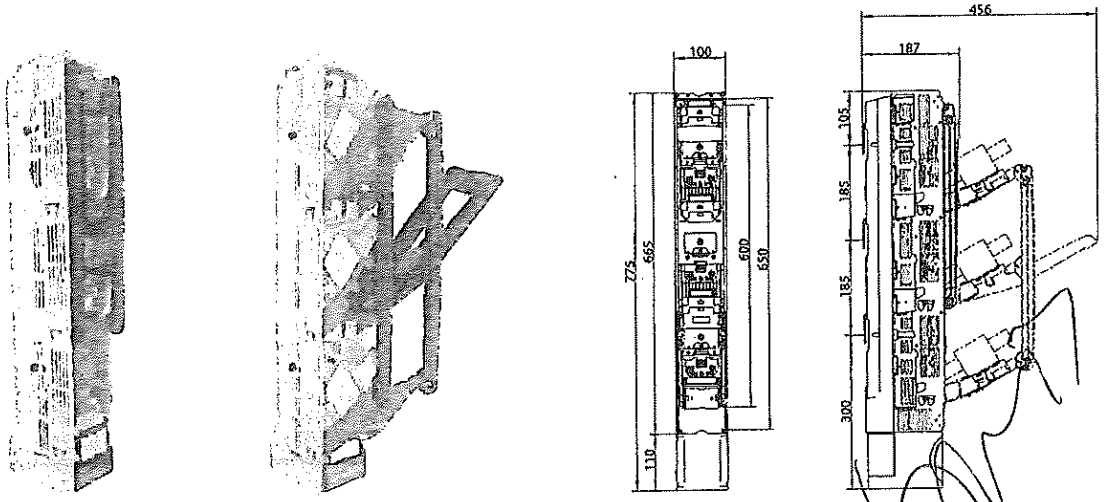
Large range of terminals adapted to suit several type of cable terminations in international markets.
Hohe Vielfalt von Anschlussvarianten.

Triver+ - Range - Triver+ - Produktpalette

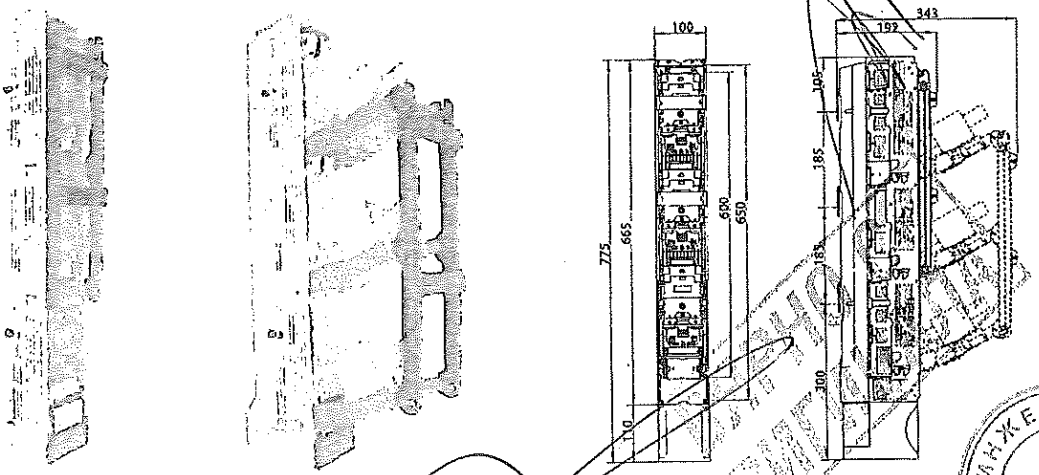
BTVC one pole switching - BTVC 1-polig-schaltbar



BTVC three pole switching - 1 handle - BTVC 3-polig-schaltbar / ein-hand-betrieben



BTVC three pole switching - 2 handles - BTVC 3-polig-schaltbar / zwei-hand-betrieben



Triver+ Range - Triver+ Produktpalette

Description Beschreibung	Fuse Link Sicherungseinsatz	Current Strom	Reference* Artikelnummer*
BTVC-DU	NH-1	250	438.51.10.XX.YY
BTVC-DU	NH-2	400	438.5710.XX.YY
BTVC-DU	NH-3	630	438.53.10.XX.YY
BTVC-DU DOUBLE - BTVC-DU DOPPEL	NH-2	800	438.54.70.XX.YY
BTVC-DU DOUBLE - BTVC-DU DOPPEL	NH-3	1260	438.56.70.XX.YY
BTVC-DT 1 HANDLE - BTVC-DT - EIN-HAND-BETRIEBEN	NH-1	250	438.71.10.XX.YY
BTVC-DT 1 HANDLE - BTVC-DT - EIN-HAND-BETRIEBEN	NH-2	400	438.72.10.XX.YY
BTVC-DT 1 HANDLE - BTVC-DT - EIN-HAND-BETRIEBEN	NH-3	630	438.73.10.XX.YY
BTVC-DT 2 HANDLES - BTVC-DT - ZWEI-HAND-BETRIEBEN	NH-1	250	438.61.10.XX.YY
BTVC-DT 2 HANDLES - BTVC-DT - ZWEI-HAND-BETRIEBEN	NH-2	400	438.62.10.XX.YY
BTVC-DT 2 HANDLES - BTVC-DT - ZWEI-HAND-BETRIEBEN	NH-3	630	438.63.10.XX.YY

*Reference = Article Reference + XX (Terminal code) + YY (Accessories code).
Please, see the terminals and accessories in the Pronutec General Catalogue.
For other options, please consult.

*Artikelnummer = Artikelnummer + XX (Anschlussvariante) + YY (Zubehör).
Die Anschlussvarianten und Zubehörteile entnehmen Sie bitte unserem Hauptkatalog.

Technical data - Technische Daten

Electrical Characteristics Elektrische Eigenschaften	Type Typ	250 A		400 A		630 A	
Rated operation voltage - Bemessungsbetriebsspannung	Ue (V)	AC 500	AC 690	AC 500	AC 690	AC 500	AC 690
Rated operation current - Bemessungsbetriebsstrom	Ie (A)	250	200	400	315	630	500
Conventional free air thermal current with fuses Konventioneller thermischer Strom mit Sicherungen	Ith (A)	250	200	400	315	630	500
Conventional free air thermal current with solid links Konventioneller thermischer Strom mit Trennmessern	Ith(A)	400	400	510	510	800	800
Rated frequency - Bemessungsfrequenz	(Hz)	40-60	40-60	40-60	40-60	40-60	40-60
Rated insulation voltage - Bemessungsisolationsspannung	Ui (V)	AC 1000	AC 1000	AC1000	AC1000	AC1000	AC 1000
Rated conditional short-circuit current - Bedingter Bemessungskurzschlussstrom	(kAeff)	80	80	80	80	80	80
Utilization category - Gebrauchskategorie	-	AC-22B*	AC-22B	AC-22B*	AC-22B	AC-22B	AC-22B
Rated making capacity - Bemessungseinschaltvermoegen	(A)	1200	600	1890	945	1890	750
Rated breaking capacity - Bemessungsausschaltvermoegen	(A)	1200	600	1890	945	1890	750
Rated impulse withstand voltage - Bemessungsstossspannung	Uimp /kV)	20	20	20	20	20	20
Operating cycles with current - Elektrische Lebensdauer(Schaltspiele)	-	200	200	200	200	200	200
Total power loss at Ith Ges. - Verlustleistung bei Ith (ohne NH-SE)	Pv (W)	25	16	52	32	98	62

* AC23B for rated operation voltage AC 400

Characteristics of the materials - Materialeigenschaften

The new TRIVER+ fuse switch maintains one of the most valued aspects by our costumers: high quality materials to ensure product reliability.

- UP-BMC thermostable Polyester reinforced fibreglass socket.
- High-performance self extinguishing technical plastic housing.
- All live parts are made out of SE-CU57 electrolytic copper according to DIN 1787.
- Contacts are sliver plated and conductive parts are tin-plated.
- Stainless steel springs.

Die Nutzung von hochwertigen Materialien stellt die Basis unserer neuen TRIVER+ Produktreihe dar.

- Grundkörper bestehend aus UP-BMC temperaturbeständiges, glasfaserverstärktes Polyester.
- Einsatz von leistungsstarken, selbstverlöschenden Kunststoffen.
- Alle spannungsführende Teile bestehen aus SE-CU57 Elektrolytkupfer gemäß DIN1787.
- Die Kontakte sind versilbert und alle weiteren leitenden Teile verzinnt.
- Kontaktfedern aus nichtrostendem Edelstahl.

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Fax: +34 94 631 38 32

e-mail: 4ex@pronutec.com
www.pronutec.com

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

002

AUSTRIAN INSTITUTE OF TECHNOLOGY

Accredited by BMWA with GZ: 92714/237-IV/9/00 as test- and inspection body and with BGBl. II Nr. 244//2005 as certification body for personnel

Test Report

Project Designation

PERFORMANCE OF
MAKING AND BREAKING CAPACITY
AT LOW-VOLTAGE
FUSE-SWITCH-DISCONNECTORS
TYPE BTVC 400A
THREE POLE OPERATED
(AC-22B at 500V / 400A)

Client

PRONUTEC S.A.
Parque Empresarial Boroa
Parcela 2c-1
E-48340 Amorebieta - VIZCAYA
SPAIN

Order from / No. 06/2010 / ---

Project Number 2.03.02087.1.0/BTVC400/AC22/500V/400A/3-pole Test Engineer Ing.J.Ainetter

Date of issue	22.11.2010
Total number of issues / No.	1 / 1
Number of pages	10
Annex: Number of pages	---

The results relate exclusively to the terms tested.

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Test item

Identification:

Low-voltage fuse-switch-disconnectors type BTVC 400A, three pole operated

Trademark:	pronutec
Manufacturer:	PRONUTEC S.A.
Size:	2
Number of poles:	3
Busbar system:	185mm
Rated operational voltage:	400V a.c. up to 690V a.c.
Rated operational current:	400A
Rated frequency:	50Hz

Testing location, Period of testing

Testing location:

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H.
Business Unit Electric Energy Systems
Power Service Center
Giefinggasse 2
1210 Vienna
AUSTRIA

Period of testing:

09/2010

Test(s)

Test(s) performed:

Performance of making and breaking capacity (AC-22B at 500V / 400A)

Test standard(s):

IEC 60947-1:2007 (Edition 5.0) and IEC 60947-3:2008 (Edition 3.0)
EN 60947-1:2007 and EN 60947-3:2009

Test procedure(s):

CB-Scheme and CCA-Scheme

Possible test case verdicts:

P (Pass):	Test object does meet the requirement
F (Fail):	Test object does not meet the requirement
N (Not applicable):	Test case does not apply to the test object

Result

The low-voltage fuse-switch-disconnectors type BTVC 400A, three pole operated, have passed the performance of making and breaking capacity (AC-22B at 500V / 400A) successfully.

На основание чл. 2 от ЗЗЛД

На основание чл. 2 от ЗЗЛД

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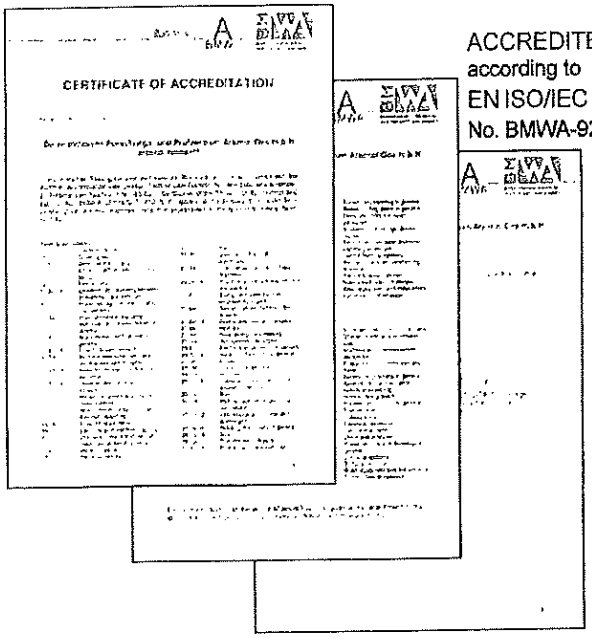
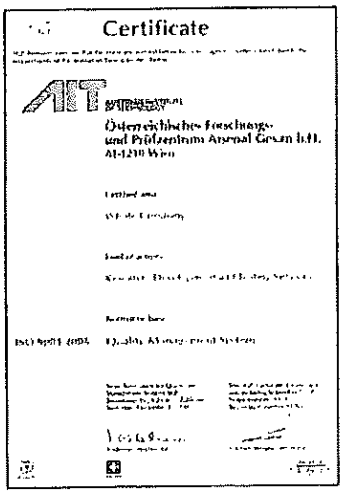
AUSTRIAN INSTITUTE OF TECHNOLOGY

Testing laboratory



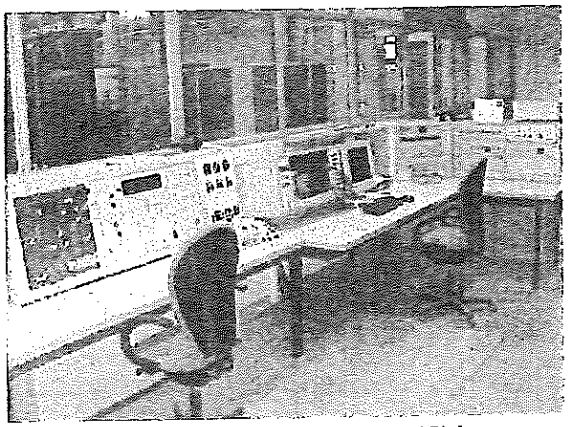
ACCREDITED
according to
EN ISO/IEC 17025
No. BMWA-92.714/0504-I/12/2007



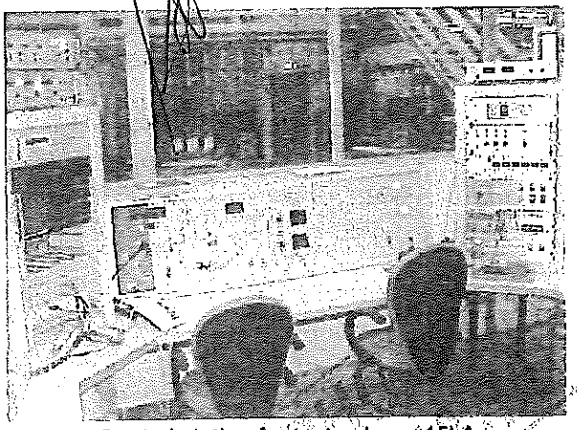
CERTIFICATED
according to
ISO 9001
Reg. No. 12769

RECOGNIZED
CB TESTING LABORATORY
under the responsibility of OVE
as the National Certification Body

POWER SERVICE CENTER:



Control station for tests up to 15kA

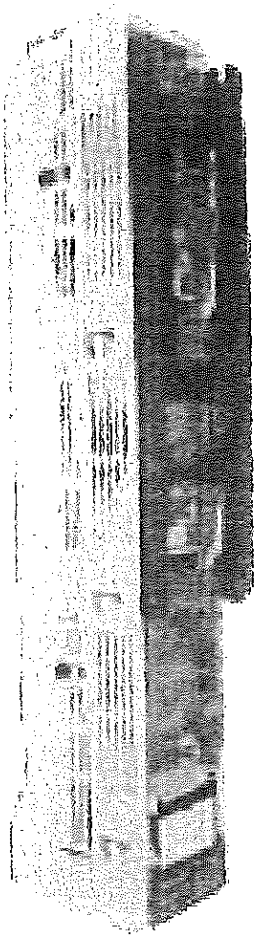


Control station for tests above 15kA

Technical data and description

Test item	Low-voltage fuse-switch-disconnectors
Trademark	pronutec
Model/Type reference	BTVC 400A
Manufacturer	PRONUTEC S.A.
Place of manufacture	Vizcaya, Spain
Type of operation	Three pole operated
Method of operation	Dependent manual operation
Size	2
Busbar system	185mm
Type of terminals	Bolt terminals M12
Switching positions	ON / OFF
Number of poles	3
Nature of supply	AC
Utilization category	AC-22B
Rated operational voltage	400V a.c. up to 690V a.c.
Rated operational current	400A (up to 500V a.c.) 315A (at 690V a.c.)
Rated frequency	50Hz
Conventional free air thermal current	400A (with 500V fuse-links)
Rated insulation voltage	1000V
Rated impulse withstand voltage	12kV
Rated conditional short-circuit current	80kA (up to 500V a.c.) 50kA (at 690V a.c.)
Kind of protective device	Fuse-links NH2
Maximim power dissipation of the protective device	34W
Degree of protection	IP 20

Picture of test item



Test performance / Test values

IEC / EN 60947-3			
Clause	Requirement - Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS		P
8.3.3.3	Making and breaking capacity		P
	- utilization category:	AC-22B	-
	- rated operational voltage Ue (V):	500	-
	- rated operational current Ie (A):	400	-
	Conditions for make operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue (V):	L1: - L2: - L3: -	-
	- test current, I = ... x Ie (A):	L1: - L2: - L3: -	-
	- power factor:	L1: - L2: - L3: -	-
	Conditions for break operation, AC-23A and AC-23B only:		N
	- test voltage, U = 1,05 Ue (V):	L1: - L2: - L3: -	-
	- test current, I = ... x Ie (A):	L1: - L2: - L3: -	-
	- power factor:	L1: - L2: - L3: -	-
	Conditions for make/break operations, other than AC-23A and AC-23B:		P
	- test voltage, U = 1,05 Ue (V):	L1: 526 L2: 528 L3: 526	-
	- test current, I = 3 x Ie (A):	L1: 1217 L2: 1228 L3: 1212	-
	- power factor / ~~time constant (ms)~~:	L1: 0,64 L2: 0,64 L3: 0,64	-
	Number of make/break or make and break operations:	5	P
	- recovery voltage duration ≥ 50 ms (ms):	Permanent	P
	- current duration (ms):	240	-
	- time interval between operations (s):	30	-
	Oscillogram:	1 (5th operation)	-

608

IEC / EN 60947-3			
Clause	Requirement - Test	Result - Remark	Verdict
	Characteristic of transient recovery voltage for AC-22 and AC-23 only:		P
	- oscillatory frequency (kHz) .....:	57,24	-
	- measured oscillatory frequency (kHz) .....:	L1: 57,1 L2: 57,1 L3: 57,1	P
	- factor n.....:	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		-
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8		P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.3.4	Dielectric verification		P
	test voltage 2 Ue with a minimum of 1000V~ (V)...:	1400	-
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage 1,1 Ue (V).....:	760	-
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole (mA).:	-	N
	Leakage current (other utilization categories) ≤ 2 mA/pole (mA).....:	< 1	P

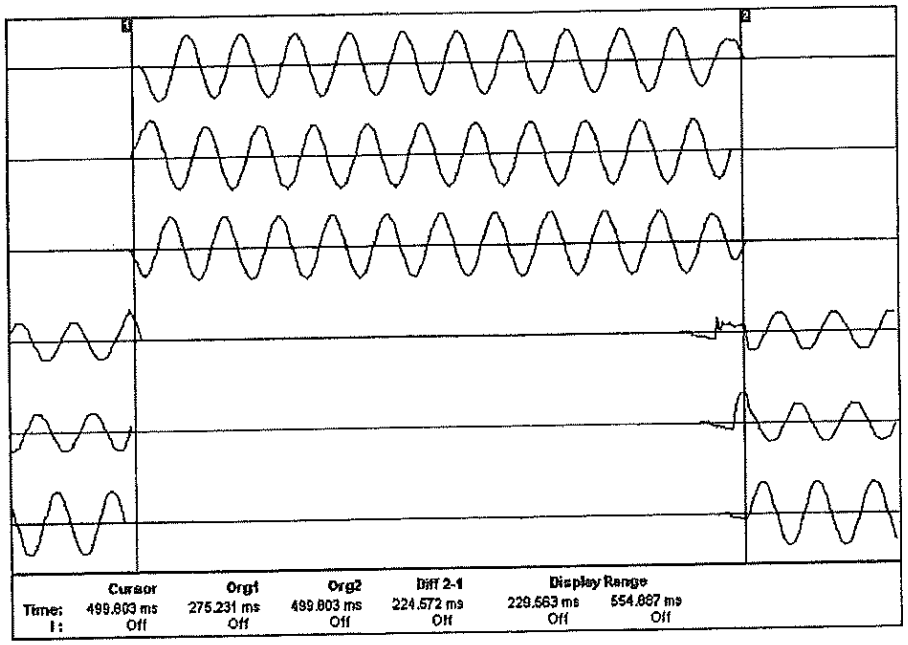
IEC / EN 60947-3				
Clause	Requirement - Test	Result - Remark		Verdict
8.3.3.6	Temperature-rise verification			P
	- conductor cross-section (mm²)....:	240		-
	- test current Ie (A)....:	400		-
	Temperature-rise dT of part:	dT (K) measured	dT (K) required	P
	Terminals	≤ 61	80	P
	Manual operating means: non-metallic	5	35	P
	Parts intended to be touched but not hand-held: non-metallic	37	50	P
	Parts which need not be touched during normal operation: non-metallic	45	60	P
8.3.3.7	Strength of actuator mechanism			P
8.2.5	Verification of the strength of actuator mechanism and position indicating device			P
	- actuator type (fig.)....:	1e		-
8.2.5.2.1	Dependent and independent manual operation			P
	- actuating force for opening (N)....:	210		-
	- test force with blocked main contacts (N)....:	400		-
	- used method to keep the contact closed....:	Fixed by brazing		-
	During and after the test, open position not indicated....:	No open position indicated		P
	Equipment with locking mean, no locking in the open position while test force is applied ....:	No locking in open position		P
8.2.5.2.2	Dependent power operation			N
	- main contacts fixed together in the closed position ....:	-		N
	- used method to keep the contact closed....:	-		N
	- 110% of the rated supply voltage applied to the equipment (3 times)....:	-		N
	During and after the test, open position not indicated....:	-		N
	Equipment show no damage impairing its normal operation ....:	-		N
	Equipment with locking mean, no locking in the open position while test force is applied ....:	-		N

610

IEC / EN 60947-3			
Clause	Requirement - Test	Result - Remark	Verdict
8.2.5.2.3	Independent power operation		N
	- main contacts fixed together in the closed position ..... :	-	N
	- used method to keep the contact closed ..... :	-	N
	- stored energy of the power operator released (3 times) ..... :	-	N
	During and after the test, open position not indicated ..... :	-	N
	Equipment show no damage impairing its normal operation ..... :	-	N
	Equipment with locking mean, no locking in the open position while test force is applied ..... :	-	N

Oscillogram(s)

Oscillogram 1:



Списък на отделните изпитвания на български език

Изследван образец:

Вертикален разединител с предпазители от типа BTVC 400A , триполюсен

Производител:

Pronutec S.A. , Испания

Изпълнени тестове (съгласно IEC/EN 60947-3; IEC 60947-1.Експлоатационни характеристики по комутационна способност .

1) Проверка на оборудването при тестване по комутационна способност при категория на приложение AC 22B/500V

2) Поведение на оборудването при тестване по комутационна способност

3)Състояние на оборудването след тестване по комутационна способност

4) Проверка на диелектричните свойства

5) Проверка на загубите

6) Проверка за ток на утечка

7) Тест за повишаване на температурата –проверка на нагряването

8) Провека на задействащия механизъм за издръжливост

9) Зависими и независими ръчни операции (задействаща сила при отваряне и затваряне)

Federal Ministry of
Economy, Family and Youth

Confirmation of Accreditation

The Federal Ministry of Economics, Family and Youth confirms that

Österreichisches Forschungs- und Prüfzentrum Arsenal Ges.m.b.H

Giefinggasse 2, A-1210 Wien

Identification number: 1

Initial date of Accreditation: December 01, 1993

is accredited as Testing Laboratory and Inspection Body and fulfills the requirements of ÖVE/ÖNORM EN ISO/IEC 17025:2007 and ÖVE/ÖNORM EN ISO/IEC 17020:2004 Type A.

The detailed scope of accreditation is given in the currently valid decree.

The accredited technical fields are published in the list of accredited bodies at www.bmwfj.gv.at/akkreditierung.

