

IEC SYSTEM FOR CONFORMITY TESTING TO
STANDARDS FOR SAFETY OF ELECTRICAL
EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE AUX
NORMES DE SECURITE DE L'EQUIPEMENT
ELECTRIQUE (IECEE)
METHODE OC

CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product
Produit

Name and address of the applicant
Nom et adresse du demandeur

Name and address of the manufacturer
Nom et adresse du fabricant

Name and address of the factory
Nom et adresse de l'usine

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Trade mark (if any)
Marque de fabrique (si elle existe)

Model/type Ref.
Ref. de type

Additional information (if necessary)
Information complémentaire (si nécessaire)

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*

as shown in the Test Report Ref. No.
which form part of this certificate
*comme indiqué dans le Rapport d'essais numéro
de référence
qui constitue une partie de ce certificat*

Control units

Benedikt & Jäger
Hofmühlgasse 4
A-1061 Wien
Benedikt & Jäger
Hofmühlgasse 4
A-1061 Wien
Benedikt & Jäger
Hofmühlgasse 4
A-1061 Wien

See relevant test report

Benedikt & Jäger

B3xxx, B4xxxxxxx

PUBLICATION

IEC 947-5-1/1990

EDITION

1st

E 3397-20, E 3397-21

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

W. Martin

Austrian Electrotechnical Association - ÖVE
A-1190 Wien, Kahlenbergerstraße 2b



W. Martin

Date 1996 01 17

Signature Dipl.-Ing. W. Martin
Head of Dept. Testing & Certification



Additional page to CB/AT 1062

<i>Product</i>	<i>Type Designation</i>	<i>Test Report Ref.No.</i>
Control unit	B3