На основание чл. 2
от ЗЗЛД

Division I/12 - Accreditation Body
Stubenring 1 | 1011 Vienna | Austria | phone: +43 (0)1 711 00 - 8236 | fax: +43 (0)1 711 00-93 - 8236 | DVR 0032257
e-mail: akkreditierung@bmwfj.gv.at | www.bmwfj.gv.at/akkreditierung

-330-
C13

pronutec	**DECLARACIÓN DE CONFORMIDAD**	DC4381-0 27-Octubre-2010 Pág. 1 de 1

PRONUTEC, S.A.
Parque Empresarial Boroa Parc. 2c-1
48340 Amorebieta – VIZCAYA (SPAIN)
NIF.: ES-A-48/217.962

Declara bajo su responsabilidad que el producto:
Declare under our sole responsibility that the product:
Eigenverantwortliche Erklärung zu unserem Produckt:

Bases tripolares verticales cerradas (BTVC) tamaños 1/2/3, desconexión unipolar y tripolar.
Three poles fuse rails (BTVC) size 1/2/3, one and three pole Switching.
Dreipolige Sicherungslastschaltleisten (BTVC) Größe 1/2/3, ein und dreipolig schaltbar.

Referencias 438xxxxxx fabricados según la Especificación Técnica de Pronutec ET-438.
References 438xxxxxx manufactured according Pronutec's ET-438 Technical Specification.
Die Referenznummem 438xxxxxx sind alle gefertigt gemäß den technischen Spezifikationen der Pronutec ET-438.

Son conformes con las exigencias de la Directiva de Seguridad del material eléctrico destinado a ser utilizado bajo determinados limites de tensión 2006/95/EC.
Are in accordance with the requirements of the Low Voltage Directive 2006/95/EC
Diese sind in Übereinstimmung mit den Anforderungen der Niederspannungsanweisung 2006/95/EC.
Y de la Directiva de Compatibilidad Electromagnética 2004/108/CE.
And with the Electromagnetic Compatibility Directive 2004/108/CE.
Und mit der Elektromagnetischen Verträglichkeitsanweisung 2004/108/CE.

De acuerdo a la siguiente norma armonizada:
According to the following harmonised standard:
Gemäß der folgenden Norm:

UNE - EN 60947-3: 2009

Cualquier montaje, ya sea inicial o posterior que no respete las instrucciones generales de puesta en servicio y uso dadas por Pronutec, anula este documento.
Any initial or subsequent installation that will not observe the general instructions given by Pronutec will cancel this document.
Jegliche Änderungs oder Nachinstallationen, die nicht den generellen Anweisungen der Firma Pronutec entspricht, widerruft diese Erklärung.

На основание чл. 2
от ЗЗЛД

En Amorebieta / *In Amorebieta*

pronutec
LABORATORIO

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

DC4381-0

27-Октомври-2010

Декларация за съответствие

Pronutec, S.A.

Parque Empressarial Boroa Parc. 2c-1

48340 Amorebieta-VIZCAYA (SPAIN)

NIF.: ES-A-48/217.962

Декларирам на своя лична отговорност, че продуктите:

Триполюсните основи с предпазители (BTVC) размери 1/2/3, еднополюсните и триполюсни разединители, с референции 438xxxxxx произведени съгласно техническата спецификация на Pronutec *ET-438*

са в съответствие с изискванията на Директива за ниско напрежение *2006/95 / EC*

и с Директива за електромагнитна съвместимост *2004/108 / CE*

в съответствие със следния хармонизиран стандарт: *UNE - EN 60947-3: 2009*

Всяко първоначално или последващо инсталиране, които няма да спазват общите инструкции, дадени от Pronutec ще отмени този документ.

На основание чл. 2
от ЗЗЛД

En Amorebieta

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

ДЕКЛАРАЦИЯ

Долуподписаният **Петър Иванов Данчев,** На основание чл. 2 от ЗЗЛД адена от На основание чл. 2 от ЗЗЛД, постоянен адрес - гр. Пловдив, ул. "Стефан Караджа" № 2 , в качеството си на Изпълнителен Директор и представляващ " **ИНЖЕНЕРИНГ" ЕАД**

ДЕКЛАРИРАМ, ЧЕ :

Предлаганите от "Инженеринг" ЕАД триполюсни вертикални разединители за предпазители 400 А - NH2 са изцяло в съответствие с изискванията на техническата спецификация на стандартите за материала , включително на параграфи „Характеристика на материала" и "Съответствие на предложеното изпълнение с нормативно – техническите документи" по процедура с референтен № PPD 18-063.

01.08.2018 г.
гр.Пловдив

Подп

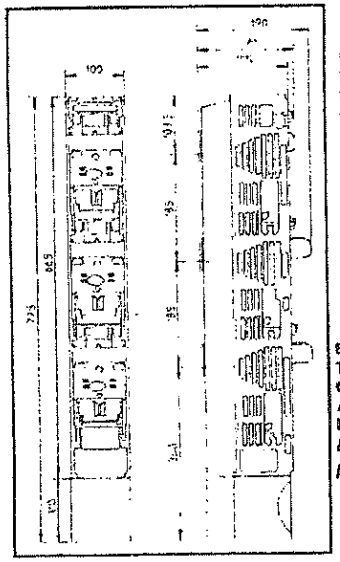
На основание чл. 2
от ЗЗЛД

ЕАД

TRIVER+
INSTRUCCIONES DE MONTAJE
ASSEMBLY INSTRUCTIONS / Инструкция за монтаж
BTVC / BTVC-DT / BTVC-DTU NH 1-2-3

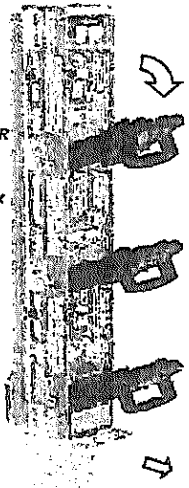
DESCONEXIÓN UNIPOLAR / *ONE POLE SWITCHING* / Прекъсвачка еднополюсна

DESCONEXIÓN TRIPOLAR / *THREE POLE SWITCHING* / Прекъсвачка ТРЕТА ПОЛЮСЕН



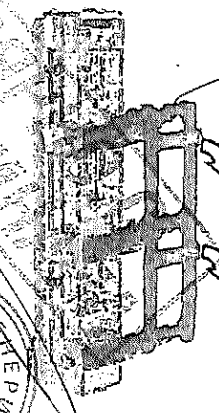
1.

E
EXTRAER LA TAPA DE CONEXIONES
GB
REMOVE CONNECTION COVER
B
Отстанете предпазния капак на клемите

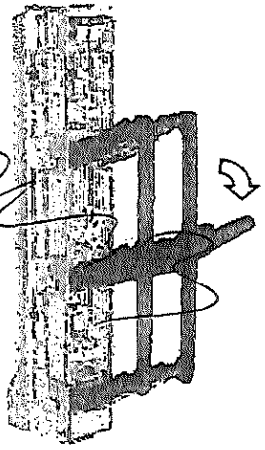


2.

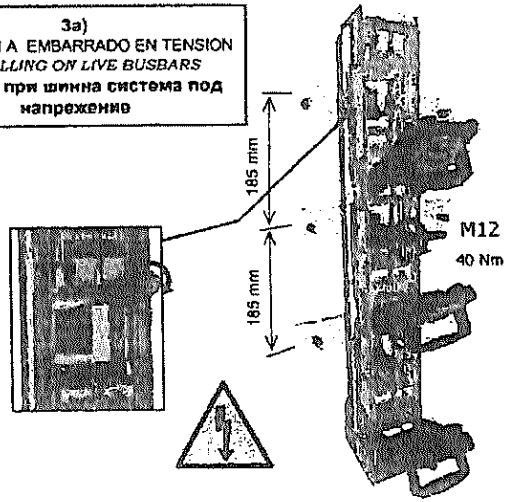
E
TIRAR DE LAS ASAS
GB
PULL THE HANDLES
B
Издърпайте ръкохватките



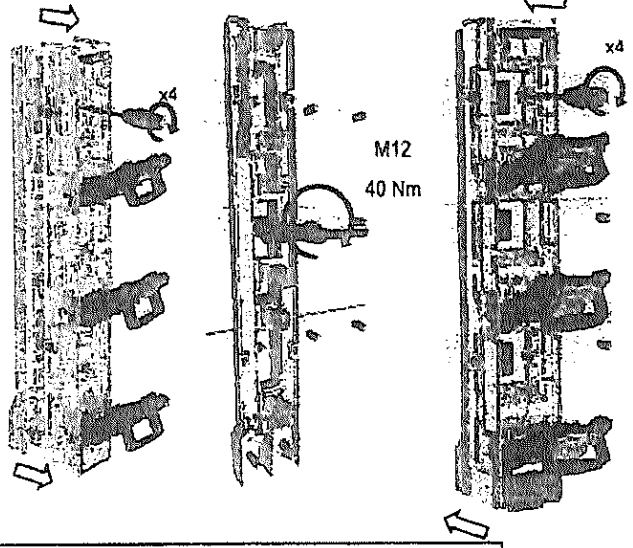
E
TIRAR DE LAS 2 ASAS AL MISMO TIEMPO
GB
PULL BOTH HANDLES AT THE SAME TIME
B
Издърпайте едновремен но двете ръкохватки



3a)
CONEXIÓN A EMBARRADO EN TENSION
INSTALLING ON LIVE BUSBARS
Монтаж при шинна система под напрежение



3b) CONEXIÓN A EMBARRADO SIN TENSIÓN
INSTALLING ON CURRENT FREE BUSBARS
Монтаж при шинна система без напрежение

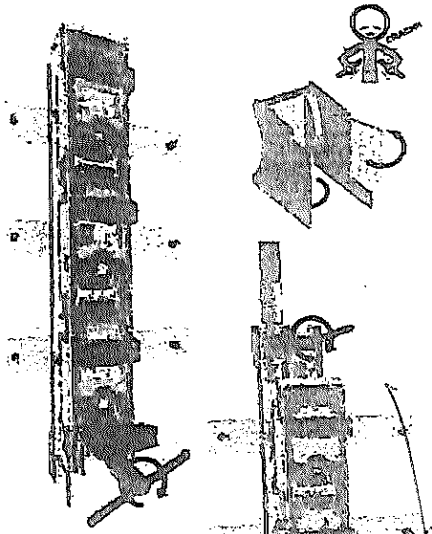


TENER EN CUENTA EL MARCADO DE LAS FASES EN LA ZONA DE CONEXIONES DEL ZOCALO, AL HACER LAS UNIONES ELECTRICAS.

CONSIDER THE PHASES MARKING IN THE TERMINAL ZONE OF THE FUSE RAIL HOLDER, WHEN DOING ELECTRIC UNIONS.

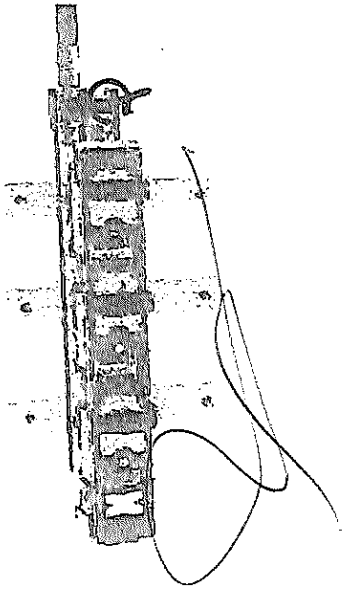
Вземете под внимание маркировката на фазите при осъществяване на електрическия контакт.

4 E CONECTAR LOS CABLES UTILIZANDO HERRAMIENTA AISLADA
GB *FASTEN THE CABLE LUGS BY USING AN ISOLATED TOOL*
B ***При монтажа кабелите и при останалите монтажни операции използвайте изолирани инструменти и защитни средства***



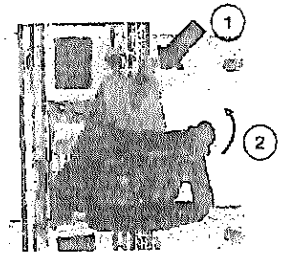
M10 – 32 Nm

M12 - 40 Nm

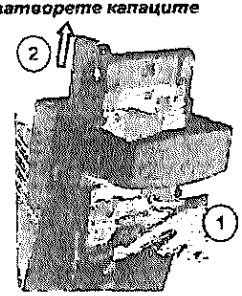


E Pronutec no se hace responsable de cualquier daño causado por un uso incorrecto de este producto. / **GB** *Pronutec is not responsible for any damage caused by a wrong use of this product.* / **B** ***Pronutec не носи отговорност за всички щети, причинени от неправилно използване на този продукт.***

INTRODUCCION / EXTRACCIÓN DEL FUSIBLE
INSTALLING / REMOVAL OF FUSE
Инсталиране и смяна на предпазител

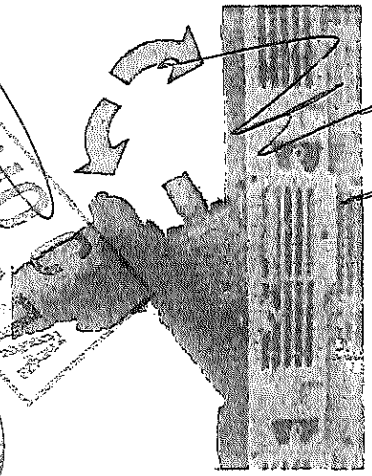


E INSERTAR LOS FUSIBLES Y CERRAR LA TAPA
GB *INSERT THE FUSES AND CLOSE THE COVERS*
B ***Поставете предпазителите и затворете капаците***

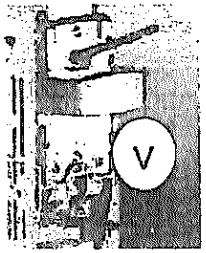


E EXTRACCIÓN DEL FUSIBLE
GB *REMOVAL OF FUSE*
B ***Смяна на предпазител***

ON / OFF: MANIOBRAR RAPIDAMENTE !
ON / OFF: MOVE LEVER QUICKLY!
Да се включва и изключва рязко !

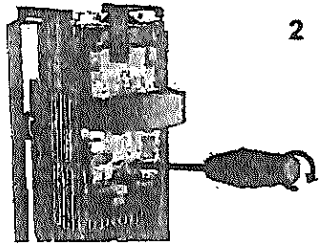


PRESENCIA DE TENSIÓN
VOLTAGE MEASUREMENT
Измерване на напрежение

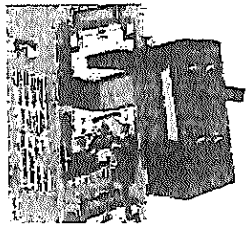


INSTALACIÓN DE SALIDA AUXILIAR PROTEGIDA POR FUSIBLE
INSTALLING A PROTECTED AUXILIAR OUTPUT
Монтаж на спомагателен изолиран изход

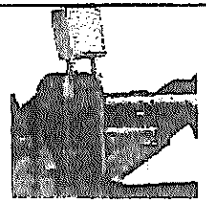
1

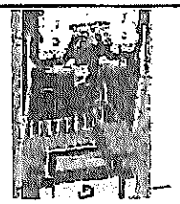


2

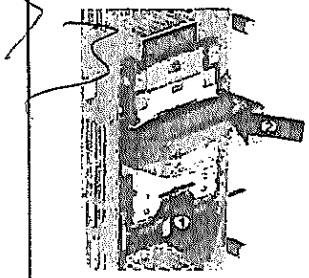


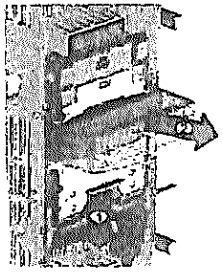
BLOQUEO DE CANDADO *LOCKING DEVICE* **Заключващо устройство**





ASA ESCAMOTEABLE BTVC-E / *RETRACTABLE HANDLE BTVC-E*/
Прибираща се ръкохватка за BTVC-E





TRIVER+			
CARACTERISTICAS ELECTRICAS/MECANICAS ELECTRICAL/MECHANICAL CHARACTERISTICS **Технически данни и характеристики**	250 A	400 A	630 A
INTENSIDAD NOMINAL Ie (A) RATED OPERATIONAL CURRENT Ie (A) / **Номинален ток Ie (A)**	250	400	630
TENSIÓN NOMINAL Ue (V) RATED OPERATIONAL VOLTAGE Ue (V) / **Номинално напрежение Ue (V)**	690	690	690
TENSIÓN DE AISLAMIENTO Ui (V) RATED INSULATION VOLTAGE Ui (V) / **Изолационно напрежение Ui (V)**	1000	1000	1000
TENSIÓN DE FRECUENCIA INDUSTRIAL TEST VOLTAGE 50 Hz (kV) / **Изпитателно напрежение 50 Hz (kV)** Entre partes activas y masa –1 min. Between phases and earth - 1 min. **Между фазите и Земята - 1 минута**	10	10	10
Entre partes activas – 1 min Between phases - 1 min. / **Между фазите - 1 минута**	3.5	3.5	3.5
TENSIÓN ONDA DE CHOQUE Uimp (kV) RATED IMPULSE WITHSTAND VOLTAGE Uimp (kV) / **Изпитателно импулсно напрежение Uimp (kV)**	20	20	20
RESISTENCIA CORTOCIRCUITO Icm (Ka) RATED SHORT-CIRCUIT MAKING CAPACITY Icm (kA) with fuse **Ток на термична устойчивост Icm (kA)**	>50	>50	>50
RESISTENCIA AL AISLAMIENTO (MOhm) INSULATION RESISTANCE / **Съпротивление на изолацията**	>5	>5	>5
ENDURANCIA MECÁNICA MECHANICAL OPERATING CYCLES / **Механична износоустойчивост**	800	800	800
ENDURANCIA ELÉCTRICA ELECTRICAL OPERATING CYCLES **Електрическа износоустойчивост**	200	200	200
CATEGORÍA DE EMPLEO UTILIZATION CATEGORY / **Категория на използване** - Ue = 400 V Ue = 500 V - Ue = 690 V	AC-23B AC-22B AC-22B	AC-23B AC-22B AC-22B	AC-22B AC-22B AC-22B
GRADO DE PROTECCIÓN PROYECTION DEGREE / **Степен на защита**	IP-30	IP-30	IP-30

IP43801-BLG-B0

ПРИЛОЖЕНИЕ

"ЕЛПРОМ ЕМЗ" ООД град ШАБЛА

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ФИРМЕН ПРОФИЛ
НА " ЕЛПРОМ ЕМЗ " ООД град ШАБЛА

ОБЩА ИНФОРМАЦИЯ ЗА „ ЕЛПРОМ ЕМЗ " ООД град Шабла:

" ЕЛПРОМ ЕМЗ " ООД град Шабла е регистрирано по ф.д. № 481/1991 година при Добрички окръжен съд като правоприемник на ДФ " Елпром София и ДФ " Елпром АВН " град Добрич.

ПРОИЗВОДСТВО : " ЕЛПРОМ ЕМЗ " ООД град Шабла има за свой предмет на дейност :

1.*Производство и реализация на токови измерителни трансформатори* за НН до 1 kV и СрН до 24 kV за вътрешен монтаж с клас на точност 0.2; 0.2S; 0.5; 0.5S и 5P10 и номинална мощност до 50VA в диапазона от номинални токове от 5/5/5A до 3000/5/5A съгласно БДС EN 60044-1:2001 и IEC 60044-1:1999. Произвеждат се следните типове токови измервателни трансформатори:

1. тип СТ-1; тип СТ-2; тип СТ-3; тип СТ-4 са с най-високо работно напрежение до 1 kV
2. тип 7.2СТ-1;тип 7.2СТ-2; тип 7.2СТ-3 са с най-високо работно напрежение до 7.2 kV.
3. тип 7.2СТ-1 PR; тип 7.2СТ-2 PR; тип 7.2СТ-3 PR – трансформатори с външно превключване на първичната намотка с най-високо работно напрежение до 7.2 kV.
4. тип 12СТ-1; тип 12СТ-2; тип 12СТ-3 - са с най-високо работно напрежение до 12 kV.
5. тип 12СТ-1 PR; тип 12СТ-2 PR; тип 12СТ-3 PR – трансформатори с външно превключване на първичната намотка с най-високо работно напрежение до 12 kV.
6. тип 24СТ-1; тип 24СТ-2; тип 24СТ-3 - са с най-високо работно напрежение до 24 kV.
7. тип 24СТ-1 PR; тип 24СТ-2 PR; тип 24СТ-3 PR – трансформатори с външно превключване на първичната намотка с най-високо работно напрежение до 24 kV

08.2.2012 г.

619

2. *През 2002 година започнахме да произвеждаме ТОКОВИ ТРАНСФОРМАТОРИ ТИП " ФЕРАНТИ " за номинално напрежение до 24 KV и честота 50 Hz за вътрешен монтаж на кабели.*

Произвеждаме три типа трансформатори :
Тип FER-1 за монтаж на кабел с диаметър до 30 мм ;
Тип FER-2 за монтаж на кабел с диаметър до 40 мм ;
Тип FER-3 за монтаж на кабел с диаметър до 80 мм.

3. *През 2002 година започнахме да произвеждаме също и БЪРЗОНАСИЩАЩИСЕ ТОКОВИ ТРАНСФОРМАТОРИ ТИП SBP-1 за номинално работна напрежение до 24 KV и честота 50 Hz за вътрешен монтаж използвани в релейните защити.*

4. *"ЕЛПРОМ ЕМЗ " ООД ГРАД ШАБЛА ПРОИЗВЕЖДА ГАМА ЕДНОФАЗНИ МАСЛЕНИ ТРАНСФОРМАТОРИ ЗА СТЪЛБОВ МОНТАЖ* **Тип 1TM20/□3/0.23–20Cu и Тип 2TM20/20/0.23-Cu с номинални мощности съответно 0.5 кVA, 1 кVA 2 кVA, 5 кVA, 10 кVA, 16 кVA, 20 кVA, 25 кVA, 40 кVA и 50 кVA , номинално работно напрежение на намотка ВН 20 кV и с номинално работно напрежение на намотка НН 0.23 кV. Предназначен за използване в енергийните системи, като понижаващ трансформатор, за захранване на мрежи НН с общо предназначение**

МОНТАЖ НА ТРАНСФОРМАТОРА : Трансформаторите са пригодени за открит стълбов монтаж. Трансформаторът може да бъде монтиран или на предварително подготвена площадка закрепена на метален решетъчен стълб или направо върху бетонният или дървен стълб. Закрепването в този случай към стълба става посредством две метални скоби, предвидено е закрепващите скоби взависимост от диаметъра на стълба да се регулират в рамките на диаметър от 80 до 330 мм.

КЪМ ГАМА МОНОФАЗНИ МАСЛЕНИ ТРАНСФОРМАТОРИ Тип 1TMxx/□3/0.23–20Cu и Тип 2TMxx/20/0.23–Cu при желание на КЛИЕНТА ПРЕДЛАГАМЕ – еднофазен или двуфазен разединител за открит стълбов монтаж от серията РОМ за номинално напрежение 20 кV и номинален ток 200А, окомплектовани с хибридна стойка за високоволтови предпазители за открит монтаж на 20 кV и с катодни отводнители за 20 кV 10кА в комплект с високоволтови предпазители за напрежение 20 кV и РЛЗ.

Имаме разработка на АВТОМАТИЧЕН СТЪПАЛЕН РЕГУЛАТОР НА НАПРЕЖЕНИЕ към ГАМАТА ЕДНОФАЗНИ МАСЛЕНИ ТРАНСФОРМАТОРИ ЗА СТЪЛБОВ МОНТАЖ Тип 2TM20/20/0.23-Cu, който гарантира стабилно изходно напрежение 220 V при колебание на входното напрежение 20кV в границите на –20% до +10%.

5. *"ЕЛПРОМ ЕМЗ"ООД гр. ШАБЛА извършва цялостен или частичен основен ремонт на силови маслени високоволтови трансформатори с мощност от 25 KVA до 1250 KVA включително на 20 KV, 10 KV или 6 KV.*

От 2000 година " ЕЛПРОМ ЕМЗ " ООД град Шабла започна да предлага за продажба на клиенти свои налични заводски рециклирани трифазни силови, маслени, високоволтови трансформатори с мощност от 160 KVA до 1000 KVA на 20 KV, 10 KV и на 6 KV , като дава 12 месеца гаранция на продаваните трансформатори.

През 2003 година " ЕЛПРОМ ЕМЗ " ООД град Шабла започна да поизвежда и да продава НОВИ трифазни, силови, маслени, високоволтови трансформатори с мощност от 25 KVA до 100 KVA на 20 KV, 10 KV или на 6 KV, като дава 18 месеца гаранция на продаваните трансформатори.

Произвеждат се следните мощности /25, 40, 50, 63, 100 KVA/.

6. ***" ЕЛПРОМ ЕМЗ " ООД град Шабла произвежда сухи трансформатори*** за електрозадвижване с високомоментни постоянно - токови двигатели с номинална мощност от 0.25kVA до 20 kVA отговарящи на изискванията на ОН 0470427-84, те са комплектовъчни изделия в електрозадвижвания с високомоментни постояннотокови двигатели, които се използват в металорежещите машини, робототехниката и други.

7. ***" ЕЛПРОМ ЕМЗ " ООД град Шабла произвежда монофазни и трифазни дросели с ВЪЗДУШНА МЕЖДИНА*** и номинална мощност до 400kWAR , които са комплектовъчни изделия в уредбите за компенсиране на cosф. Произвеждат се и дросели с номинална индуктивност до 1.5 H и номинален ток до 100 A отговарящи на изискванията на ОН 0477415-87, които са комплектовъчни изделия за електрозадвижвания с високомоментни постояннотокови двигатели за задвижване на металорежещи машини, роботи и други.

8. ***"ЕЛПРОМ ЕМЗ " ООД град Шабла произвежда трансформатори еднофазни и трифазни изпълнени*** по заявка или по заявка и конструктивна документация на клиента отговарящи на нормативни документи посочени от клиента.

УПРАВИ

На основание чл. 2
от ЗЗЛД

Приложение 4.1

„ ЕЛПРОМ ЕМЗ " ООД ГРАД ШАБЛА

ГАМА ТОКОВИ ИЗМЕРВАТЕЛНИ ТРАНСФОРМАТОРИ НН ТИП СТ-1; СТ-2, СТ-3 И СТ-4

ТЕЛЕФОНИ ЗА КОНТАКТИ:
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Технически 05743 / 42 - 84
Търг. Отдел 05743 / 41 - 84
Факс/телекопир 05743 : 50 - 20
E-mail : elpromemz@mbox.infotel.bg

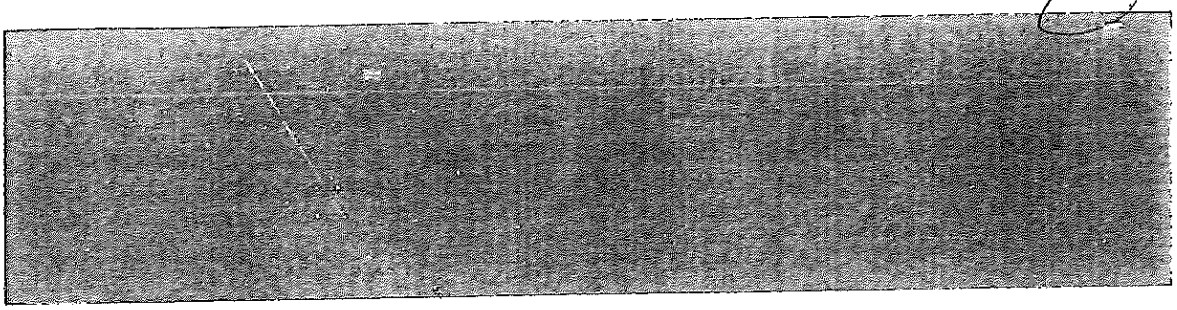
TÜV NORD

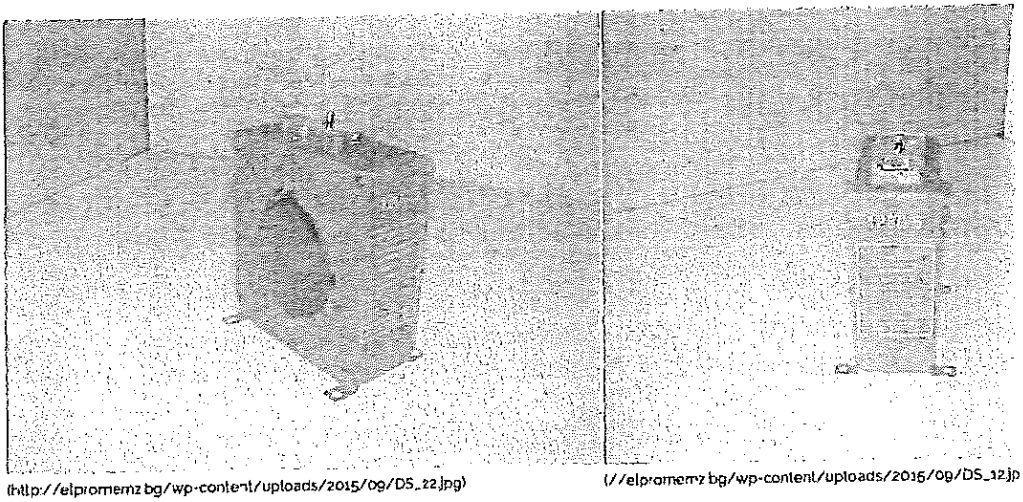
таблица 1.

Тип Type	Превод. отношение Ipn/Isn Ratet current ratio A / A	Най-високо работно напрежение Ratet voltage power network kV	Клас на точност Class of accuracy %	Номинална мощност Sn Rated power VA	Номинален ток на терм. устойчивост Rated short-time termal stavility Ith, kA	Номинален ток на дин. устойчивост Rated short-time dinamic stavility Idyn, kA	Номинален коефициент на безоп. Security factor for apperatus Fs	Заводски шифър Serial number
1	2	3	4	5	6	7	8	9
СТ - 1 първичен вторичен	30 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1210302 - XXXX
	50 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1210502 - XXXX
	75 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1210752 - XXXX
	100 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1211002 - XXXX
	150 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1211502 - XXXX
СТ - 2 шина 30x10 40x10 кабел ф36	150 / 5	0,72	0.5	5	60 Ipn	2,5 Ith	5 ; 10	1221505 - XXXX
	200 / 5	0,72	0.5	5	60 Ipn	2,5 Ith	5 ; 10	1222005 - XXXX
	250 / 5	0,72	0.5	5	60 Ipn	2,5 Ith	5 ; 10	1222505 - XXXX
	300 / 5	0,72	0.5	5	60 Ipn	2,5 Ith	5 ; 10	1223005 - XXXX
СТ - 3 шина 30x10 40x10 ф36	300 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1233005 - XXXX
	400 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1234005 - XXXX
	500 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1235005 - XXXX
	600 / 5	0,72	0.2; 0.5; 0.5S	5 ; 10	60 Ipn	2,5 Ith	5 ; 10	1236005 - XXXX
СТ - 3 шина 50x10 ф48	500 / 5	0,72	0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1235005 - XXXX
	600 / 5	0,72	0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1236005 - XXXX
	750 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1237505 - XXXX
	800 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1238005 - XXXX
СТ-4 за шина 60x10 или кабел ф73	300 / 5	0,72	0.5; 0.5S	5	60 Ipn	2,5 Ith	5 ; 10	1243005 - XXXX
	400 / 5	0,72	0.5; 0.5S	5	60 Ipn	2,5 Ith	5 ; 10	1244005 - XXXX
	500 / 5	0,72	0.5; 0.5S	5	60 Ipn	2,5 Ith	5 ; 10	1245005 - XXXX
	600 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1246005 - XXXX
	750 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1247505 - XXXX
	800 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1248005 - XXXX
	1000 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1249005 - XXXX
	1200 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1241205 - XXXX
	1250 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	1241505 - XXXX
	1500 / 5	0,72	0.2; 0.5; 0.5S	5; 10; 15	60 Ipn	2,5 Ith	5 ; 10	

ВЯРНО С ОРИГИНАЛА

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД





(http://elpromemz.bg/wp-content/uploads/2015/09/DS_22.jpg) (//elpromemz.bg/wp-content/uploads/2015/09/DS_12.jp

ТИП СТ-4

Категория: НН (http://elpromemz.bg/portfolio-category/hh2/)

ТОКОВИ ИЗМЕРВАТЕЛНИ ТРАНСФОРМАТОРИ НН

Токови измервателни трансформатори за НН тип СТ-4

са проходни трансформатори за вътрешен монтаж с една вторична намотка с клас на точност 0.2 0.5, 0.5S и номинална мощност от 5 VA 10 VA и 15 VA в диапазона на номинални токове от 750/5, 800/5 1000/5, 1200/5 1250/5 и 1500/5 А и максимално работно напрежение 0.72kV
Отговарят на изискванията на БДС EN 61869-2:2012, БДС EN 60044-1:2001
Одобрени от БИС с удостоверения за одобрен тип средство за измерване №06.04.4547 от 03.04.2006 година

Скрий

Технически характеристики на Тип СТ - 4
обхват 750/5А 800/5А 1000/5А 1200/5А 1250/5А 1500/5А

1 Номинално напрежение - 0.72 KV
2 Честота - 50 Hz
3 Номинален първичен ток Ipn - 750 800, 1000, 1200 1250 1500 А
4 Номинален вторичен ток Isn - 5 А
5 Клас на точност - 0.2, 0.5 0.5S
6 Номинална мощност - 5 10, 15 VA
7 Ток на термична устойчивост - 60 x Ipn
8 Ток на динамична устойчивост - 2.5 x Ith
9 Маса - 0.920 до 1.00 кр
10 Изолация - суха клас на топлоустойчивост В

Условия на работа

023

Токовите трансформатори ниско напрежение се монтират на закрито при температура на околната среда от -35о С до +45о С и височина над морското равнище до 1000м

Стандартизирани документи : Изделието отговаря на БДС EN 61869 -2:2012
БДС EN 60044-1:2001, IEC 60044-1:1999

Габаритни размери (http://elpromemz.bg/wp-content/uploads/2015/12/CT_4_HH_GABARITNI_RAZMER.pdf)

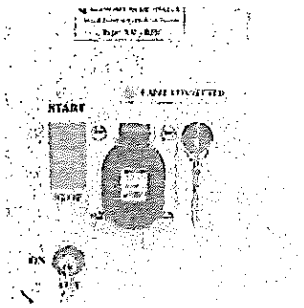
Удостоверения за одобрени типове. Скрий

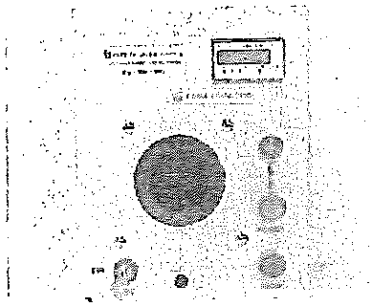
Удостоверение (http://elpromemz.bg/%D1%83%D0%B4%D0%BE%D1%81%D1%82%D0%BE%D0%B2%D0%B5%D1%80%D0%B5%D0%BD%D0%BE%D0%B5 %D0%B7%D0%B0-%D0%BD%D0%BD/)

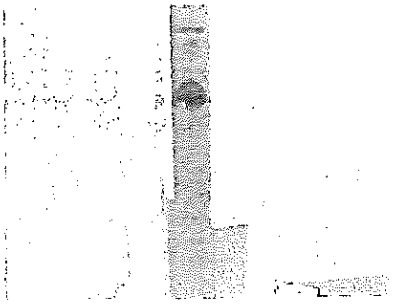
VIEW PROJECT

КАТАЛОГ ПРОДУКТИ

нашата продуктува гама







РЕПУБЛИКА БЪЛГАРИЯ
Български институт по метрология

REPUBLIC OF BULGARIA
Bulgarian Institute of Metrology

УДОСТОВЕРЕНИЕ
ЗА ОДОБРЕН ТИП СРЕДСТВО ЗА ИЗМЕРВАНЕ
Measuring Instrument Type-approval Certificate

№ 16.03.5100

Издадено на производител: *Issued to manufacturer:* „ЕЛПРОМ ЕМЗ" ООД, гр. Шабла, ул. Нефтяник № 38

На основание на: *In Accordance with:* чл. 32, ал. 1 от Закона за измерванията (ДВ, бр. 46 от 2002 г., изм. бр. 88 от 05 г., изм. и доп. бр. 95 от 2005 г.)

Относно: *In Respect of:* измервателен токов трансформатор тип СТ-х

Знак за одобрен тип: *Type Approval Mark:* BG 16 5100

Технически и метрологични характеристики: *Technical and metrological characteristics:* приложение, неразделна част от настоящото удостоверение за одобрен тип средство за измерване

Срок на валидност: *Valid until:* 14.03.2026 г.

Вписва се в регистъра на одобрените за използване типове средства за измерване под №: *Reference №:* 5100

Дата на издаване на удостоверението за одобрен тип: *Date:* 14.03.2016 г.

И. Д. ПРЕДСЕ

На основание чл. 2
от ЗЗЛД

Приложение към удостоверение за одобрен тип № 16.03.5100

Издадено на производител: „ЕЛПРОМ ЕМЗ" ООД; гр. Шабла, ул. Нефтяник № 38

Относно: измервателен токов трансформатор тип СТ-х

1. Описание на типа:

Измервателните токови трансформатори тип СТ-х се използват за измерване и защита на електрически мрежи с максимално работно напрежение 0,72 kV.

Измервателните токови трансформатори тип СТ-1 се състоят от тороидален магнитопровод с първична и вторична намотки, поместени в кутия от пласмаса. Магнитопровода е направен от силициева ламарина, Mu-метал или пермалой. Върху магнитопровода е намотана вторичната намотка равномерно по целия обем. Това осигурява ефективното магнитно взаимодействие на първичната и вторичната намотки. Броят на навивките на вторичната намотка се определя от отношението между първичния и вторичния номинален ток. Първична и вторична намотки са поместени в кутийка от пластмаса, изработена от пластмаса тип Tecomid NB40 NL E с клас на възпламеняемост съгласно IEC 707–V-0. Началото и края на вторичната намотка са изведени на клеми разположени в горната част на трансформатора и са защитени с прозрачна пластмасова капачка, която е отваряема и има възможност за пломбиране.

Измервателните токови трансформатори тип СТ-2, тип СТ-3 и тип СТ-4 са проходен тип, пригодени за монтаж за шина или за кабел. Състоят се от магнитопровод с вторична намотка и са поместени в пластмасова кутия, изработена от пластмаса тип Tecomid NB40 NL E с клас на възпламеняемост съгласно IEC 707-V-0.

Измервателните токови трансформатори тип СТ-х са предназначени за експлоатация на закрито, при надморска височина до 1000 m, температура на околната среда от минус 35 °C до 45 °C и относителна влажност до 70 %. Изолацията спрямо магнитопровода и намотките е суха, с клас на топлоустойчивост B.

При измервателните токови трансформатори тип СТ-х има възможност да се пломбира кутията на трансформатора с цел предотвратяване на неправомерен достъп до магнитопровода и намотките. Има възможност да се пломбира и капачката, която предпазва клемите на вторичната намотка на трансформатора.

2. Технически и метрологични характеристики:

Характеристики	Тип на трансформатора			
	СТ-1	СТ-2	СТ-3	СТ-4
Максимално работно напрежение, kV	0,72			
Честота, Hz	50			
Номинален първичен ток, A	30; 50; 75; 100; 150	100; 150; 200; 250; 300	400; 500; 600	750; 800; 1000; 1200; 1250; 1500; 1600; 2000; 2500; 3000
Клас на точност	0,2; 0,2S; 0,5; 0,5S	0,5; 0,5S	0,2; 0,2S; 0,5; 0,5S	0,2; 0,2S; 0,5; 0,5S
Номинален вторичен ток, A	5			
Мощност, VA	5; 10	5; 10	5; 10; 15	5; 10; 15
Коефициент на сигурност, FS	FS5; FS10			

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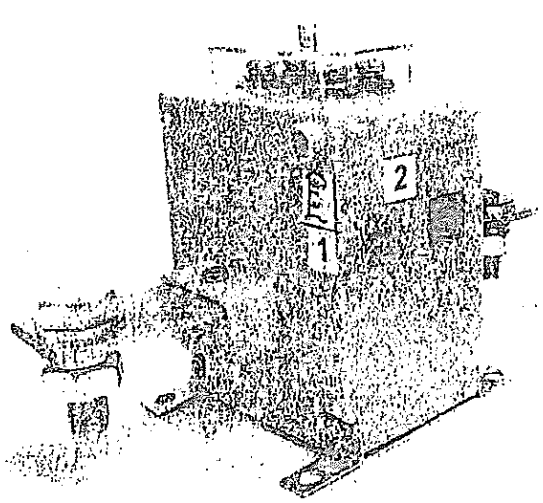
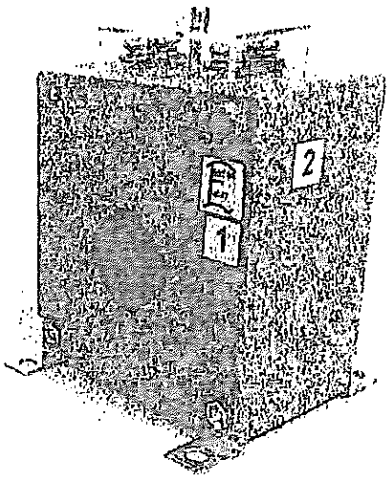
3. Типово означение: СТ-х (СТ-1; СТ-2; СТ-3; СТ-4)

4. Описание на местата, предназначени за поставяне на знаци от метрологичен контрол:

- 1 - Знак за одобрен тип;
- 2 - Знак за първоначална проверка (марка за залепване).





РЕПУБЛИКА БЪЛГАРИЯ
Български институт по метрология

REPUBLIC OF BULGARIA
Bulgarian Institute of Metrology

УДОСТОВЕРЕНИЕ
ЗА ОДОБРЕН ТИП СРЕДСТВО ЗА ИЗМЕРВАНЕ
Measuring Instrument Type-approval Certificate

№ 16.03.5101

Издадено на производител:
Issued to manufacturer:
„ЕЛПРОМ ЕМЗ" ООД, гр. Шабла, ул.. Нефтяник № 38

На основание на:
In Accordance with:
чл. 32, ал. 1 от Закона за измерванията (ДВ, бр. 46 от 2002 г., изм. бр. 88 от 05 г., изм. и доп. бр. 95 от 2005 г.)

Относно:
In Respect of:
измервателен токов трансформатор тип ххСТ-х PR

Знак за одобрен тип:
Type Approval Mark:
BG 16
5101

Технически и метрологични характеристики:
Technical and metrological characteristics:
приложение, неразделна част от настоящото удостоверение за одобрен тип средство за измерване

Срок на валидност:
Valid until:
14.03.2026 г.

Вписва се в регистъра на одобрените за използване типове средства за измерване под №:
Reference №:
5101

Дата на издаване на удостоверението за одобрен тип:
Date:
14.03.2016 г.

И. Д. ПРЕДС

На основание чл. 2
от ЗЗЛД

Приложение към удостоверение за одобрен тип № 16.03.5101

Издадено на производител: „ЕЛПРОМ ЕМЗ" ООД; гр. Шабла, ул. Нефтяник № 38

Относно: измервателен токов трансформатор тип ххСТ-х PR

1. Описание на типа:

Измервателните токови трансформатори тип ххСТ-х PR се използват за измерване и защита на електрически мрежи с максимално работно напрежение 7,2 kV; 12 kV и 24 kV.

Измервателните токови трансформатори тип ххСТ-1 са с тороидален магнитопровод с една първична и две вторични намотки, които могат да бъдат за измерване или за защита в произволна комбинация.

Измервателните токови трансформатори тип ххСТ-2 са с тороидален магнитопровод с една първична и една вторична намотка за измерване.

Измервателните токови трансформатори тип ххСТ-3 са с тороидален магнитопровод с една първична и една вторична намотка за защита.

Измервателните токови трансформатори тип ххСТ-4 са с тороидален магнитопровод с една първична и три вторични намотки, които могат да бъдат за измерване или за защита в произволна комбинация.

Измервателните токови трансформатори тип ххСТ-5 са с тороидален магнитопровод с една първична и четири вторични намотки, които могат да бъдат за измерване или за защита в произволна комбинация.

Измервателните токови трансформатори тип ххСТ-хPR са с тороидален магнитопровод с външно превключване на първичната или вторичната намотка.

Изолацията на измервателните токови трансформатори тип ххСТ-х PR между магнитопровода и намотките е суха със силикон.

Измервателните токови трансформатори тип ххСТ-хPR са предназначени за експлоатация на закрито, при надморска височина до 1000 m, температура на околната среда от минус 35 °C до 45 °C.

При измервателните токови трансформатори тип ххСТ-хPR има възможност да се пломбира както кутията на трансформатора, с цел предотвратяване на неправомерен достъп до магнитопровода и намотките, така и пломбиране на капачката, която предпазва клемите на вторичната намотка на трансформатора.

2. Технически и метрологични характеристики:

Характеристика	Тип на трансформатора					
	ххСТ-1	ххСТ-2	ххСТ-3	ххСТ-4	ххСТ-5	ххСТ-хPR
Максимално работно напрежение, kV	7,2; 12; 24					
Честота, Hz	50					
Номинален първичен ток, A	от 5 до 3000					
Номинален вторичен ток, A	1; 5					
Клас на точност: - измервателна намотка - защитна намотка	0,2; 0,2S; 0,5; 0,5S; 5P10; 5P20; 10P10; 10P20;	0,2; 0,2S; 0,5; 0,5S	5P10; 5P20; 10P10; 10P20;	0,2; 0,2S; 0,5; 0,5S; 5P10; 5P20; 10P10; 10P20;	0,2; 0,2S; 0,5; 0,5S; 5P10; 5P20; 10P10; 10P20;	0,2; 0,2S; 0,5; 0,5S; 5P10; 5P20; 10P10; 10P20;
Мощност, VA	5; 10; 15; 30; 40; 50					
Коефициент на сигурност, FS	5; 10					

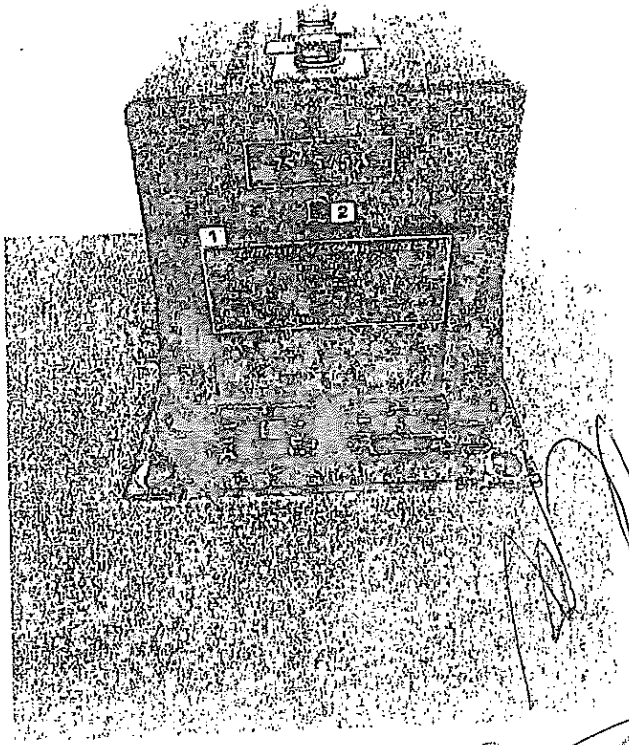
Приложение към удостоверение за одобрен тип № 16.03.5101

3. Типово означение: xxCT-x PR:

xx	CT	x	PR
7,2 kV 12 kV 24 kV	Токов трансформатор	1 - Две вторични намотки за измерване или защита в произволна комбинация; 2 - Една вторична намотка за измерване; 3 – Една вторична намотка за защита; 4 - Три вторични намотки за измерване или защита в произволна комбинация; 5 - Четири вторични намотки за измерване или защита в произволна комбинация.	Трансформатор с външно превключване на първичната или на вторичната намотка

4. Описание на местата, предназначени за поставяне на знаци от метрологичен контрол:

- 1 - Знак за първоначална проверка (марка за залепване);
- 2 - Знак за одобрен тип.



ВЯРНО С ОРИГИНАЛА

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

630

ПРИЛОЖЕНИЕ №3

"ЕЛПРОМ ЕМЗ" ООД град ШАБЛА

ТЕЛЕФОНИ ЗА КОНТАКТИ:
Управител 05743 / 45 - 68
Гл.счетоводител 05743 / 42 - 84
Търг. Отдел 05743 / 41 - 84
Факс/тел.секретар 05743 / 50 - 20
E-mail : elpromemz@mbox.infotel.bg

ТЕХНИЧЕСКО ОПИСАНИЕ

ГАМА ТОКОВИ ИЗМЕРВАТЕЛНИ ТРАНСФОРМАТОРИ тип СТ-1, СТ-2, СТ-3 и СТ-4 за НН до 1000V ПРОИЗВОДСТВО НА " ЕЛПРОМ ЕМЗ " ООД град ШАБЛА

Токови измервателни трансформатори тип СТ-1; тип СТ-2, тип СТ-3 и тип СТ-4 са за ниско напрежение до 1000V за вътрешен монтаж с клас на точност 0.2; 0.5 или 0.5S и номинална мощност до 50VA в диапазона от номинални токове до 3000А съгласно БДС EN 60044-1:2001 и IEC 60044-1:1999.

- Тип СТ-1 се състои от тороидален магнитопровод с първична и вторична намотки , поместени в кутийка от пластмаса изработена от пластмаса тип Росап – В4235 с клас на възпламеняемост съгласно IEC 707 – V-0.

  Произвежданите токови трансформатори са в диапазона от 30/5 А до 150/5 А с клас на точност 0.2, 0.5 или 0.5S с мощност 5VA и 10VA.

- Тип СТ-2 Тип, СТ-3 и Тип СТ-4 – са проходни типове токови измерителни трансформатори пригодени съответно за шина или кабел - състоят се от тороидален магнитопровод с вторична намотка , поместени в кутийка от пластмаса изработена от пластмаса тип Росап – В4235 с клас на възпламеняемост съгласно IEC 707 – V-0.

  Произвежданите токови трансформатори са в диапазона от 150/5А до 2000/5А с клас на точност 0.5 или 0.5S и мощност 5VA; 10VA и 15VA.

07.2.2012 г.

631

ТЕХНИЧЕСКИ ДАННИ Тип СТ-1, Тип СТ-2, Тип СТ-3 и Тип СТ-4

Условия на работа: Токовите измервателни трансформатори за средно напрежение се монтират на закрито при температура на околната среда от -35С до +45С и височина над морското равнище до 1000м.

1.	Номинално напрежение	- до 0,75 KV
2.	Честота	- 50 Hz
3.	Номинален първичен ток Ipn	- до 2000 A
4.	Номинален вторичен ток Isn	- 5 A
5.	Клас на точност на ядрото за мерене	- 0.2, 0.5, 05S
6.	Номинална мощност	- 5, 10, 15VA
7.	Номинален ток на термична устойчивост Ith, кА	- 60 Ipn
8.	Номинален ток на динамична устойчивост Idyn, кА	- 2,5 Ith
9.	Номинален коефициент на безопастност Fs	- 5 или 10
10.	Маса, в кг взависимост от преводното отношение от	- 0.485 до 1,070
11.	Изолация - суха, клас на топлоустойчивост B	

Стандартизирани документи: Изделието отговаря на БДС EN 60044-1:2001 и IEC 60044-1:1999.

При всичките произвеждани от " ЕЛПРОМ ЕМЗ " ООД град Шабла токови измервателни трансформатори е предвидена възможност за пломбиране както на кутията на трансформатора с цел предотвратяване на неправомерен достъп до магнитопровода и самите намотки, така и на предпазната капачка, която предпазва клемите на вторичната намотка на трансформатора.

На основание чл. 2
от ЗЗЛД

УПРАВИТЕЛ

032

Приложение: 4.

БЪЛГАРСКИ ИНСТИТУТ ПО МЕТРОЛОГИЯ
Главна дирекция Мерки и измервателни уреди
отдел "Изследване на типа на средства за измерване"
сектор "Електрични величини"
София, бул. Г.М.Димитров 52 Б, тел. 873-52-98

ПРОТОКОЛ ОТ ИЗПИТВАНЕ

№ 19-ЕВ / 13.07.2006 г.

1. **Обект на изпитването:** Токов измервателен трансформатор тип СТ- Х
2. **Номер и дата на заявката:** АУ-03-654/27.06.2006 г.
3. **Заявител:** " ЕЛПРОМ - ЕМЗ" ООД гр. Шабла
4. **Производител:** " ЕЛПРОМ - ЕМЗ" ООД гр. Шабла
5. **Метод на изпитване:** БДС EN 60044-1 Измервателни трансформатори Част 1: Токови трансформатори.
6. **Период на изпитване:** 07.07.2006 г. до 14.07.2006 г.
7. **Изпитани образци:** ф. № 20218, 33063, 29967, 29477, 34805, 32820
8. **Описание на типа:**

Гамата измервателни токови трансформатори тип СТ-х са за мрежи ниско напрежение.

Токовите трансформатори тип СТ-1 се състоят от тороидален магнитопровод с първична и вторична намотка, а тип СТ-2, тип СТ-3 и тип СТ-4 са проходен тип трансформатори, пригодени за шина или кабел, с вторична намотка.

Резултатите в протокола се отнасят само за изпитваните образци.

На основание чл. 2 от ЗЗЛД

Началник от

Протокола може да бъде разпечатван единствено и само с разрешение на началника отдел "Изследване на типа на средствата за измерване"

На основание чл. 2 от ЗЗЛД

Върно с оригинала.

Приложение: 4.

9. Технически и метрологични характеристики:

Тип на трансформатора	СТ-1	СТ-2	СТ-3	СТ-4
Номинален първичен ток, А	30, 50, 75, 100,150	200, 250, 300	400, 500, 600	1200, 1250, 1500
Номинален вторичен ток, А	5			
Клас на точност	0,5 S			
Максимално работно напрежение, kV	0,72			
Честота, Hz	50			
Номинална мощност, VA	5, 10	5, 10	5, 10, 15	5, 10, 15

10. Технически средства използвани при изпитването:

10.1. Уредба за проверка на токови трансформатори тип АИТ ф. № 45/1972 с еталонен трансформатор тип ТІ 50 ф. № 7210453, свидетелство за калибриране № 037- ЕЕИ/ 16.03.2005 год.

10.2. Уредба за изпитване на диелектрична якост тип РЕО 3/50 ф. № 671897308

10.3. Мегаомметър тип Ф 41/2, ф. № 62862.

11. Резултати от изпитванията:

11.1. Проверка на маркировката

11.1.1. Маркировка на изводите – БДС EN 60044-1 т. 10.1.1 и 10.1.2

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.
Протокол № 12/12.07.2006 г.

11.1.2 Означение на полярностите – БДС EN 60044-1 т. 10.1.3

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.
Протокол № 12/12.07.2006 г.

11.2. Маркировка на табелките с технически данни – БДС EN 60044-1 т. 10.2 и т. 11.7

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.
Протокол № 12/12.07.2006 г.

Вярно с оригинала

ЕЛПРОМ-ЕМЗ-ООД ШАБЛА

ПЛОВДИВ ЕАД

034

Приложение: 4.

11.3. Проверка на диелектричната якост на първичната намотка – /3 kV за 60 s/ — БДС EN 60044-1 т. 5.1.4

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.
Протокол № 12/12.07.2006 г.

11.4. Проверка на диелектричната якост на вторичната намотка – /3 kV за 60 s/ — БДС EN 60044-1 т. 5.1.4

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.
Протокол № 12/12.07.2006 г.

11.5. Определяне грешките на трансформаторите – — БДС EN 60044-1 т.11.2

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.
Протокол № 12/12.07.2006 г.

11.6. Проверка – коефициент на безопасност - — БДС EN 60044-1 т.11.6

Протоколи № 01÷ 03 /10.07.2006 г.
Протоколи № 04÷ 06 /11.07.2006 г.

Присъствали на изпитването:

Младши експерт

/и

На основание чл. 2 от ЗЗЛД

Началник сектор

/и

Съгласно с оригинала

635

"ЕЛПРОМ ЕМЗ" ООД град Ш[illegible].БЛА

ПАСПОРТ - СЕРТИФИКАТ

ИЗПИТАТЕЛЕН ПРОТОКОЛ

За трансформатор токов измерителен ниско напрежение

Тип СТ – 4 обхват 800/5А, 1000/5А, 1200/5А

Заводски № 12410005 - xxxxx

I Условия на работа : Токовите трансформатори ниско напрежение се монтират на закрито при температура на околната среда от –35° С до +45°С и височина над морското равнище до 1000м.

II Технически характеристики :

1. Номинално напрежение		0,72 KV
2. Честота	-	50 Hz
3. Номинален първичен ток Ipn	-	800 : 1000 : 1200 A
4. Номинален вторичен ток Isn	-	5 A
5. Клас на точност	-	0,5
6. Номинална мощност	-	5 VA
7. Ток на термична устойчивост	-	60 x Ipn
8. Ток на динамична устойчивост	-	2,5 x Ith
9. Маса	-	0,9 : 1,0 : 1,1 kg
10. Изолация - суха, клас на топлоустойчивост В		

III Стандартизирани документи . Изделието отговаря на БДС EN 60044-1:2001; IEC 60044-1:1999.

IV Резултати от приемно-предавателните изпитания

1. Проверка клас на точност : Отговаря на клас на точност - 0,5
2. Изпитване на изолацията между първичната и вторичната намотка с променливо напрежение 3 KV за 1 минута издържал

V. Сертификат за качество : Настоящият сертификат за качество се дава въз основа на приемно - предавателните заводски изпитания от ... . 2012 година.
НАСТОЯЩИЯ ТИП ТОКОВ ИЗМЕРИТЕЛЕН ТРАНСФОРМАТОР Е ОДОБРЕН ОТ ДАМТН С УДОСТОВЕРЕНИЕ № 4547 от 05.04.2006 година

VI. Комплектност на доставката: Запасни части към изделието не се предвиждат

ИНСТРУКЦИЯ ЗА МОНТАЖ И ЕКСПЛОАТАЦИЯ НА ТОКОВИ ИЗМЕРИТЕЛНИ ТРАНСФОРМАТОРИ ТИП СТ – 4

1. Място на монтаж : на закрито.
2. Начин на свързване : Първичната намотка на токовите трансформатори се свързва последователно към захранващите проводници на монтажа, а релетата и апаратите - последователно на вторичната намотка
3. Експлоатационни условия на работа : При ползване на токовите трансформатори трябва да се спазват следните условия :

А/ Трансформаторите да се монтират в закрити помещения.

Б/ Съединителните проводници да са свързани добре към източника и консуматора. Когато изводите са на винтове, съединителните проводници трябва да се затегнат здраво между две месингови шайби или кабелна обувка.

В/ Токът, който се черпи от трансформатора, по специално мощността на трансформатора, да не е по-голяма от мощността, посочена на табелката. Претоварването на трансформаторите се ограничава от допустимите температури на загряване на изолациите.

Г/ Токовите трансформатори трябва да работят при непрекъснат или периодичен контрол

Д/ При обслужване на токовите трансформатори е задължително да се спазва следното условие

ПРИ ВКЛЮЧЕНА ВЪВ ВЕРИГАТА ПЪРВИЧНА НАМОТКА ВТОРИЧНАТА НАМОТКА НА ТРАНСФОРМАТОРА НЕ ТРЯБВА ДА ОСТАВА ОТВОРЕНА !

Когато се налага прекъсване на вторичната верига, вторичните клеми на трансформаторите трябва да се свързват на късо с проводник със сечение 2,5 кв. мм. Във вторичната верига на токов трансформатор предпазители не се поставят.

Е/ При работа на трансформатора единият извод на вторичната намотка се заземява.

4. Безопасност и хигиена на труда : За осигуряване на безопасна работа на обслужващия персонал е необходимо да се спазват следните условия:

А/ Единият извод на вторичната намотка да се заземи

Б/ При включване на първичната намотка във веригата, вторичната намотка да не се оставя отворена.

В/ След извършване на монтажа на трансформаторите към таблата и уредите, върху клемите НН на първичната намотка, да се постави предпазна капачка и да се пломбира

Г/ При ревизия на трансформаторите, същите да не са под напрежение.

Д/ При проверка на трансформаторите откъм високата страна обслужващия персонал да работи с лични предпазни средства.

При добри условия на работа и при периодичен контрол, трансформаторите могат да работят продължително време без повреда.

5 Опаковка, транспорт и съхранение : Трансформаторите се поставят в специални кутии от картон желание Транспортират се във всякакъв вид транспортни средства

ПРИ НЕСПАЗВАНЕ НА НАСТАВЛЕНИЯТА, ДАДЕНИ В НАСТОЯЩАТА ИНСТРУКЦИЯ, ЗАВОДЪТ ПРОИЗВОДИТЕЛ НЕ ПРИЕМА РЕКЛАМАЦИИ, НАПРАВЕНИ В ГАРАНЦИОННИЯ СРОК НА ИЗДЕЛИЕТО.

ГАРАНЦИОННА КАРТА

"ЕЛПРОМ ЕМЗ" ООД град Шабла се задължава да замени или ремонтира безвъзмездно токови измерителни трансформатори, които в продължение на 36 месеца от датата на продажбата им от завода, са показали дефекти или потребителят е констатирал несъответствия на трансформатора с изискванията на съответния стандарт.

Замяната или ремонтът се извършва при условие, че са спазени изискванията за транспорт, съхранение, монтаж и експлоатация, дадени от предприятието - производител в придружаващата документация и е запазен оригиналният паспорт - сертификат с гаранционната карта на съответния трансформатор.

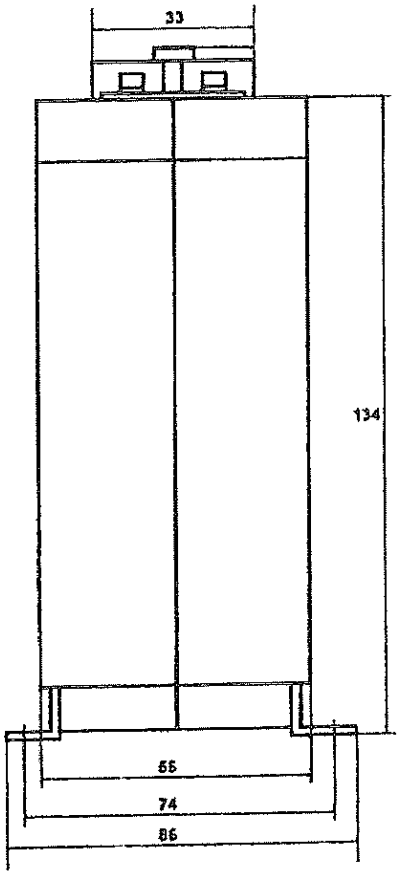
ПРИЛОЖЕНИЕ №5

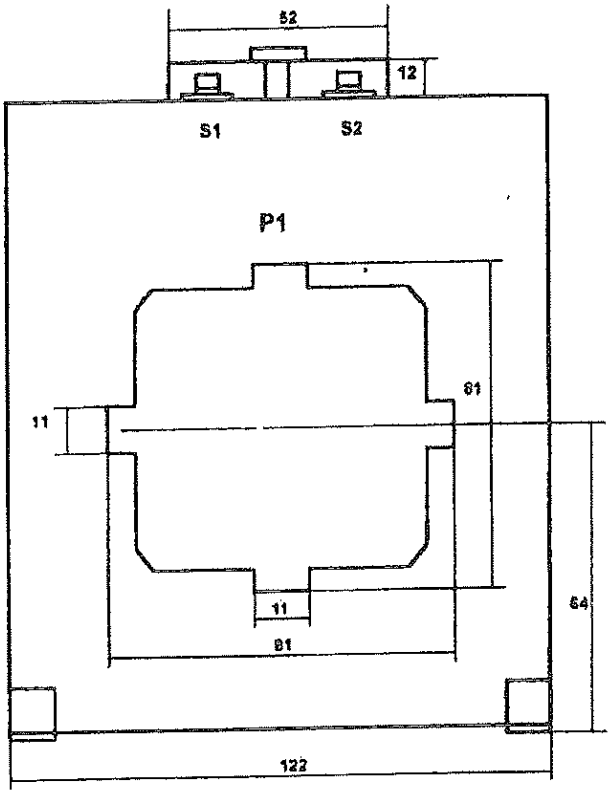
На основание чл. 2 от ЗЗЛД

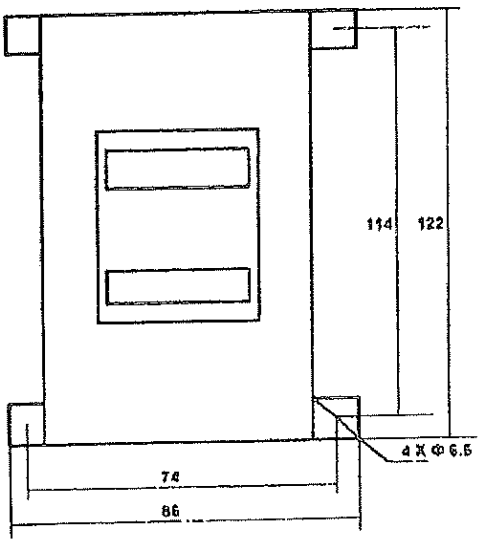
ПРИЛОЖЕНИЕ I

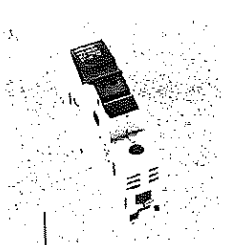
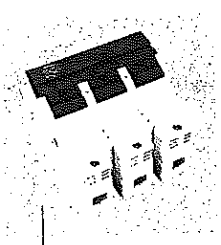
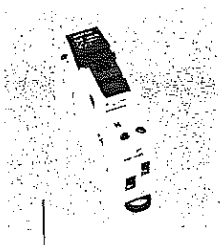
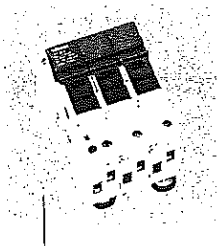
ПРИСЪЕДИНИТЕЛНИ РАЗМЕРИ ЗА ТОКОВИ ИЗМЕРВАТЕЛНИ ТРАНСФОРМАТОРИ

тип СТ- 4 включващи преводните отношения 800/5А, 1000/5А, и 1200/5А







31 110		31 123		31 273		31 274	

AMBUS®Panel

IEC-compatible holder for cylindrical fuses
with box terminals, clip-on mounting, contact protection in accordance with DIN 50274

AMBUS®Panel, holder for cylindrical fuses, **standard model, without neutral conductor**

Size	Rated current	Type	Width	Connection	Pack size	Weight kg/100 u.		Part no.	
10x38	32A	1-pole	18	0.75 - 25mm² / AWG 18 - 4	12	5.2		31 110	17
		2-pole	36	0.75 - 25mm² / AWG 18 - 4	6	10.3		[illegible]	17
		3-pole	54	0.75 - 25mm² / AWG 18 - 4	4	15.5		[illegible]	17
14x51	50A	1-pole	27	1.5 - 35mm² / AWG 14 - 2	6	9.7		[illegible]	17
		2-pole	54	1.5 - 35mm² / AWG 14 - 2	3	20.2		[illegible]	17
		3-pole	81	1.5 - 35mm² / AWG 14 - 2	2	30.4		[illegible]	17
22x58	100A	1-pole	36	4 - 50mm² / AWG 10 - 1/0	6	15.8		[illegible]	17
		2-pole	72	4 - 50mm² / AWG 10 - 1/0	3	32.2		[illegible]	17
		3-pole	108	4 - 50mm² / AWG 10 - 1/0	2	48.6		31 123	17

AMBUS®Panel, holder for cylindrical fuses, **standard model, neutral conductor on the right**

10x38	32A	1-pole+N	36	0.75 - 25mm² / AWG 18 - 4	6	11.3		[illegible]	17
		3-pole+N	72	0.75 - 25mm² / AWG 18 - 4	3	21.7		[illegible]	17
14x51	50A	1-pole+N	54	1.5 - 35mm² / AWG 14 - 2	3	21.8		[illegible]	17
		3-pole+N	108	1.5 - 35mm² / AWG 14 - 2	1	42.7		[illegible]	17
22x58	100A	1-pole+N	72	4 - 50mm² / AWG 10 - 1/0	3	35.8		[illegible]	17
		3-pole+N	144	4 - 50mm² / AWG 10 - 1/0	1	67.5		[illegible]	17

AMBUS®Panel, holder for cylindrical fuses, **standard model, neutral conductor on the left**

14x51	50A	3-pole+N	108	1.5 - 35mm² / AWG 14 - 2	1	42.7		[illegible]	17
22x58	100A	3-pole+N	144	4 - 50mm² / AWG 10 - 1/0	1	67.5		[illegible]	17

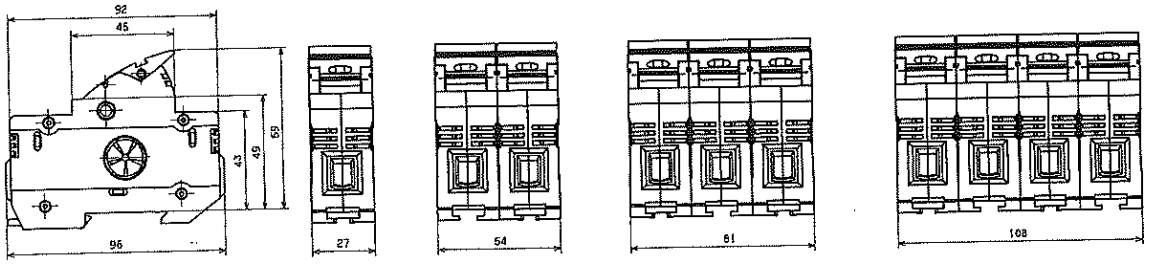
AMBUS®Panel, holder for cylindrical fuses, **N-module**

10x38	32A	N	18	0.75 - 25mm² / AWG 18 - 4	12	6.2		[illegible]	17

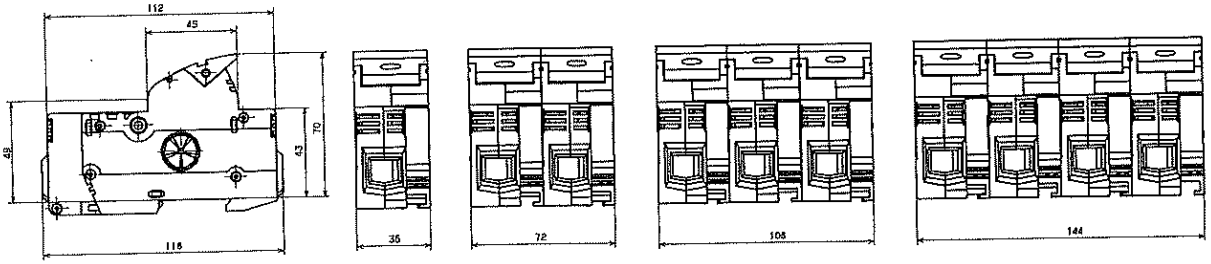
AMBUS®Panel, holder for cylindrical fuses, **standard model, with integrated neutral conductor (on the left)**

10x38	32A	1-pole+N	18	1.5 - 10mm²	12	9.0		31 273	17
		3-pole+N	54	1.5 - 10mm²	4	22.0		31 274	17

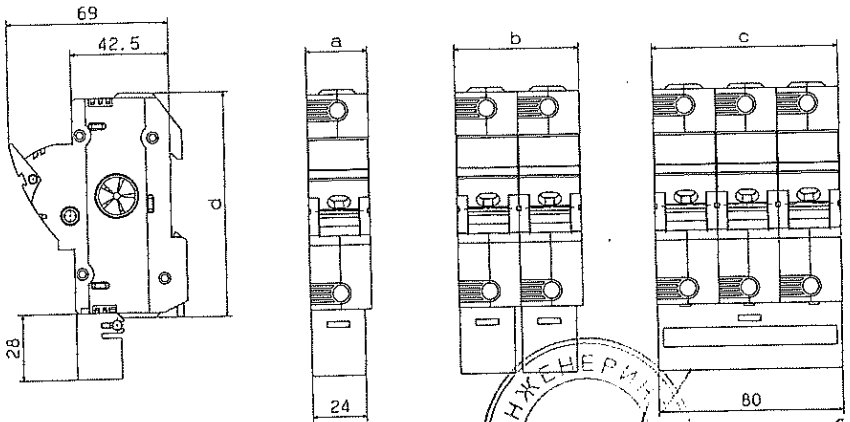
31 115 - 31 119
31 135 - 31 138
31 168
31 278 - 31 280



31 120 - 31 124
31 140 - 31 143
31 171
31 281 - 31 283



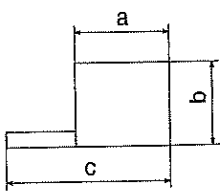
	a	b	c	d
31 940	27			96
31 941			81	96
31 942	36			118
31 943			108	118
31 957		72		118
31 972		54		96

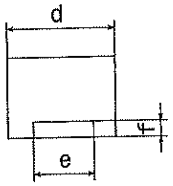


wöhner

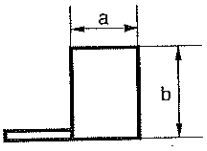
ВЯРНО С ОРИГИНАЛА

	a	b	c	d	e	f
01 198	42	32	68	23	6.5	4
01 228	42	32	91	23	6.5	4
31 028	17	26	37	20	6	2
31 029	17	26	49	20	6	2
31 039	21	29	42	16	6.5	3
31 085	20	26	53	17	6	2
31 103	13	18	45	17	4	2
31 157	13	17	50	13	4	2
31 550	21	29	60	16	6.5	3

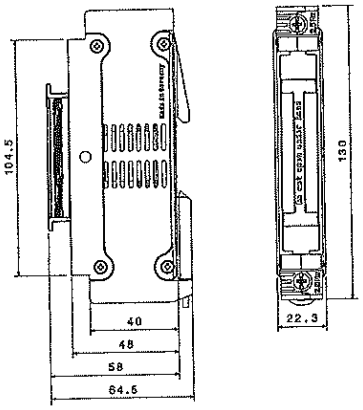




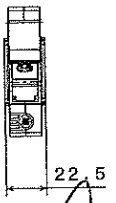
	a	b	Poles	Division
31 012	17	16	3	27
31 014	5	15	1	27
31 024	5	15	1	27
31 056	30	15	3	27
31 057	6	26	1	27
31 101	5	15	1	18
31 102	18	16	3	18
31 309	5	15	1	40
31 310	17	16	3	40
31 311	5	15	1	50
31 312	17	16	3	50
31 548	5	15	1	18
31 549	23	22	3	18
31 561	23	22	2	18

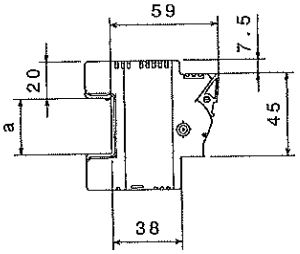


31 555

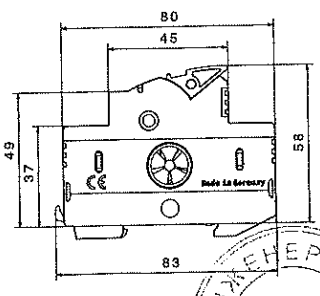


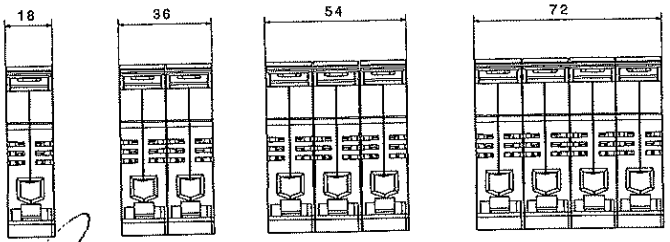
	a
31 570	30
31 572	20

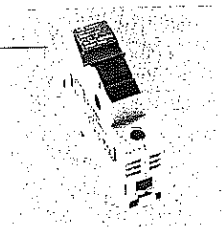




31 110 - 31 114
31 130 - 31 133
31 258
31 273 - 31 277
31 295 - 31 300
31 929 - 31 930
31 971
31 973
31 974







AMBUS®Panel
Holder for cylindrical fuses 10 x 38, 14 x 51, 22 x 58

1, 2- and 3-pole, 1 and 3-pole + N as required
LED: 12 - 72V AC/DC resp. 110 - 690V AC/DC resp. 400 - 1000V DC

Pilot switch:
1 changeover switch 250V AC (5A), 30V DC (4A)
Flat lug 2.8x0.5mm (e.g. DIN 46 245)

Clip-on mounting on EN 60715 mounting rail

Conductor terminals:

Size	Conductor terminals according to IEC		Conductor terminals according to IEC UL / CSA	
10x38	1x Cu 0.75 - 25mm²	f, f+AE	1x AWG 18 - AWG 4	str
	2x Cu 0.75 - 10mm²*	f, f+AE	2x AWG 18 - AWG 6 *	str
Integrated N-pole	1x Cu 1.5 - 10mm²	f, f+AE		
14x51	1x Cu 1.5 - 35mm²	f, f+AE	1x AWG 14 - AWG 2	str
22x58	1x Cu 4 - 50mm²	f, f+AE	1x AWG 10 - AWG 1/0	str

* 2 identical conductors next to each other in the contact position

Overall size		10 x 38 PV	10 x 38	14 x 51	22 x 58
According to standard	IEC/EN	IEC 60269-2	IEC 60947-3, EN 60947-3, VDE 0660 part 107		
	UL/CSA	UL 4248-1, 4248-18	UL 4248-1		
Current type		DC	AC (50/60Hz)/DC	AC (50/60Hz)/DC	AC (50/60Hz)/DC
Maximum rated operating voltage (U_e)	IEC/EN	1000V DC	690V AC	690V AC	690V AC
	UL/CSA	1000V DC	600V AC / DC	600V AC / DC	600V AC / DC
Rated insulation voltage (U_i)	IEC/EN	1000V DC	800V	800V	800V
Rated surge withstand capacity (U_{imp})	IEC/EN	6kV	6kV	6kV	6kV
Rated operating current (I_e)	IEC/EN	30A	32A	50A	100A /
	UL/CSA	30A	30A	50A / 40A	80A
Application category, version 1P, 1P+N, 2P	IEC/EN	-	AC-22B (400V)	AC-22B (400V)	AC-20B (690V)
	UL/CSA	only applicable as fuse holder			
Application category, version 3P, 3P+N	IEC/EN	-	AC-22B (690V)	AC-21B (690V)	AC-20B (690V)
	UL/CSA	only applicable as fuse holder			
Conditional rated short-circuit current (AC) version 1P, 1P+N, 2P	IEC/EN	20kA**	100kA (500V)*	100kA (400V)*	100kA (500V)*
	UL/CSA	33kA	100kA (600V)	100kA (600V)	100kA (600V)
Conditional rated short-circuit current (AC) version 3P, 3P+N	IEC/EN	-	100kA (500V)*	100kA (400V)*	100kA (500V)*
	UL/CSA	-	100kA (600V)	100kA (600V)	100kA (600V)
Allowable power dissipation for each fuse, standard version		-	3W (gG)	5W (gG)	9.5W (gG)
Allowable power dissipation for each fuse, semi-conductor protection version		4.0W (gPV)	4.3W (aR/gR) (10mm², 25A)	6.5W (aR/gR) (25mm², 40A)	11W (aR/gR) (50mm², 80A)

* Type tested with fuses of characteristic gL/gG (IEC 60269-2)
** Type tested with fuses of characteristic gPV (IEC 60269-6)

EC Conformity Declaration

wöhner
Sales/Marketing

Manufacturer:	Wöhner GmbH & Co. KG
Address:	Mönchrödener Str. 10 D - 96472 Rödental
Product designation:	**NH fuse-switch disconnectors** **Switch disconnectors with fuses D0 or 10x38** **Fuse-switch disconnectors for cylindrical fuses**

The designated product(s) conform(s) to the provisions of the following European directive:

Number: 73/23/EWG

Text: Directive of the Council for Adapting the Legislative Provisions of the member states concerning electric equipment for application within determined voltage limits modified by RL 93/68/EWG

For further information about compliance with this directive, see annex.

Attachment of the CE-marking: 96

Issuer: **Wöhner GmbH & Co. KG**

Place, date: Rödental, 15.05.2003

Legally binding signature:

На основание чл. 2
от ЗЗЛД

ВЯРНО С ОРИГИНАЛА

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

The annex is part of this declaration.
This declaration certifies the conformance with the mentioned directives, but it does not include any assurances of definite properties.
Please pay special attention to the safety regulations of the delivered product documentation.

Декларация за съответствие

Производител: WÖHNER GmbH и Co KG
Адрес: ул. Mönchrödener 10
D-96472 Rödental

Обозначение на продукта: NH предпазител-разединител
Разединител със предпазители D0 или 10x38
Разединител с цилиндрични предпазители

Конструираният продукт(и) отговаря на разпоредбите на следната европейска директива:

Номер: 73/23/EWG

Текст: Директива на Съвета за адаптиране на законовите разпоредби на държавите-членки относно електрическото оборудване за прилагане в определени граници на напрежение модифициран от RL 93/68/EWG

За допълнителна информация съгласно тази директива , виж анекс.

Прикрепване на маркировката "CE" 96

Емитент: **WÖHNER GmbH и Co KG**

Място, дата: Rödental, 15.05.2003

Правно обвързващ подпис: На основание чл. 2 от ЗЗЛД

А

ВЯРНО С ОРИГИНАЛА

IEC IECEE CB SCHEME

Ref. Certif. No.

DE1-49452

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

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

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product Produit	Fuse-switch-disconnector
Name and address of the applicant Nom et adresse du demandeur	Wöhner GmbH & Co. KG Elektrotechnische Systeme Mönchrödener Straße 10, 96472 Rödental GERMANY
Name and address of the manufacturer Nom et adresse du fabricant	Wöhner GmbH & Co. KG Elektrotechnische Systeme Mönchrödener Straße 10, 96472 Rödental GERMANY
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	Wöhner GmbH & Co. KG Elektrotechnische Systeme Mönchrödener Straße 10, 96472 Rödental GERMANY ☐ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	Utilization category: AC-21B, AC-22B Rated voltage: 400 V, 500 V, 690 V a.c. Rated current: 10 A, 25 A, 32 A
Trademark (if any) Marque de fabrique (si elle existe)	wöhner
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	
Model / Type Ref. Ref. De type	AES 10x38
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la 2ème page)	Numbers of poles: 1/2/3-pol. and 1/3-pol.+Neutral ☐ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	**PUBLICATION** **EDITION** IEC 60947-1(ed.5);am1:2010-12 IEC 60947-3(ed.3)
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	249800-4402-0705/152633

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

VDE Prüf- und Zertifizierungsinstitut GmbH
VDE *Testing and Certification Institute*
Zertifizierungsstelle / *Certification*

Date: 2011-12-13

Signature:

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

На основание чл. 2
от ЗЗЛД

Списък на отделните изпитвания на български език

Изследван образец:

Разединител с цилиндрични предпазители н.н. 32A ,10x38 , еднополюсен и триполюсен, тип AES 10x38

Производител:

WÖHNER GmbH, Германия

Изпълнени тестове съгласно IEC/EN 60947-3

1) Маркировка на апаратурата
2) Инструкция за монтаж и есплоатация
3) Материали и конструкция
4) Устойчивост на топлина и огън
5) Минимални разстояния
6) Задвижващо устройство
7) Изолация
8) Посока на задвижване
9) Индикация на позицията на контакта
10) Допълнителни изисквания за безопасност
11) Допълнителни конструктивни изисквания
12) Клеми , проверка за мех. якост
13) Възможност за присъединяване
14) Идентификация и маркировка на клемите

Тест глава I: *Общи експлоатационни характеристики*

1) Покачване на температурата
2) Проверка на диелектричните свойства
3) Включваща и изключваща способност
4) Поведение на апаратурата по време включване и изключване
5) Състояние след теста за включване и изключване
6) Ток на утечка
7) Зависими и независими ръчни операции
8) Сила на задвижващия механизъм

Тест глава II: *Способност за оперативна дейност*

1) Тест –оперативна ефективност

2) Включване и изключване без товар

3) Включване и изключване с товар

4) Поведение на апаратурата по време тест за оперативна ефективност

5) Състояние на апаратурата след теста за включвателна и изключвателна способност.

6) Ток на утечка

7) Проверка ноа диелектричните характеристики

8) Тест -повишаване на температурата

Тест глава III: *Не се използва*

Тест глава IV: *Условен ток на късо съединение*

1) Защита с предпазител от късо съединение

2) Поведение на апарата по време теста

3) Състояние на апарата след тестове на включване и изключване

4) Диелектрични свойства

5) Ток на утечка

6) Проверка на температурата

Test Report issued under the responsibility of:

VDE

TEST REPORT
IEC 60947-3
Low-voltage switchgear and controlgear
Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

Report Reference No. ..... :	249800-4402-0705/152633
Date of issue..... :	2011-12-12
Total number of pages ..... :	116
CB Testing Laboratory..... :	**VDE Prüf- und Zertifizierungsinstitut GmbH** VDE Testing and Certification Institute
Address ..... :	Merianstraße 28 · 63069 Offenbach , Germany
Applicant's name..... :	Wöhner GmbH & Co. KG Elektrotechnische Systeme
Address ..... :	Mönchrödener Straße 10, 96472 Rödental, Germany
Test specification:	
Standard..... :	IEC 60947-3: 3rd Edition (2008) in conjunction with IEC 60947-1: 5th Edition (2007)
Test procedure ..... :	CB
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IEC60947_3B
Test Report Form(s) Originator..... :	OVE
Master TRF ..... :	Dated 2009-08

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

Test item description ..... :	Fuse-switch-disconnector
Trade Mark..... :	**wöhner**
Manufacturer ..... :	Wöhner GmbH & Co. KG Elektrotechnische Systeme
Model/Type reference..... :	AES 10x38
Ratings ..... :	See page 6 and 7

ВЯРНО С ОРИГИНАЛА

ИНЖЕНЕРИНГ ПЛОВДИВ ЕАД

Testing procedure and testing location:	
☒ **CB Testing Laboratory:**	**VDE Prüf- und Zertifizierungsinstitut GmbH** **VDE** Testing and Certification Institute
Testing location/ address ..... :	Merianstraße 28 , 63069 Offenbach , Germany
☒ **Associated CB Test Laboratory:**	**IPH Institut** "Prüffeld für elektrische Hochleistungstechnik" GmbH
Testing location/ address ..... :	Landsberger Allee 378 A , 12681 Berlin ,
Tested by (name + signature) ..... :	На основание чл. 2 от ЗЗЛД
Approved by (+ signature) ..... :	
☐ Testing procedure: TMP	
Testing location/ address ..... :	
Tested by (name + signature) ..... :	
Approved by (+ signature) ..... :	
☐ Testing procedure: WMT	
Testing location/ address ..... :	
Tested by (name + signature) ..... :	
Witnessed by (+ signature) ..... :	
Approved by (+ signature) ..... :	
☐ Testing procedure: SMT	
Testing location/ address ..... :	
Tested by (name + signature) ..... :	
Approved by (+ signature) ..... :	
Supervised by (+ signature) ..... :	
☐ Testing procedure: RMT	
Testing location/ address ..... :	
Tested by (name + signature) ..... :	
Approved by (+ signature) ..... :	
Supervised by (+ signature) ..... :	

Summary of testing:

The tests are carried-out according to IEC 60947-1 (ed.5);am1:2010-12 and IEC 60947-3 (ed.3).

Tests performed (name of test and test clause):	**Testing location:**
Clause 7.1 (Construction)	**VDE Testing and Certification Institute**
Test sequence I:	**IPH Institut**
Sample No.1: AC-21B, 500 V, 25 A, 1-pole	see page 16 - 20
Sample No.2: AC-21B, 690 V, 10 A, 1-pole	see page 21 - 25
Sample No.3: AC-22B, 400 V, 32 A, 1-pole	see page 26 - 30
Sample No.4: AC-22B, 400 V, 32 A, 2-pole	see page 31 - 35
Sample No.5: AC-22B, 500 V, 25 A, 2-pole	see page 36 - 40
Sample No.6: AC-22B, 690 V, 10 A, 2-pole	see page 41 - 45
Sample No.7: AC-22B, 690 V, 32 A, 3-pole+N	see page 46 - 50
Test sequence II:	**IPH Institut**
Sample No.8: AC-21B, 500 V, 25 A, 1-pole	see page 51 - 52
Sample No.9: AC-21B, 690 V, 10 A, 1-pole	see page 53 - 54
Sample No.10: AC-22B, 400 V, 32 A, 1-pole	see page 55 - 56
Sample No.11: AC-22B, 400 V, 32 A, 2-pole	see page 57 - 58
Sample No.12: AC-22B, 500 V, 25 A, 2-pole	see page 59 - 60
Sample No.13: AC-22B, 690 V, 10 A, 2-pole	see page 61 - 62
Sample No.14: AC-22B, 690 V, 32 A, 3-pole+N	see page 63 - 64
Test sequence IV:	**IPH Institut**
Sample No.15: 400 V a.c., 100 kA, 1-pole (with fuse-link 32 A / 400 V)	see page 68 - 69
Sample No.16: 400 V a.c., 100 kA, 1-pole+N (with fuse-link 32 A / 400 V)	see page 70 – 71
Sample No.17: 400 V a.c., 100 kA, 2-pole (with fuse-link 32 A / 400 V)	see page 72 - 73
Sample No.18: 400 V a.c., 100 kA, 3-pole+N (with fuse-link 32 A / 400 V)	see page 74 - 75

Summary of testing: (Continuation)

The tests are carried-out according to IEC 60947-1 (ed.5);am1:2010-12 and IEC 60947-3 (ed.3).

Tests performed (name of test and test clause):	**Testing location:**
Test sequence IV:	**IPH Institut**
Sample No.19: 500 V a.c., 100 kA, 1-pole (with fuse-link 25 A / 500 V)	see page 76 - 77
Sample No.20: 500 V a.c., 100 kA, 1-pole+N (with fuse-link 25 A / 500 V)	see page 78 - 79
Sample No.21: 500 V a.c., 100 kA, 2-pole (with fuse-link 25 A / 500 V)	see page 80 - 81
Sample No.22: 500 V a.c., 100 kA, 3-pole+N (with fuse-link 25 A / 500 V)	see page 82 - 83
Sample No.23: 690 V a.c., 50 kA, 1-pole (with fuse-link 10 A / 690 V)	see page 84 - 85
Sample No.24: 690 V a.c., 50 kA, 1-pole+N (with fuse-link 10 A / 690 V)	see page 86 - 87
Sample No.25: 690 V a.c., 50 kA, 2-pole (with fuse-link 10 A / 690 V)	see page 88 - 89
Sample No.26: 690 V a.c., 50 kA, 3-pole+N (with fuse-link 32 A / 400 V)	see page 90 - 91
Test sequence V:	**IPH Institut**
Sample No.27: 690 V, 32 A, 1-pole (with fuse-link 32 A / 400 V)	see page 92 - 93
Sample No.28: 690 V, 32 A, 2-pole (with fuse-link 32 A / 400 V)	see page 94 - 95
Sample No.29: 690 V, 32 A, 3-pole+N (with fuse-link 32 A / 400 V)	see page 96 - 97

Summary of compliance with National Differences:

Not applicable

Copy of marking plate

Front printing: (for example a single pole device)

wöhner

AES10x38
32A 10x38
31 110 1P

Side printing:

IEC 60947-3 AC-22B 32A 400V 50/60Hz Ui:AC800V

c UL us
30A 600V
Do not operate under load

gG	32A	6 □	3.0W
aM	32A	6 □	1.2W
aR/gR	consult		

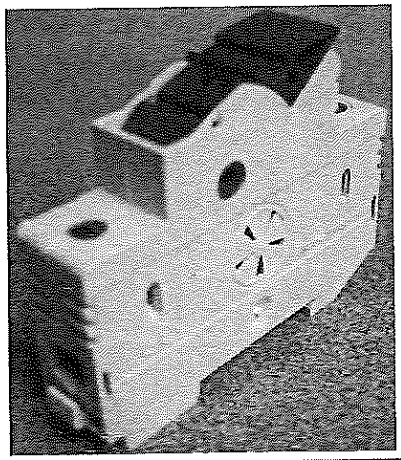
IEC 60269 690V

18..4AWG
0.75..25mm²
Cu only,
75°C wire

PZ2 2.5Nm
22lb-in

When two conductors per terminal are used, only stranded wires of the same size within the range of 18-6AWG, may be used

Picture of the fuse-switch-disconnector: (for example a single pole device)



Test item particulars .....:

- method of operation .....: Dependent manual operation
- suitability for isolation .....: Suitable / ~~not suitable~~
- degree of protection .....: IP20
- number of poles.....: 1; 2; 3; 1+N; 3+N
- kind of current.....: a.c.
- number of positions of the main contacts.....: 2 (open and closed)

Rated and limiting values, main circuit:

- rated operational voltage Ue (V) .....: 400 V a.c.
500 V a.c.
690 V a.c.
- rated insulation voltage Ui (V) .....: 800 V
- rated impulse withstand voltage Uimp (kV) .....: 6 kV
- conventional free air thermal current Ith (A) .....: 32 A
- conventional enclosed thermal current Ithe (A).....: —
- rated operational current Ie (A) .....: See utilization category
- rated uninterrupted current Iu (A).....: See utilization category
- rated frequency (Hz).....: 50/60 Hz
- utilization category.....:

	Ue [V]	Ie [A]	Number of poles
AC-21B	500	25 **)	1; 1+N
	690	10 *)	1; 1+N
AC-22B	400	32 **)	1; 2; 3; 1+N; 3+N
	500	25 **)	2; 3; 3+N
		32 *)	3; 3+N
	690	10 *)	2
		32 *)	3; 3+N

*) Corresponding short circuit current: 50 kA
**) Corresponding short circuit current: 100 kA

Short-circuit characteristic:

- rated short-time withstand current Icw (kA).....: —
- rated short-time making capacity Icm (kA).....: —
- rated conditional short-circuit current.....: 50 kA; 100 kA (See utilization category)
- Control circuits.....: —
- Auxiliary circuits.....: —
- Relays and releases.....: —

Co-ordination of short-circuit protective devices:	
- kind of protective device.....:	Fuse-links with cylindrical contact caps for fuse system F (size 10,3 x 38) Rated currents: 10 A (gR), 25 A (gG) and 32 A (gG)
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 .....:	2011-06
Date (s) of performance of tests .....:	2011-06 up to 2011-11

General remarks:

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 testing laboratory.

"(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.

General product information:

The fuse-switch-disconnectors of type AES10x38 are available for DIN-rail mounting with cable connection on the line and load side.

The cable connection is possible by screw terminals (box terminal connection).
The box terminal connection is suitable for cable cross-sections between 0,75mm² and 25mm².

Upon the tests of the making and breaking capacities and the performance under short-circuit conditions the distances between the metallic screen and the test items were 0 mm to the sides and 0 mm to the top.

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict

5.2	MARKING		P
	Marking on equipment itself or on nameplate or nameplates attached to the equipment and legible from the front after mounting		—
	- indication of the open and closed position		P
	- suitability for isolation		P
	- disconnectors AC-20 and DC-20 only: marked "Do not operate under load"		N/A
	Marking on equipment not needed to be visible after mounting:		—
	- manufacturer's name or trademark	**wöhner**	P
	- type designation or serial number	AES 10x38	P
	- rated operational currents	10 A, 25 A, 32 A	P
	- rated operational voltage	400 V, 500 V, 690 V a.c.	P
	- utilization category	See page 6	P
	- rated frequency	50/60 Hz	P
	- manufacturer's claim for compliance with IEC 60947-3		P
	- degree of protection	IP20	P
	Marking on fuse-combination units:		—
	- fuse type	Fuse System F (size 10,3x38)	P
	- maximum rated current	32 A	P
	- power loss of the fuse-link	< 3 W	P
	Identification of terminals:		—
	- line terminals, unless connection is immaterial	Not labelled, free line and load connection choice	P
	- load terminals, unless connection is immaterial		P
	- neutral pole terminal		N/A
	- protective earth terminal		N/A
	Data in the manufacturer's published information:		—
	- rated insulation voltage	800 V	P
	- rated impulse withstand voltage for equipment suitable for isolation or when determined	6 kV	P
	- pollution degree, if different from 3	3	P
	- rated duty	uninterrupted	P
	- rated short-time withstand current and duration		N/A
	- rated short-circuit making capacity		N/A

ВЕРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
	- rated conditional short-circuit current	50 kA, 100 kA	P
5.3	Instructions for installation, operation and maintenance		P
6	Normal service, mounting and transport conditions		P
7.1	CONSTRUCTIONAL AND PERFORMANCE REQUIREMENTS		P
7.1.2	Materials		P
7.1.2.2	Resistance to abnormal heat and fire		P
	Test performed on ..... :	- ~~the equipment~~ - sections taken from the equipment - ~~samples of identical material~~	P
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11		—
	Parts made of insulating material necessary to retain current-carrying parts in position: test temperature 960 °C		P
	No visible flame and no sustained glowing		P
	Flames and glowing extinguish within 30 s		P
	No ignition of the tissue paper		P
	Parts of insulating material not necessary to retain current-carrying parts in position, even though in contact with them: test temperature 650 °C		P
	No visible flame and no sustained glowing		P
	Flames and glowing extinguish within 30 s		P
	No ignition of the tissue paper		P
7.1.3 of Part 1	Current-carrying parts and their connection		P
7.1.4	Clearances ..... :	see appended table 7.1.4 on page 103	P
	Creepage distances ..... :	see appended table 7.1.4 on page 103	P
	Pollution degree ..... :	3	—
	Comparative tracking index (V) ..... :	CTI 600 (housing) CTI 575 (actuator)	—
	Material group ..... :	II	—

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.5 of Part 1	Actuator		P
7.1.5.1	Insulation		—
	Actuator insulated from live parts for		—
	- rated insulation voltage	800 V	P
	- rated impulse withstand voltage	6 kV	P
	Actuator made of metal		—
	- connected to a protective conductor or provided with an additional insulation		P
	Actuator made of or covered by insulating material :		—
	- internal metal parts, which might become accessible in the event of an insulation failure, are also insulated from live parts for the rated insulation voltage		P
7.1.5.2	Direction of movement		P
	The direction of operation for actuators shall where applicable conform to IEC 60447		P
	There is no doubt of the "I" and "O" position and the direction of operation		P
7.1.6 of Part 1	Indication of contact position		P
7.1.6.1	Indicating means		N/A
7.1.6.2	Indication by the actuator		P
7.1.7	Additional safety requirements for equipment suitable for isolation		P
7.1.7.1	Additional constructional requirements:		P
	- marking according to 5.2.1b		P
	- indication of the position of the contacts		N/A
	- construction of the actuating mechanism		P
	- minimum clearances across open contacts (see Table 13, Part 1) (mm) .....:	2 mm	—
	- measured clearances (mm) .....:	> 5,5 mm	P
	- test Uimp across gap (kV) .....:	9,8 kV	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.7.2	Supplementary requirements for equipment with provision for electrical interlocking with contactors or circuit-breakers:		N/A
	Auxiliary switch is rated according to IEC 60947-5-1 (unless the equipment is rated AC-23)		N/A
	Time interval between opening of the contacts of the auxiliary contact and the contacts of the main poles: ≥20 ms ..... :		—
	Measured time interval (ms) ..... :		N/A
	During the closing operation the contacts of the auxiliary switch closes after or simultaneously with the contacts of the main poles		N/A
7.1.7.3	Supplementary requirements for equipment provided with means for padlocking the open position:		N/A
	The locking means is so designed that it cannot be removed with the appropriate padlock(s) installed		N/A
	Test force F applied to the actuator in an attempt to operate to the closed position (N) ..... :		—
	Rated impulse withstand voltage (kV) ..... :		—
	Test Uimp on open main contacts at the test force		N/A
7.1.8 of Part 1	Terminals		P
7.1.8.1	All parts of terminals which maintain contact and carry current are of metal having adequate mechanical strength	(see 8.2.4 below)	P
	Terminal connections are such that necessary contact pressure is maintained	(see 8.2.4 below)	P
	Terminals are so constructed that the conductor is clamped between suitable surfaces without damage to the conductor and terminal	(see 8.2.4 below)	P
	Terminals do not allow the conductor to be displaced or to be displaced themselves in a manner detrimental to the operator of equipment and the insulation voltage is not reduced below the rated value	(see 8.2.4 below)	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.4	Mechanical properties of terminals (box terminal connection)		P
	Mechanical strength of terminals		P
	Maximum cross-sectional area of conductor (mm²) .....:		—
	Diameter of thread (mm) .....:	Screw M5	—
	Torque (Nm) .....:	2,75 Nm (manufacturer indicates: 2 – 2,5 Nm)	—
	5 times on 2 separate clamping units		P
	Testing for damage to and accidental loosening of conductor (flexion test)		P
	Conductor of the smallest cross-sectional area (mm²) .....:	0,75 mm²	—
	Number of conductor of the smallest cross section :	1	—
	Diameter of bushing hole (mm) .....:	6,5 mm	—
	Height between the equipment and the platen .....:	260 mm	—
	Mass at the conductor(s) (kg) .....:	0,4 kg	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. .....:	30 N	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Conductor of the largest cross-sectional area (mm²) .....:	25 mm²	—
	Number of conductor of the largest cross section .:	1	—
	Diameter of bushing hole (mm) .....:	13 mm	—
	Height between the equipment and the platen .....:	300 mm	—
	Mass at the conductor(s) (kg) .....:	4,5 kg	—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		P
	Pull-out test		P
	Force (N), applied for 1 min. .....:	135 N	—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Conductor of the largest and smallest cross-sectional area (mm²) .....:		—
	Number of conductor of the smallest cross section, number of conductor of the largest cross section ..:		—
	Diameter of bushing hole (mm) .....:		—
	Height between the equipment and the platen .....:		—
	Mass at the conductor(s) (kg) .....:		—
	135 continuous revolutions: the conductor neither slips out of the terminal nor breaks near the clamping unit		N/A
	Pull-out test		N/A
	Force (N), applied for 1 min. .....:		—
	During the test, the conductor neither slips out of the terminal nor breaks near the clamping unit		N/A
7.1.8.2	Connection capacity		P
	Type of conductors .....:	Rigid, stranded or flexible	—
	Minimum cross-sectional area of conductor (mm²) :	0,75 mm²	—
	Maximum cross-sectional area of conductor (mm²) .....:	25 mm²	—
	Number of conductors simultaneously connectable to the terminal .....:		—
7.1.8.3	Connection		P
	Terminals for connection to external conductors are readily accessible during installation		P
	Clamping screws and nuts do not serve to fix any other component		P
7.1.8.4	Terminal identification and marking		P
	Terminal intended exclusively for the neutral conductor	Only if applicable	P
	Protective earth terminal		N/A
	Other terminals		P

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Clause	Requirement + Test	Result - Remark	Verdict
7.1.9	Additional requirements for equipment provided with a neutral pole		P
	Equipment provided with a pole intended for the connection of neutral, this pole shall be clearly marked by the letter "N"		P
	The switched neutral pole does not break before and does not make after the other poles except		N/A
	- a pole having the appropriate short-circuit breaking and making capacity is used as neutral pole, all poles may operate together	The connection is given by a dummy (piece of copper), which is inside the actuator.	P
	Conventional thermal current of neutral pole	32 A	P
7.1.10	Provisions for protective earthing		N/A
7.1.10.1	The exposed conductive parts are electrically interconnected and connected to a protective earth terminal		N/A
7.1.10.2	Protective earth terminal is readily accessible		N/A
	Protective earth terminal is suitably protected against corrosion		N/A
	Electrical continuity between the exposed conductive parts of the protective earth terminal and the metal sheathing of connecting conductors		N/A
	Protective earth terminal has no other functions		N/A
7.1.10.3	Protective earth terminal marking and identification		N/A
7.1.11	Enclosure for equipment		N/A
7.1.11.1	Design		N/A
	When the enclosure is opened, all parts requiring access for installation and maintenance are readily accessible		N/A
	Sufficient space is provided inside the enclosure		N/A
	The fixed parts of a metal enclosure are electrically connected to the other exposed conductive parts of the equipment and connected to a terminal which enables them to be earthed or connected to a protective conductor		N/A
	Under no circumstances a removable metal part of the enclosure is insulated from the part carrying the earth terminal when the removable part is in place		N/A
	The removable parts of the enclosure are firmly secured to the fixed parts by a device such that they cannot be accidentally loosened or detached owing to the effects of operation of the equipment or vibrations		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	When an enclosure is so designed as to allow the covers to be opened without the use of tools, means is provided to prevent loss of the fastening devices		N/A
	If the enclosure is used for mounting push-buttons, it is not possible to remove the buttons from the outside of the enclosure		N/A
7.1.11.2	Insulation		N/A
	If, in order to prevent accidental contact between a metallic enclosure and live parts, the enclosure is partly or completely lined with insulating material, then this lining is securely fixed to the enclosure		N/A
7.1.12	Degree of protection of enclosed equipment		N/A
	Degree of protection .....:	IP	N/A
7.1.13	Conduit pull-out, torque and bending with metallic conduits		N/A
	Withstand the stress occurring during its installation .....:	IP	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 1: AC-21B, 500 V, 25 A, 1-pole)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C ..... :	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) ..... :		—
	material of enclosure ..... :		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) ..... :	25 A	—
	- cable/busbar cross-section (mm²) / length (mm) .. :	4 mm² cables / 1000 mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G25	—
	- rated current (A) ..... :	25A (gG)	—
	- power loss (W) ..... :	2,6 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page 103	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :		—
	- cable cross-section (mm²) ..... :		—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) ..... :	6 kV	—
	- test Uimp main circuits (kV) ..... :	7,3 kV	P
	- test Uimp auxiliary circuits (kV) ..... :		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) ..... :	9,8 kV	P
	Power-frequency withstand voltage (V) ..... :	800 V	—
	- main circuits, test voltage for 5 sec. (V) ..... :	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	550 V (tested with 759 V)	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-21B	—
	- rated operational voltage Ue (V) ..... :	500 V	—
	- rated operational current Ie (A) or power (kW) .... :	25 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G25	—
	- rated current (A) ..... :	25 A (gG)	—
	- power loss (W) ..... :	2,6 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue ..... (V):	L1: 525 V L2: — L3: —	—
	- test current, I = ... 1,5 x Ie (A):	L1: 38 A L2: — L3: —	—
	- power factor/ ~~time constant~~ ..... :	0,91	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	70 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		N/A
	- oscillatory frequency (kHz) ..... :		—
	- measured oscillatory frequency (kHz) ..... :	L1: L2: L3:	N/A
	- factor γ ..... :	L1: L2: L3:	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	13,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 103	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	10,2 N	—
	- test force with blocked main contacts (N) .....:	50 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 2: AC-21B, 690 V, 10 A, 1-pole)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C ..... :	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) ..... :		—
	material of enclosure ..... :		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) ..... :	10 A	—
	- cable/busbar cross-section (mm²) / length (mm) .. :	1,5 mm² cables / 1000mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	SIBA	—
	- manufacturer's model or type reference ..... :	50 179 06.10	—
	- rated current (A) ..... :	10 A (gR)	—
	- power loss (W) ..... :	2,3 W	—
	- rated breaking capacity (kA) ..... :	200 kA	—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page 104	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :		—
	- cable cross-section (mm²) ..... :		—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) ..... :	6 kV	—
	- test Uimp main circuits (kV) ..... :	7,3 kV	P
	- test Uimp auxiliary circuits (kV) ..... :		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) ..... :	9,8 kV	P
	Power-frequency withstand voltage (V) ..... :	800 V	—
	- main circuits, test voltage for 5 sec. (V) ..... :	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	759 V	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-21B	—
	- rated operational voltage Ue (V) ..... :	690 V	—
	- rated operational current Ie (A) or power (kW) .... :	10 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	SIBA	—
	- manufacturer's model or type reference ..... :	50 179 06.10	—
	- rated current (A) ..... :	10 A (gR)	—
	- power loss (W) ..... :	2,3 W	—
	- rated breaking capacity (kA) ..... :	200 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue ..... (V):	L1: 725 V L2: — L3: —	—
	- test current, I = ... 1,5 x Ie (A):	L1: 15,3 A L2: — L3: —	—
	- power factor/ ~~time constant~~ ..... :	0,95	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	70 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		N/A
	- oscillatory frequency (kHz) ..... :		—
	- measured oscillatory frequency (kHz) ..... :	L1: L2: L3:	N/A
	- factor γ ..... :	L1: L2: L3:	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	17,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 104	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	11 N	—
	- test force with blocked main contacts (N) .....:	50 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 3: AC-22B, 400 V, 32 A, 1-pole)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C .....:	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) .....:		—
	material of enclosure .....:		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) .....:	32 A	—
	- cable/busbar cross-section (mm²) / length (mm)..:	6 mm² cables / 1000mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Measured temperature-rise .....:	see appended table 8.3.3.1 on page 104	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:		—
	- cable cross-section (mm²).....:		—
	Measured temperature-rise .....:	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) .....:	6 kV	—
	- test Uimp main circuits (kV) .....:	7,3 kV	P
	- test Uimp auxiliary circuits (kV) .....:		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	9,8 kV	P
	Power-frequency withstand voltage (V) .....:	800 V	—
	- main circuits, test voltage for 5 sec. (V) .....:	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	440 V (tested with 759 V)	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-22B	—
	- rated operational voltage Ue (V) ..... :	400 V	—
	- rated operational current Ie (A) or power (kW) .... :	32 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue ..... (V):	L1: 420 V L2: — L3: —	—
	- test current, I = ... 3 x Ie (A):	L1: 98 A L2: — L3: —	—
	- power factor/ ~~time constant~~ ..... :	0,66	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	90 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	41,29 kHz	—
	- measured oscillatory frequency (kHz) ..... :	L1: 40,5 kHz L2: — L3: —	P
	- factor γ ..... :	L1: 1,1 L2: — L3: —	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	8,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 105	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	10,4 N	—
	- test force with blocked main contacts (N) .....:	50 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 4: AC-22B, 400 V, 32 A, 2-poles)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C ..... :	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) ..... :		—
	material of enclosure ..... :		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) ..... :	32 A	—
	- cable/busbar cross-section (mm²) / length (mm) .. :	6 mm² cables / 1000mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page 105	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :		—
	- cable cross-section (mm²) ..... :		—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) ..... :	6 kV	—
	- test Uimp main circuits (kV) ..... :	7,3 kV	P
	- test Uimp auxiliary circuits (kV) ..... :		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) ..... :	9,8 kV	P
	Power-frequency withstand voltage (V) ..... :	800 V	—
	- main circuits, test voltage for 5 sec. (V) ..... :	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	440 V (tested with 759 V)	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-22B	—
	- rated operational voltage Ue (V) ..... :	400 V	—
	- rated operational current Ie (A) or power (kW) .... :	32 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		P
	- test voltage, U = 1,05 Ue ..... (V):	L1: 420 V (242,5 V x √3) L2: 420 V (242,5 V x √3) L3: —	—
	- test current, I = ... 3 x Ie (A):	L1: 98 A L2: 98 A L3: —	—
	- power factor/ ~~time constant~~ ..... :	0,66	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	70 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	41,29 kHz	—
	- measured oscillatory frequency (kHz) ..... :	L1: 40,5 kHz L2: 40,5 kHz L3: —	P
	- factor γ ..... :	L1: 1,1 L2: 1,1 L3: —	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	17,8 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 105	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	22 N	—
	- test force with blocked main contacts (N) .....:	66 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 5: AC-22B, 500 V, 25 A, 2-pole)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C .....:	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) .....:		—
	material of enclosure .....:		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) .....:	25 A	—
	- cable/busbar cross-section (mm²) / length (mm)..:	4 mm² cables / 1000 mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Measured temperature-rise .....:	see appended table 8.3.3.1 on page 106	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) .....:		—
	- cable cross-section (mm²) .....:		—
	Measured temperature-rise .....:	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) .....:	6 kV	—
	- test Uimp main circuits (kV) .....:	7,3 kV	P
	- test Uimp auxiliary circuits (kV) .....:		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) .....:	9,8 kV	P
	Power-frequency withstand voltage (V) .....:	800 V	—
	- main circuits, test voltage for 5 sec. (V) .....:	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	550 V (tested with 759 V)	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-22B	—
	- rated operational voltage Ue (V) ..... :	500 V	—
	- rated operational current Ie (A) or power (kW) .... :	25 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G25	—
	- rated current (A) ..... :	25 A	—
	- power loss (W) ..... :	2,6 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		
	- test voltage, U = 1,05 Ue ..... (V):	L1: 525 V (303 V x √3) L2: 525 V (303 V x √3) L3: —	—
	- test current, I = ... 3 x Ie (A):	L1: 78 A L2: 78 A L3: —	—
	- power factor/ ~~time constant~~ ..... :	0,68	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	70 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	32,88 kHz	—
	- measured oscillatory frequency (kHz) ..... :	L1: 32,2 kHz L2: 32,2 kHz L3: —	P
	- factor γ ..... :	L1: 1,1 L2: 1,1 L3: —	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	20,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 106	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	22,6 N	—
	- test force with blocked main contacts (N) .....:	67,8 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 6: AC-22B, 690 V, 10 A, 2-pole)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C ..... :	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) ..... :		—
	material of enclosure ..... :		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) ..... :	10 A	—
	- cable/busbar cross-section (mm²) / length (mm) .. :	1,5 mm² cables / 1000mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	SIBA	—
	- manufacturer's model or type reference ..... :	50 179 06.10	—
	- rated current (A) ..... :	10 A (gR)	—
	- power loss (W) ..... :	2,3 W	—
	- rated breaking capacity (kA) ..... :	200 kA	—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page 106	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :		—
	- cable cross-section (mm²) ..... :		—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) ..... :	6 kV	—
	- test Uimp main circuits (kV) ..... :	7,3 kV	P
	- test Uimp auxiliary circuits (kV) ..... :		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) ..... :	9,8 kV	P
	Power-frequency withstand voltage (V) ..... :	800 V	—
	- main circuits, test voltage for 5 sec. (V) ..... :	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	759 V	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-22B	—
	- rated operational voltage Ue (V) ..... :	690 V	—
	- rated operational current Ie (A) or power (kW) .... :	10 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	SIBA	—
	- manufacturer's model or type reference ..... :	50 179 06.10	—
	- rated current (A) ..... :	10 A (gR)	—
	- power loss (W) ..... :	2,3 W	—
	- rated breaking capacity (kA) ..... :	200 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		
	- test voltage, U = 1,05 Ue ..... (V):	L1: 725 V (418,5 V x √3) L2: 725 V (418,5 V x √3) L3: —	—
	- test current, I = ... 3x Ie (A):	L1: 31 A L2: 31 A L3: —	—
	- power factor/ ~~time constant~~ ..... :	0,65	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	80 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	21,15 kHz	—
	- measured oscillatory frequency (kHz) ..... :	L1: 21,0 kHz L2: 21,0 kHz L3:	P
	- factor γ ..... :	L1: 1,1 L2: 1,1 L3:	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	22,5 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 107	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	24,4 N	—
	- test force with blocked main contacts (N) .....:	73,2 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3	TEST SEQUENCE I: GENERAL PERFORMANCE CHARACTERISTICS (Sample No. 7: AC-22B, 690 V, 32 A, 3-pole+N)		P
8.3.3.1	Temperature-rise		P
	ambient temperature 10-40 °C ..... :	22,7 °C	—
	test enclosure W x H x D (mm x mm x mm) ..... :		—
	material of enclosure ..... :		—
	Main circuits, test conditions:		—
	- rated operational current Ie (A) ..... :	32 A	—
	- cable/busbar cross-section (mm²) / length (mm) .. :	6 mm² cables / 1000mm long	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page 107	P
	Auxiliary circuits, test conditions:		N/A
	- rated operation current (A) ..... :		—
	- cable cross-section (mm²) ..... :		—
	Measured temperature-rise ..... :	see appended table 8.3.3.1 on page __	N/A
8.3.3.2	Test of dielectric properties		P
	Rated impulse withstand voltage (kV) ..... :	6 kV	—
	- test Uimp main circuits (kV) ..... :	7,3 kV	P
	- test Uimp auxiliary circuits (kV) ..... :		N/A
	- test Uimp on open main contacts (equipment suitable for isolation) (kV) ..... :	9,8 kV	P
	Power-frequency withstand voltage (V) ..... :	800 V	—
	- main circuits, test voltage for 5 sec. (V) ..... :	2000 V	P
	- control and auxiliary circuits, test voltage for 5 sec. (V) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Devices, which have been disconnected for the power-frequency withstand voltage test		N/A
	Equipment suitable for isolation, leakage current not exceed 0,5 mA		—
	Test voltage 1,1 Ue (V) ..... :	759 V	—
	Measured leakage current (mA) ..... :	0,001 mA	P
8.3.3.3	Making and breaking capacity		P
	- utilization category ..... :	AC-22B	—
	- rated operational voltage Ue (V) ..... :	690 V	—
	- rated operational current Ie (A) or power (kW) .... :	32 A	—
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	Conditions for make/break operations or make operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—
	Conditions for break operation, AC-23A and AC-23B only:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor ..... :	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Conditions for make/break operations, other than AC-23A/B:		
	- test voltage, U = 1,05 Ue ..... (V):	L1: 725 V (418,5 V x √3) L2: 725 V (418,5 V x √3) L3: 725 V (418,5 V x √3)	—
	- test current, I = ... 3 x Ie (A):	L1: 99 A L2: 98 A L3: 100 A	—
	- power factor/ ~~time constant~~ ..... :	0,63	—
	Number of make/break or make and break operations ..... :	5	P
	- recovery voltage duration (≥ 50 ms)	> 50 ms	P
	- current duration (ms) ..... :	70 ms	—
	- time interval between operations ..... :	30 s	P
	Characteristic of transient recovery voltage for AC-22 and AC-23 only		P
	- oscillatory frequency (kHz) ..... :	26,69 kHz	—
	- measured oscillatory frequency (kHz) ..... :	L1: 27,5 kHz L2: 27,5 kHz L3: 27,5 kHz	P
	- factor γ ..... :	L1: 1,1 L2: 1,1 L3: 1,1	P
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	46,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.4	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.3.5	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:	< 2 mA	P
8.3.3.6	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.3.6 on page 107	P
8.3.3.7	Strength of actuator mechanism		P
8.2.5	Verification of the strength of actuator mechanism and position indicating device		
	- actuator type (fig.) .....:	figure 1b (one-finger operated)	—
8.2.5.2.1	Dependent and independent manual operation	dependent manual operation	P
	- actuating force for opening (N) .....:	41,2 N	—
	- test force with blocked main contacts (N) .....:	123,6 N	—
	- used method to keep the contact closed .....:	Fuse-links were held tight with a piece of wire	—
	During and after the test, open position not indicated .....:		P
	Equipment with locking mean, no locking in the open position while test force is applied .....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.2.5.2.2	Dependent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- 110% of the rated supply voltage applied to the equipment (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A
8.2.5.2.3	Independent power operation		N/A
	- main contacts fixed together in the closed position:		N/A
	- used method to keep the contact closed .....:		N/A
	- stored energy of the power operator released (3 times) .....:		N/A
	During and after the test, open position not indicated .....:		N/A
	Equipment show no damage impairing its normal operation .....:		N/A
	Equipment with locking mean, no locking in the open position while test force is applied .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 8: AC-21B, 500 V, 25 A, 1-pole)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	500 V	—
	- rated operational current (A) .....:	25 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 506 V L2: — L3: —	—
	- test current (A) .....:	L1: 25,6 A L2: — L3: —	—
	- power factor/~~time constant~~ .....:	L1: 0,95 L2: — L3: —	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence .....:	515 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	11,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 2 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 108	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 9: AC-21B, 690 V, 10 A, 1-pole)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-21B	—
	- rated operational voltage (V) .....:	690 V	—
	- rated operational current (A) .....:	10 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 690 V L2: — L3: —	—
	- test current (A) .....:	L1: 10,2 A L2: — L3: —	—
	- power factor/~~time constant~~ .....:	L1: 0,95 L2: — L3: —	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence .....:	1125 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	8,0 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	0,005 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 108	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 10: AC-22B, 400 V, 32 A, 1-pole)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	400 V	—
	- rated operational current (A) .....:	32 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 414 V L2: L3: —	—
	- test current (A) .....:	L1: 32,1 A L2: L3: —	—
	- power factor/~~time constant~~ .....:	L1: 0,79 L2: L3: —	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence .....:	315 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

ВЕРНО С ОРИГИНАЛА

ИНЖЕНЕРИНГ ЕАД

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	11,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	0,006 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 108	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 11: AC-22B, 400 V, 32 A, 2-poles)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	400 V	—
	- rated operational current (A) .....:	32 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 414 V (239 V x √3) L2: 414 V (239 V x √3) L3: —	—
	- test current (A) .....:	L1: 32,2 A L2: 32,2 A L3: —	—
	- power factor/~~time constant~~ .....:	L1: 0,8 L2: 0,8 L3: —	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence .....:	315 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	21,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	0,006 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 109	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 12: AC-22B, 500 V, 25 A, 2-poles)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	500 V	—
	- rated operational current (A) .....:	25 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 510 V (294,4 V x √3) L2: 510 V (294,4 V x √3) L3: —	—
	- test current (A) .....:	L1: 24,9 A L2: 24,9 A L3: —	—
	- power factor/~~time constant~~ .....:	L1: 0,78 L2: 0,78 L3: —	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence .....:	315 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	21,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	< 2 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 109	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 13: AC-22B, 690 V, 10 A, 2-poles)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	690 V	—
	- rated operational current (A) .....:	10 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 690 V (398,4 V x √3) L2: 690 V (398,4 V x √3) L3:—	—
	- test current (A) .....:	L1: 10 A L2: 10 A L3: —	—
	- power factor/~~time constant~~ .....:	L1: 0,78 L2: 0,78 L3: —	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence	315 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	21,8 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	0,008 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 109	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4	TEST SEQUENCE II: OPERATIONAL PERFORMANCE CAPABILITY (Sample No. 14: AC-22B, 690 V, 32 A, 3-poles+N)		P
8.3.4.1	Operational performance test		P
	- utilization category .....:	AC-22B	—
	- rated operational voltage (V) .....:	690 V	—
	- rated operational current (A) .....:	32 A	—
	Test conditions for electrical operation cycles:		
	- test voltage (V) .....:	L1: 690 V (398,4 V x √3) L2: 690 V (398,4 V x √3) L3: 690 V (398,4 V x √3)	—
	- test current (A) .....:	L1: 33 A L2: 33 A L3: 33 A	—
	- power factor/~~time constant~~ .....:	L1: 0,8 L2: 0,8 L3: 0,8	—
	Number of cycles with current .....:	300	P
	Number of cycles without current .....:	1700	P
	First test sequence (with/without current) .....:	Without current	—
	Second test sequence (with/without current) .....:	With current	—
	- time interval between first and second test sequence .....:	315 minutes	—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	44,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.4.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No breakdown or flashover		P
8.3.4.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:	0,01 mA	P
8.3.4.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.4.4 on page 110	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5	TEST SEQUENCE III: SHORT-CIRCUIT PERFORMANCE CAPABILITY		N/A
8.3.5.1	Short-time withstand current test		N/A
	Rated short-time withstand current Icw (A) (>12.Ie max) .....:		N/A
	test voltage (V) .....:	L1: L2: L3:	—
	r.m.s. test current (A) .....:	L1: L2: L3:	—
	peak test current (A) .....:	L1: L2: L3:	—
	power factor/time constant .....:	L1: L2: L3:	—
	test duration (s) .....:		—
8.3.5.1.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	- cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.1.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.5.2	Short-circuit making capacity		N/A
	Rated short-circuit making capacity Icm (A) .....:		N/A
	test voltage (1.05xUe) ..... (V):	L1: L2: L3:	—
	r.m.s. test current (A) .....:	L1: L2: L3:	—
	maximum peak test current (factor n)		N/A
	power factor/time constant .....:	L1: L2: L3:	N/A
	current duration (s) .....:		—
	Time interval between the cycles		—
8.3.5.2.5	Behaviour of the equipment during the test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.5.2.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.5.3	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~ .....:		—
	No flashover or breakdown		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.5.4	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:		N/A
8.3.5.5	Temperature-rise verification		N/A
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:		—
	- manufacturer's model or type reference .....:		—
	- rated current (A) .....:		—
	- power loss (W) .....:		—
	- rated breaking capacity (kA) .....:		—
	- conductor cross-section (mm²) .....:		—
	- test current Ie (A) .....:		—
	Measured temperature-rise .....:	see appended table 8.3.5.5 on page __	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 15: 400 V, 32 A, 1-pole)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated voltage (V) .....:	400 V	—
	- rated current (A) .....:	32 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 420 V L2: — L3: —	—
	test current (kA) .....:	L1: 101 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,19	—
	Time constant (ms) .....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 6,5 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 7000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 4,94 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 5000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	8,7 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ ..... :	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) ..... :	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ..... :		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole ..... :	0,008 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	- conductor cross-section (mm²) ..... :	6 mm²	—
	- test current Ie (A) ..... :	32 A	—
	Measured temperature-rise ..... :	see appended table 8.3.6.5 on page 110	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 16: 400 V, 32 A, 1-pole+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated voltage (V) ..... :	400 V	—
	- rated current (A) ..... :	32 A (gG)	—
	- rated breaking capacity (kA) ..... :	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 420 V L2: — L3: —	—
	test current (kA) ..... :	L1: 101 kA L2: — L3: —	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,19	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 6,54 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 7000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 3,7 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 4000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	24,8 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1600 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 111	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 17: 400 V, 32 A, 2-poles)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated voltage (V) ..... :	400 V	—
	- rated current (A) ..... :	32 A (gG)	—
	- rated breaking capacity (kA) ..... :	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 420 V (242,5 V x √3) L2: 420 V (242,5 V x √3) L3: —	—
	test current (kA) ..... :	L1: 101 kA L2: 101 kA L3: —	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,19	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 6,35 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 5000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 6,15 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 5000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	22 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ ..... :	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) ..... :	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ..... :		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole ..... :	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated current (A) ..... :	32 A (gG)	—
	- power loss (W) ..... :	2,9 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	- conductor cross-section (mm²) ..... :	6 mm²	—
	- test current Ie (A) ..... :	32 A	—
	Measured temperature-rise ..... :	see appended table 8.3.6.5 on page 111	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 18: 400 V, 32 A, 3-poles+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G32	—
	- rated voltage (V) ..... :	400 V	—
	- rated current (A) ..... :	32 A (gG)	—
	- rated breaking capacity (kA) ..... :	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 420 V (242,5 V x √3) L2: 420 V (242,5 V x √3) L3: 420 V (242,5 V x √3)	—
	test current (kA) ..... :	L1: 103 kA L2: 100 kA L3: 101 kA	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,19	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 0,4 kA L2: 4,8 kA L3: 4,8 kA	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 0 A^2s L2: 4000 A^2s L3: 4000 A^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 1,6 kA L2: 4,2 kA L3: 4,4 kA	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 0 A^2s L2: 4000 A^2s L3: 4000 A^2s	—

ВЕРНО С ОРИГИНАЛА

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	49,1 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	440 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 111	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 19: 500 V, 25 A, 1-pole)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated voltage (V) .....:	500 V	—
	- rated current (A) .....:	25 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 537 V L2: — L3: —	—
	test current (kA) .....:	L1: 107 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,2	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 2,59 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 3,56 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	11,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ ..... :	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) ..... :	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole ..... :		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole ..... :	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G25	—
	- rated current (A) ..... :	25 A (gG)	—
	- power loss (W) ..... :	2,6 W	—
	- rated breaking capacity (kA) ..... :	120 kA	—
	- conductor cross-section (mm²) ..... :	4 mm²	—
	- test current Ie (A) ..... :	25 A	—
	Measured temperature-rise ..... :	see appended table 8.3.6.5 on page 112	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 20: 500 V, 25 A, 1-pole+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated voltage (V) .....:	500 V	—
	- rated current (A) .....:	25 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 537 V L2: — L3: —	—
	test current (kA) .....:	L1: 107 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,2	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 3,8 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 2,22 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	20,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 112	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 21: 500 V, 25 A, 2-poles)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark ..... :	Bussmann	—
	- manufacturer's model or type reference ..... :	C10G25	—
	- rated voltage (V) ..... :	500 V	—
	- rated current (A) ..... :	25 A (gG)	—
	- rated breaking capacity (kA) ..... :	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) ..... :	L1: 537 V (310 V x √3) L2: 537 V (310 V x √3) L3: —	—
	test current (kA) ..... :	L1: 107 kA L2: 107 kA L3: —	—
	rated frequency (Hz) ..... :	50 Hz	—
	power factor ..... :	0,2	—
	Time constant (ms) ..... :	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) ..... :	L1: 3,71 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 1000 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) ..... :	1,6 m/s	—
	- point at which the measurement is made ..... :	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) ..... :	1,5 m/s	—
	- max. let-through current (kA) ..... :	L1: 3,64 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) ..... :	L1: 1000 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	31,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,005 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 112	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 22: 500 V, 25 A, 3-poles+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated voltage (V) .....:	500 V	—
	- rated current (A) .....:	25 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 730 V (421,5 V x √3) L2: 730 V (421,5 V x √3) L3: 730 V (421,5 V x √3)	—
	test current (kA) .....:	L1: 102 kA L2: 102 kA L3: 101 kA	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,2	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 1,9 kA L2: 3,8 kA L3: 2,0 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 1000 A^2s L2: 2000 A^2s L3: 1000 A^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,4 m/s	—
	- max. let-through current (kA) .....:	L1: 0 kA L2: 3,16 kA L3: 3,16 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: 1000 A^2s L3: 1000 A^2s	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	46,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1000 V (tested with 1380 V)	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	550 V (tested with 759 V)	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G25	—
	- rated current (A) .....:	25 A (gG)	—
	- power loss (W) .....:	2,6 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	4 mm²	—
	- test current Ie (A) .....:	25 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 113	P

IEC 60947-3			
Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 23: 690 V, 10 A, 1-pole)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated voltage (V) .....:	690 V	—
	- rated current (A) .....:	10 A (gR)	—
	- rated breaking capacity (kA) .....:	200 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 725 V L2: — L3: —	—
	test current (kA) .....:	L1: 52,7 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,13	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 2,0 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 0,77 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	18,8 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 113	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 24: 690 V, 10 A, 1-pole+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated voltage (V) .....:	690 V	—
	- rated current (A) .....:	10 A (gR)	—
	- rated breaking capacity (kA) .....:	200 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 726 V L2: — L3: —	—
	test current (kA) .....:	L1: 52,7 kA L2: — L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,13	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 1,02 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 0,78 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	25,4 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,001 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 113	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 25: 690 V, 10 A, 2-poles)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated voltage (V) .....:	690 V	—
	- rated current (A) .....:	10 A (gR)	—
	- rated breaking capacity (kA) .....:	200 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 726 V (419,16 V x √3) L2: 726 V (419,16 V x √3) L3: —	—
	test current (kA) .....:	L1: 52,7 kA L2: 52,7 kA L3: —	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,13	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 0,61 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,5 m/s	—
	- max. let-through current (kA) .....:	L1: 0,55 kA L2: — L3: —	—
	- Joule integral I^2dt (A^2s) .....:	L1: 0 A^2s L2: — L3: —	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	34,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,003 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	SIBA	—
	- manufacturer's model or type reference .....:	50 179 06.10	—
	- rated current (A) .....:	10 A (gR)	—
	- power loss (W) .....:	2,3 W	—
	- rated breaking capacity (kA) .....:	200 kA	—
	- conductor cross-section (mm²) .....:	1,5 mm²	—
	- test current Ie (A) .....:	10 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 114	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6	TEST SEQUENCE IV: CONDITIONAL SHORT-CIRCUIT CURRENT (Sample No. 26: 690 V, 32 A, 3-poles+N)		P
	Protective device details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated voltage (V) .....:	400 V	—
	- rated current (A) .....:	32 A (gG)	—
	- rated breaking capacity (kA) .....:	120 kA	—
8.3.6.2	Fuse protected short-circuit withstand		P
	test voltage (1,05 Ue) (V) .....:	L1: 726 V (419,16 V x √3) L2: 726 V (419,16 V x √3) L3: 726 V (419,16 V x √3)	—
	test current (kA) .....:	L1: 50,9 kA L2: 52,2 kA L3: 51,0 kA	—
	rated frequency (Hz) .....:	50 Hz	—
	power factor .....:	0,23	—
	Time constant (ms).....:	—	—
	Fuse protected short-circuit withstand (equipment in closed position)		
	- max. let-through current (kA) .....:	L1: 0,9 kA L2: 5,6 kA L3: 5,6 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 2000 A^2s L2: 8000 A^2s L3: 6000 A^2s	—
	Fuse protected short-circuit making		P
	- mean velocity of 15 manually under no-load conditions operations (m/s) .....:	1,6 m/s	—
	- point at which the measurement is made .....:	point of rotation	—
	- test speed during the fuse protected short-circuit making (m/s) .....:	1,4 m/s	—
	- max. let-through current (kA) .....:	L1: 5,3 kA L2: 5,3 kA L3: 0 kA	—
	- Joule integral I^2dt (A^2s) .....:	L1: 5000 A^2s L2: 5000 A^2s L3: 0 A^2s	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.6.2.5	Behaviour of the equipment during the test		P
	Test performed without:		—
	- endanger to the operator		P
	- cause damage to adjacent equipment		P
	No permanent arcing		P
	No flash over between poles and poles and frame		P
	No melting of the fuse in the detection circuit		P
8.3.6.2.6	Condition of the equipment after making and breaking capacity tests		P
	Immediately after the test equipment must work satisfactorily		P
	- required opening force not greater than the test force of 8.2.5.2 and table 8	51,6 N (required opening force) 150 N (test force acc. tab. 8)	P
	- equipment is able to carry its rated current after normal closing operation		P
8.3.6.3	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.6.4	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2,0 mA/pole .....:	0,002 mA	P
8.3.6.5	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.6.5 on page 114	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY (Sample No. 27: 690 V, 32 A, 1-pole)		P
8.3.7.1	Overload test		P
	ambient temperature 10-40 °C .....:	25,6 °C	—
	test enclosure W x H x D (mm x mm x mm) .....:	—	—
	material of enclosure .....:	—	—
	test current 1,6xIthe or 1,6xIth (A) .....:	52	—
	cable/busbar cross-section (mm²) / length (mm) ...:	6 mm² cable / 1000 mm long	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- time duration of the overload test (s) .....:	824 s	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	14 N (required opening force) 150 N (test force acc. tab. 8)	P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	0,002 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:		P
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.7.4 on page 114	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY (Sample No. 28: 690 V, 32 A, 2-poles)		P
8.3.7.1	Overload test		P
	ambient temperature 10-40 °C .....:	23,6 °C	—
	test enclosure W x H x D (mm x mm x mm) .....:	—	—
	material of enclosure .....:	—	—
	test current 1,6xIthe or 1,6xIth (A) .....:	52	—
	cable/busbar cross-section (mm²) / length (mm) ...:	6 mm² cable / 1000 mm long	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- time duration of the overload test (s) .....:	573 s	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	17,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	0,001 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:		P
	- conductor cross-section (mm²) .....:	6 mm²	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.7.4 on page 115	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7	TEST SEQUENCE V: OVERLOAD PERFORMANCE CAPABILITY (Sample No. 29: 690 V, 32 A, 3-poles+N)		P
8.3.7.1	Overload test		P
	ambient temperature 10-40 °C .....:	23,6 °C	—
	test enclosure W x H x D (mm x mm x mm) .....:	—	—
	material of enclosure .....:	—	—
	test current 1,6xIthe or 1,6xIth (A) .....:	52	—
	cable/busbar cross-section (mm²) / length (mm) ...:	6 mm² cable / 1000 mm long	—
	Fuse-link details:		P
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	- time duration of the overload test (s) .....:	540 s	—
	Within 3 to 5 min after the fuse(s) has(have) operated (or 1 h), the equipment has been operated once, i.e. opened and closed		P
	Required opening force not greater than the test force of 8.2.5.2 and table 8	35,2 N (required opening force) 150 N (test force acc. tab. 8)	P
	The equipment has not undergone any impairment hindering such operation		P
8.3.7.2	Dielectric verification		P
	test voltage: 2*Ue with a minimum of 1000V~ .....:	1380 V	—
	No flashover or breakdown		P
8.3.7.3	Leakage current		P
	test voltage (1,1 Ue) (V) .....:	759 V	—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA)/pole .....:	0,001 mA	P

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.7.4	Temperature-rise verification		P
	Fuse-link details (fuse-combination units only):		—
	- manufacturer's name, trademark or identification mark .....:	Bussmann	—
	- manufacturer's model or type reference .....:	C10G32	—
	- rated current (A) .....:	32 A (gG)	—
	- power loss (W) .....:	2,9 W	—
	- rated breaking capacity (kA) .....:	120 kA	—
	Fuse links aged during the overload test are replaced by new fuse-links .....:		P
	- conductor cross-section (mm^2) .....:	6 mm^2	—
	- test current Ie (A) .....:	32 A	—
	Measured temperature-rise .....:	see appended table 8.3.7.4 on page 115	P
8.4	ELECTROMAGNETIC COMPATIBILITY TESTS		N/A
8.4.1	Immunity		N/A
8.4.1.1	Equipment not incorporating electronic circuits: no tests necessary		N/A
8.4.1.2	Equipment incorporating electronic circuits:		N/A
	Equipment utilizing circuits in which all components are passive are not required to be tested		N/A
	All other equipment, requirements according to 7.3.3.2 and limits according table 6 apply		N/A
	Performed tests.....:	see _____	N/A
	No unintentional separation or closing of contacts has occurred during these tests .....:		N/A
8.4.2	Emission		N/A
8.4.2.1	Equipment not incorporating electronic circuits: no tests necessary		N/A
8.4.2.2	Equipment incorporating electronic circuits:		N/A
	Equipment utilizing circuits in which all components are passive are not required to be tested		N/A
	All other equipment, requirements according to 7.3.3.2 and limits according table 7 apply		N/A
	Performed tests.....:	see _____	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Annex A (normative)		N/A
A	Equipment for direct switching of a single motor		N/A
A.1	Additional rated duties.....:		N/A
A.1.1	- intermittent periodic duty		N/A
	- intermittent duty		N/A
A.1.1.1	Classes of intermittent duty .....:		N/A
	-class 1: up to 1 operating cycle per hour		N/A
	-class 3: up to 3 operating cycle per hour		N/A
	-class 12: up to 12 operating cycles per hour		N/A
	-class 30: up to 30 operating cycles per hour		N/A
	-class 120: up to 120 operating cycles per hour		N/A
A.1.2	Temporary duty.....:		N/A
A.5	Mechanical durability:		N/A
	Equipment mounted according to manufacturer's instruction		N/A
	Preferred number of no-load operating cycles expressed in millions.....:		N/A
	0,001 – 0,003 – 0,01 – 0,03 – 0,1 – 0,3 - 1		N/A
	If no mechanical endurance is stated by the manufacturer, a minimum mechanical endurance according to the class of intermittent duty shall be tested.	Class of intermittent duty:	N/A
	Number of no-load operating cycles performed.....:	_____	N/A
A.6	Electrical durability:		N/A
	- test according to manufacturer's instruction		N/A
A.7	Verification of making and breaking capacities:		N/A
	- utilization category .....:		—
	- rated operational voltage Ue (V) .....:		—
	- rated operational current Ie (A) or power (kW) ....:		—
	Conditions for make/break operations or make operations:		—
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- power factor .....:	L1: L2: L3:	—
	Conditions for make/break operations:		N/A
	- test voltage, U = 1,05 Ue ..... (V):	L1: L2: L3:	—
	- test current, I = ... x Ie (A):	L1: L2: L3:	—
	- power factor/ time constant .....:	L1: L2: L3:	—
	Number of make/break or make and break operations .....:		N/A
	- recovery voltage duration (≥ 50 ms)		N/A
	- current duration (ms) .....:		—
	- time interval between operations .....:		N/A
	Characteristic of transient recovery voltage if necessary:		N/A
	- oscillatory frequency (kHz) .....:		—
	- measured oscillatory frequency (kHz) .....:	L1: L2: L3:	N/A
	- factor γ .....:	L1: L2: L3:	N/A
8.3.3.3.5	Behaviour of the equipment during making and breaking capacity tests		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	- cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.3.3.3.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.3.4	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~ .....:		—
	No flashover or breakdown		N/A
8.3.3.5	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B): ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories): ≤ 2 mA/pole) .....:		N/A
8.3.3.6	Temperature-rise verification		N/A
	- conductor cross-section (mm²) .....:		—
	- test current Ie (A) .....:		—
	Measured temperature-rise .....:	see __	N/A
A.8	Operational performance test:		N/A
	- utilization category .....:		—
	- rated operational voltage (V) .....:		—
	- rated operational current (A) .....:		—
	Test conditions for electrical operation cycles:		N/A
	- test voltage (V) .....:	L1: L2: L3:	—
	- test current (A) .....:	L1: L2: L3:	—
	- power factor/time constant .....:	L1: L2: L3:	—
	Number of cycles with current .....:		N/A
	Number of cycles without current .....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	First test sequence (with/without current) .....:		—
	Second test sequence (with/without current) .....:		—
	- time interval between first and second test sequence .....:		—
8.3.4.1.5	Behaviour of the equipment during the operational performance test		N/A
	Test performed without:		—
	- endanger to the operator		N/A
	-cause damage to adjacent equipment		N/A
	No permanent arcing		N/A
	No flash over between poles and poles and frame		N/A
	No melting of the fuse in the detection circuit		N/A
8.3.4.1.6	Condition of the equipment after making and breaking capacity tests		N/A
	Immediately after the test equipment must work satisfactorily		N/A
	- required opening force not greater than the test force of 8.2.5.2 and table 8		N/A
	- equipment is able to carry its rated current after normal closing operation		N/A
8.3.4.2	Dielectric verification		N/A
	test voltage: 2*Ue with a minimum of 1000V~ .....:		—
	No breakdown or flashover		N/A
8.3.4.3	Leakage current		N/A
	test voltage (1,1 Ue) (V) .....:		—
	Leakage current (utilization categories AC-20A, AC-20B, DC-20A and DC-20B) ≤ 0,5 mA/pole .....:		N/A
	Leakage current (other utilization categories) ≤ 2 mA/pole .....:		N/A
8.3.4.4	Temperature-rise verification		N/A
	- conductor cross-section (mm²) .....:		—
	- test current Ie (A) .....:		—
	Measured temperature-rise .....:	see __	N/A
A.9	Special tests:	see __	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

Annex C (normative)			N/A
C	Single pole operated three pole switches		N/A
C.1	Three pole operated switches of fundamentally the same design, already successfully tested are deemed to satisfy the requirements of individually operated three pole devices.		N/A
C.2	Additional-tests to be performed on single pole operated three pole switches		N/A
	Test "8.3.3.3 Making and breaking capacities" according to test sequence I with following modifications		N/A
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:		N/A
	Test performed in a three phase circuit		N/A
	Test "8.3.4.1 Operational performance" according to test sequence II with following modifications		N/A
	L1 and L2 are closed, L3 is subjected to the required make-break operation cycle.....:		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:		N/A
	Test performed in a three phase circuit		N/A
	Test "8.3.6.2 Fuse protected short circuit test" according to test sequence IV with following modifications		N/A
	For the making test L1 shall be open and L2 closed, L3 is subjected to the required make operation cycle.....:		N/A
	L2 closed and L3 opened, L1 is subjected to the required make-break operation cycle.....:		N/A
	Test performed in a three phase circuit		N/A
C.5	Instruction for use		N/A
	The product literature includes following statement :		N/A
	These devices are intended for power distribution systems where switching and/or isolating of an individual phase may be necessary and shall not be used for the switching of the primary circuit of three-phase equipment.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

7.1.4	**TABLE: Clearance and creepage distance measurements**					
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)
Between active parts and parts intended to be touched	7300	800	2	>5,5	11	>11
Between active parts and enclosure	7300	800	2	>5,5	11	>11
Between active parts and fuse-link with the contacts in open position	9800	800	2	>5,5	11	>11
supplementary information:						

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 1: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		39,3	70
Below terminals (cable connection)		35,3	70
Manual operating means: ~~metallic~~ / non-metallic		4,3	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		8,5	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		12,8	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 1: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		37,2	80
Manual operating means: ~~metallic~~ / non-metallic		4,6	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		6,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		17,0	60
supplementary information:	Ambient temperature:	22,9 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 2: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		31,7	70
Below terminals (cable connection)		29,8	70
Manual operating means: ~~metallic~~ / non-metallic		5,0	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		8,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		15,3	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 2: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		32,9	80
Manual operating means: ~~metallic~~ / non-metallic		3,7	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		5,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		19,4	60
supplementary information:	Ambient temperature:	23,8 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 3: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		45,0	70
Below terminals (cable connection)		37,5	70
Manual operating means: ~~metallic~~ / non-metallic		5,5	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		12,0	50
supplementary information:	Ambient temperature:	22,7 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 3: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		39,0	80
Manual operating means: ~~metallic~~ / non-metallic		4,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		5,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		21,1	60
supplementary information:	Ambient temperature:	24,3 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 4: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		48,5	70
Below terminals (cable connection)		47,3	70
Manual operating means: ~~metallic~~ / non-metallic		7,8	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		21,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		14,5	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 4: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		49,0	80
Manual operating means: ~~metallic~~ / non-metallic		8,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		12,9	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		26,9	60
supplementary information:	Ambient temperature:	24,4 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 5: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		44,3	70
Below terminals (cable connection)		42,9	70
Manual operating means: ~~metallic~~ / non-metallic		10,6	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,3	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		15,2	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 5: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		47,5	80
Manual operating means: ~~metallic~~ / non-metallic		8,9	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		16,2	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,8	60
supplementary information:	Ambient temperature:	22,9 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 6: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		44,5	70
Below terminals (cable connection)		40,8	70
Manual operating means: ~~metallic~~ / non-metallic		9,3	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		19,5	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		14,8	50
supplementary information:	Ambient temperature:	22,7 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 6: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		50,4	80
Manual operating means: ~~metallic~~ / non-metallic		6,3	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		27,0	60
supplementary information:	Ambient temperature:	23,8 °C	

8.3.3.1	**TABLE: Temperature-rise (measurements) (Sample No. 7: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Above terminals (cable connection)		63,8	70
Below terminals (cable connection)		63,9	70
Manual operating means: ~~metallic~~ / non-metallic		16,9	25
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		32,8	40
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,3	50
supplementary information:	Ambient temperature:	22,7 °C	

8.3.3.6	**TABLE: Temperature-rise (measurements) (Sample No. 7: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		59,9	80
Manual operating means: ~~metallic~~ / non-metallic		11,2	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		23,7	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		27,6	60
supplementary information:	Ambient temperature:	24,4 °C	

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Clause	Requirement + Test	Result - Remark	Verdict

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 8: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		39,6	80
Manual operating means: ~~metallic~~ / non-metallic		5,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		17,6	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		25,9	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 9: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		43,1	80
Manual operating means: ~~metallic~~ / non-metallic		3,3	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		14,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		20,3	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 10: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		47,5	80
Manual operating means: ~~metallic~~ / non-metallic		10,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		24,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		26,1	60
supplementary information:	Ambient temperature:	25,3 °C	

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8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 11: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		42,5	80
Manual operating means: ~~metallic~~ / non-metallic		9,2	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		22,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,5	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 12: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		48,9	80
Manual operating means: ~~metallic~~ / non-metallic		8,4	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		28,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		30,4	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 13: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		43,8	80
Manual operating means: ~~metallic~~ / non-metallic		9,3	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		28,5	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		28,7	60
supplementary information:	Ambient temperature:	25,3 °C	

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8.3.4.4	**TABLE: Temperature-rise (measurements) (Sample No. 14: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		44,1	80
Manual operating means: ~~metallic~~ / non-metallic		14,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		34,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		23,3	60
supplementary information:	Ambient temperature:	25,3 °C	

8.3.5.5	**TABLE: Temperature-rise (measurements)**		N/A
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals			
Manual operating means: metallic / non-metallic			
Parts intended to be touched but not hand-held: metallic / non-metallic			
Parts which need not be touched during normal operation: metallic / non-metallic			
supplementary information:			

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 15: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		53,5	80
Manual operating means: ~~metallic~~ / non-metallic		6,0	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		16,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		26,3	60
supplementary information:	Ambient temperature:	23,5 °C	

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8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 16: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		58,5	80
Manual operating means: ~~metallic~~ / non-metallic		10,2	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		21,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		40,5	60
supplementary information:	Ambient temperature:	24,9 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 17: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		65,9	80
Manual operating means: ~~metallic~~ / non-metallic		14,1	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		28,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		44,7	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 18: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		60,3	80
Manual operating means: ~~metallic~~ / non-metallic		16,6	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		35,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		33,5	60
supplementary information:	Ambient temperature:	24,2 °C	

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8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 19: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		35,6	80
Manual operating means: ~~metallic~~ / non-metallic		6,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		15,7	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		22,0	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 20: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		42,1	80
Manual operating means: ~~metallic~~ / non-metallic		8,6	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		19,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		24,3	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 21: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		46,6	80
Manual operating means: ~~metallic~~ / non-metallic		12,9	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		26,5	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		28,2	60
supplementary information:	Ambient temperature:	24,6 °C	

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8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 22: I_e = 25 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		57,7	80
Manual operating means: ~~metallic~~ / non-metallic		16,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		33,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		30,6	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 23: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		33,5	80
Manual operating means: ~~metallic~~ / non-metallic		3,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		13,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		19,0	60
supplementary information:	Ambient temperature:	23,3 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 24: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		31,9	80
Manual operating means: ~~metallic~~ / non-metallic		6,1	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		17,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		19,3	60
supplementary information:	Ambient temperature:	23,3 °C	

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8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 25: I_e = 10 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		45,7	80
Manual operating means: ~~metallic~~ / non-metallic		8,4	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		24,1	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		25,3	60
supplementary information:	Ambient temperature:	23,3 °C	

8.3.6.5	**TABLE: Temperature-rise (measurements) (Sample No. 26: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		56,8	80
Manual operating means: ~~metallic~~ / non-metallic		13,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		33,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		30,8	60
supplementary information:	Ambient temperature:	24,6 °C	

8.3.7.4	**TABLE: Temperature-rise (measurements) (Sample No. 27: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		42,5	80
Manual operating means: ~~metallic~~ / non-metallic		2,8	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		14,0	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		21,6	60
supplementary information:	Ambient temperature:	22,6 °C	

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8.3.7.4	**TABLE: Temperature-rise (measurements) (Sample No. 28: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		46,8	80
Manual operating means: ~~metallic~~ / non-metallic		11,7	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		31,8	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		35,4	60
supplementary information:	Ambient temperature:	23,4 °C	

8.3.7.4	**TABLE: Temperature-rise (measurements) (Sample No. 29: I_e = 32 A)**		P
Temperature rise dT of part:		dT (K) measured	dT (K) required
Terminals		53,6	80
Manual operating means: ~~metallic~~ / non-metallic		17,5	35
Parts intended to be touched but not hand-held: ~~metallic~~ / non-metallic		33,4	50
Parts which need not be touched during normal operation: ~~metallic~~ / non-metallic		41,5	60
supplementary information:	Ambient temperature:	23,8 °C	

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List of test equipment used:
(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date
		Not applicable,		
		only required for the MT programs		

DAkkS
Deutsche
Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Entrusted according to Section 8 subsection1 AkkStelleG in connection with Section 1 subsection 1 AkkStelleGBV
Signatory to the Multilateral Agreements of
EA, ILAC and IAF for Mutual Recognition

Accreditation

The Deutsche Akkreditierungsstelle GmbH attests that the testing laboratory

IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH
Landsberger Allee 378 A, 12681 Berlin

is competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out tests in the following fields:

High-voltage equipment and components
Low-voltage equipment and components
Installation, switching, control and protective equipment
High-voltage, medium-voltage and low-voltage cables and their accessories

The accreditation certificate shall only apply in connection with the notice of accreditation of 2015-11-11 with the accreditation number D-PL-12107-01 and is valid until 2020-11-10. It comprises the cover sheet, the reverse side of the cover sheet and the following annex with a total of 42 pages.

Registration number of the certificate: **D-PL-12107-01-00**

ВЯРНО ОРИГИНАЛА

ИНЖЕНЕРИНГ ПРОВЕРИВ ЕАД

На основание чл. 2
от ЗЗЛД

Frankfurt, 2015-11-11

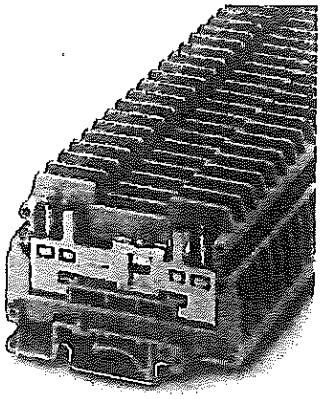
This document is a translation. The definitive version is the

See notes overleaf.

Extract from the online catalog

URTK/S

Order No.: 0311087



http://eshop.phoenixcontact.net/phoenix/treeViewClick.do?UID=0311087

Test disconnect terminal block, Connection method: Screw connection, Cross section: 0.5 mm² - 10 mm² , AWG: 20 - 10, Width: 8.2 mm, Mounting type: NS 35/7.5, NS 35/15, NS 32, Color: gray

Commercial data

EAN	4 017918 001292
Pack	50 pcs.
Customs tariff	85369010
Gross weight in pieces	0.035996 KG
Net weight per piece (exclusive packing)	0.03581 KG
Catalog page information	Page 463 (CL1-2011)

Product notes

WEEE/RoHS-compliant since: 01/01/2003

http://www.download.phoenixcontact.com
Please note that the data given here has been taken from the online catalog. For comprehensive information and data, please refer to the user documentation. The General Terms and Conditions of Use apply to Internet downloads.

Technical data

General

Number of levels	1
Number of connections	2
Color	gray

Insulating material	PA
Inflammability class according to UL 94	V0

Dimensions

Length	72 mm
Width	8.2 mm
Height NS 35/7,5	51.5 mm
Height NS 35/15	59 mm
Height NS 32	56 mm

Technical data

Rated surge voltage	6 kV
Pollution degree	3
Surge voltage category	III
Insulating material group	I
Connection in acc. with standard	IEC 60947-7-1
Nominal current I_N	41 A
Nominal voltage U_N	400 V
Open side panel	ja
Shock protection test specification	DIN EN 50274 (VDE 0660-514):2002-11
Back of the hand protection	guaranteed
Surge voltage test setpoint	7.3 kV
Result of surge voltage test	Test passed
Power frequency withstand voltage setpoint	1.89 kV
Result of power-frequency withstand voltage test	Test passed
Checking the mechanical stability of terminal points (5 x conductor connection)	Test passed
Bending test rotation speed	10 rpm
Bending test turns	135
Bending test conductor cross section/weight	0.5 mm² / 0.3 kg
	6 mm² / 1.4 kg
	10 mm² / 2 kg
Result of bending test	Test passed
Conductor cross section tensile test	0.5 mm²
Tractive force setpoint	20 N
Conductor cross section tensile test	6 mm²
Tractive force setpoint	80 N

Conductor cross section tensile test	10 mm²
Tractive force setpoint	90 N
Tensile test result	Test passed
Tight fit on carrier	NS 32/NS 35
Setpoint	5 N
Result of tight fit test	Test passed
Result of voltage drop test	Test passed
Temperature-rise test	Test passed
Conductor cross section short circuit testing	6 mm²
Short-time current	0.72 kA
Conductor cross section short circuit testing	10 mm²
Short-time current	1.2 kA
Short circuit stability result	Test passed
Proof of thermal characteristics (needle flame) effective duration	30 s
Result of thermal test	Test passed
Temperature index, insulating material (DIN EN 60216-1 (VDE 0304-21))	130 °C
Static insulating material application in cold	-60 °C

Connection data

Conductor cross section solid min.	0.5 mm²
Conductor cross section solid max.	10 mm²
Conductor cross section stranded min.	0.5 mm²
Conductor cross section stranded max.	6 mm²
Conductor cross section AWG/kcmil min.	20
Conductor cross section AWG/kcmil max	8
Conductor cross section stranded, with ferrule without plastic sleeve min.	0.5 mm²
Conductor cross section stranded, with ferrule without plastic sleeve max.	6 mm²
Conductor cross section stranded, with ferrule with plastic sleeve min.	0.5 mm²
Conductor cross section stranded, with ferrule with plastic sleeve max.	4 mm²
2 conductors with same cross section, solid min.	0.5 mm²
2 conductors with same cross section, solid max.	2.5 mm²
2 conductors with same cross section, stranded min.	0.5 mm²

2 conductors with same cross section, stranded max.	6 mm²
2 conductors with same cross section, stranded, ferrules without plastic sleeve, min.	0.5 mm²
2 conductors with same cross section, stranded, ferrules without plastic sleeve, max.	4 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, min.	0.5 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, max.	4 mm²
Connection method	Screw connection
Stripping length	13 mm
Internal cylindrical gage	A5
Screw thread	M4
Tightening torque, min	1.2 Nm
Tightening torque max	1.5 Nm

Certificates / Approvals

Certification	CSA, cULus Recognized, GOST, KEMA-KEUR, DNV, LR, PRS, RS, CCA

Certifications applied for:

Certification Ex:

Accessories

Item	Designation	Description
Assembly		
3034361	AP-ME METER	Cover profile, for covering terminal strips, snapped onto APT-ME cover profile carrier or APH-ME end bracket. A cover profile carrier should be positioned at the ends and at intervals of around 40 cm. Length supplied: 1 m
3034374	APH-ME	Cover profile carrier for mounting on NS 35/7.5 DIN rail for attaching the cover profile AP-ME
3034358	APT-ME	Cover profile carrier for mounting on NS 35/7.5 DIN rail for attaching the cover profile AP-ME

0310224	ATS-RTK	Partition plate, Length: 72 mm, Width: 0.8 mm, Height: 51.5 mm, Color: gray
3022218	CLIPFIX 35	Snap-on end bracket, for 35 mm NS 35/7.5 or NS 35/15 DIN rail, can be fitted with Zack strip ZB 8 and ZB 8/27, terminal strip marker KLM 2 and KLM, width: 9.5 mm, color: gray
3022276	CLIPFIX 35-5	Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, can be fitted with ZB 5 and ZBF 5 zack marker strip, KLM 2, KLM3, and KML3L terminal strip marker, parking option for FBS...5, FBS,..6, KSS 5, KSS 6, width: 5.15 mm, color: gray
0310020	D-URTK	End cover, Length: 72 mm, Width: 2.2 mm, Height: 41.5 mm, Color: gray
1201442	E/UK	End clamp, for assembly on NS 32 or NS 35/7.5 DIN rail
1201413	E/UK 1	End clamps, for supporting the ends of double-level and three-level terminal blocks, width: 10 mm, color: gray
1201002	NS 32 PERF 2000MM	G-profile DIN rail, material: Steel, perforated, height 15 mm, width 32 mm, length 2 m
1201015	NS 32 UNPERF 2000MM	G-profile DIN rail, material: Steel, unperforated, height 15 mm, width 32 mm, length 2 m
0801704	NS 35/ 7,5 AL UNPERF 2000MM	DIN rail, material: Aluminum, unperforated, height 7.5 mm, width 35 mm, length: 2 m
1206560	NS 35/ 7,5 CAP	DIN rail end piece, for DIN rail NS 35/7.5
0801762	NS 35/ 7,5 CU UNPERF 2000MM	DIN rail, material: Copper, unperforated, height 7.5 mm, width 35 mm, length: 2 m
0801733	NS 35/ 7,5 PERF 2000MM	DIN rail, material: steel galvanized and passivated with a thick layer, perforated, height 7.5 mm, width 35 mm, length: 2000 mm
0801681	NS 35/ 7,5 UNPERF 2000MM	DIN rail, material: Steel, unperforated, height 7.5 mm, width 35 mm, length: 2 m
1204119	NS 35/ 7,5 WH PERF 2000MM	DIN rail 35 mm (NS 35)
1204122	NS 35/ 7,5 WH UNPERF 2000MM	DIN rail 35 mm (NS 35)
1206421	NS 35/ 7,5 ZN PERF 2000MM	DIN rail, material: Galvanized, perforated, height 7.5 mm, width 35 mm, length: 2 m
1206434	NS 35/ 7,5 ZN UNPERF 2000MM	DIN rail, material: Galvanized, unperforated, height 7.5 mm, width 35 mm, length: 2 m
1201756	NS 35/15 AL UNPERF 2000MM	DIN rail, deep drawn, high profile, unperforated, 1.5 mm thick, material: aluminum, height 15 mm, width 35 mm, length 2000 mm
1206573	NS 35/15 CAP	DIN rail end piece, for DIN rail NS 35/15
1201895	NS 35/15 CU UNPERF 2000MM	DIN rail, material: Copper, unperforated, 1.5 mm thick, height 15 mm, width 35 mm, length: 2 m
1201730	NS 35/15 PERF 2000MM	DIN rail, material: steel galvanized and passivated with a thick layer, perforated, height 15 mm, width 35 mm, length: 2000 mm
1201714	NS 35/15 UNPERF 2000MM	DIN rail, material: Steel, unperforated, height 15 mm, width 35 mm, length: 2 m

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0806602	NS 35/15 WH PERF 2000MM	DIN rail 35 mm (NS 35)
1204135	NS 35/15 WH UNPERF 2000MM	DIN rail 35 mm (NS 35)
1206599	NS 35/15 ZN PERF 2000MM	DIN rail, material: Galvanized, perforated, height 15 mm, width 35 mm, length: 2 m
1206586	NS 35/15 ZN UNPERF 2000MM	DIN rail, material: Galvanized, unperforated, height 15 mm, width 35 mm, length: 2 m
1201798	NS 35/15-2,3 UNPERF 2000MM	DIN rail, material: Steel, unperforated, 2.3 mm thick, height 15 mm, width 35 mm, length: 2 m
0310211	TS-RTK	Separating plate, Length: 72 mm, Width: 0.8 mm, Color: gray
Bridges		
0311281	ASB 2-RTK/S	Switching jumper, Number of positions: 2, Color: silver
0202154	EB 2- 8	Insertion bridge, Number of positions: 2, Color: gray
0202141	EB 3- 8	Insertion bridge, Number of positions: 3, Color: gray
0202142	EB 4- 8	Insertion bridge, Number of positions: 4, Color: gray
0202138	EB 10- 8	Insertion bridge, Number of positions: 10, Color: gray
0311171	FB 10- RTK/S	Fixed bridge, Number of positions: 10, Color: silver
0308359	S	Switching lock, Length: 12 mm, Width: 8.2 mm, Color: white
0311236	SB 2-RTK/S	Switching jumper, Number of positions: 2, Color: silver
0311265	SB 4-RTK/S	Switching jumper, Number of positions: 4, Color: silver
0311278	USB 2-RTK/S	Switching jumper, Number of positions: 2, Color: silver
General		
0800886	E/NS 35 N	End clamp, width: 9.5 mm, color: gray
Marking		
1007235	SBS 8:UNBEDRUCKT	Marker cards, Card, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, Snap into flat marker groove, For terminal block width: 8.2 mm, Lettering field: 6 x 8.1 mm
0818072	UC-TM 8	Marker for terminal blocks, Sheet, white, Unlabeled, Can be labeled with: BLUEMARK CLED, Bluemark, Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm
0824597	UC-TM 8 CUS	Marker for terminal blocks, Can be ordered: By sheet, white, Labeled according to customer specifications, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm
0828740	UCT-TM 8	Marker for terminal blocks, Sheet, white, Unlabeled, Can be labeled with: Thermomark C+, Thermomark C, BLUEMARK CLED, Bluemark, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm

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0829616	UCT-TM 8 CUS	Marker for terminal blocks, Can be ordered: By sheet, white, Labeled according to customer specifications, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 7.6 x 10.5 mm
0825011	ZB 8 CUS	Zack marker strip, Can be ordered: Strip, white, Labeled according to customer specifications, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 10.5 x 8.15 mm
1052002	ZB 8:UNBEDRUCKT	Zack marker strip, Strip, white, Unlabeled, Can be labeled with: Plotter, Mounting type: Snap into tall marker groove, For terminal block width: 8.2 mm, Lettering field: 10.5 x 8.15 mm

Plug/Adapter

0311728	PSBJ-URTK/S BK	Female test connector, Color: black
0311757	PSBJ-URTK/S BU	Female test connector, Color: blue
0311760	PSBJ-URTK/S GN	Female test connector, Color: green
0311744	PSBJ-URTK/S RD	Female test connector, Color: red
0311773	PSBJ-URTK/S VT	Female test connector, Color: violet
0311731	PSBJ-URTK/S YE	Female test connector, Color: yellow

Tools

1205066	SZS 1,0X4,0 VDE	Screwdriver, bladed, VDE insulated, size: 1.0 x 4.0 x 100 mm, 2-component grip, with non-slip grip

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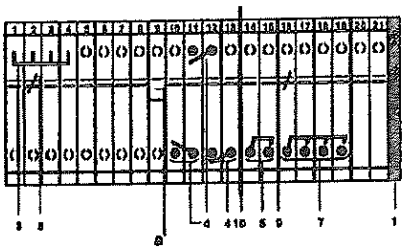
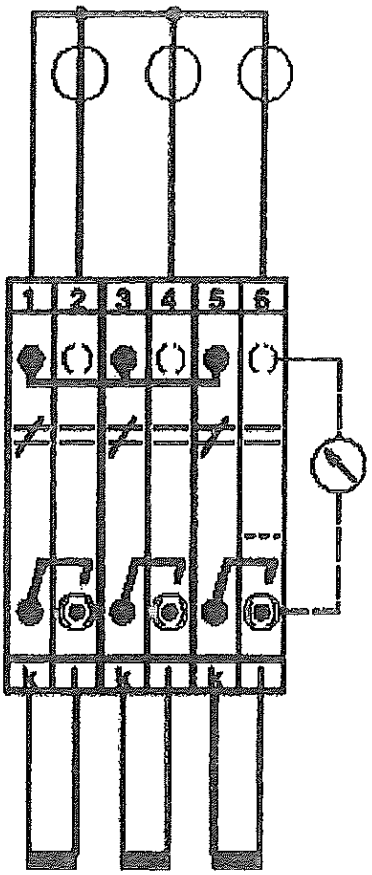
Diagrams/Drawings

Circuit diagram

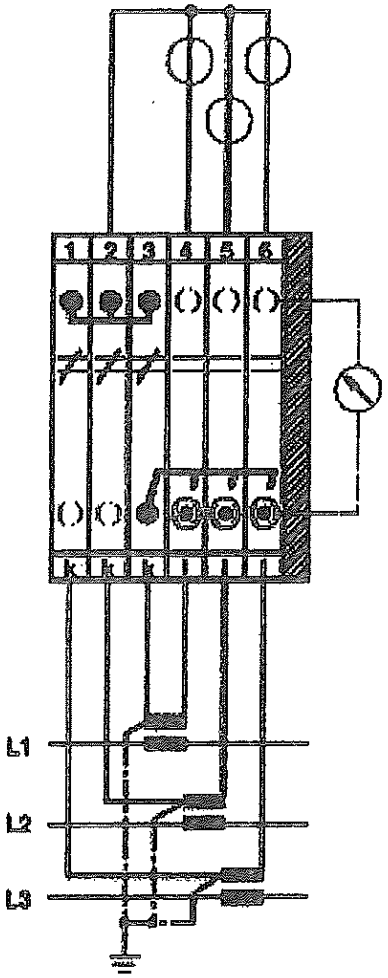


a = open
1 = cover
3 = fixed bridge
4 = switch bar, for 2 terminal blocks, useable on both sides of the disconnect point, inward switching motion
5 = switch bar, for 2 terminal blocks, useable on both sides of the disconnect point, outward switching motion
7 = switch bar, for 3-phasige short-circuiting of linked current transformer sets, only on the right
8 = switching lock, prevents disconnect slide from being actuated
9 = separating plate, for electrical separation of neighboring bridges in terminal center
10 = partition plate

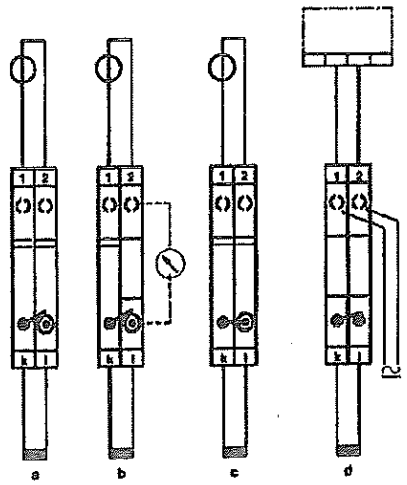
Schematic diagram



Three-phase transducer test set



Three-phase linked transducer test set



Simple current transformer test circuit
a = normal operation
b = measured value testing
c = transformer short-circuit
d = relay testing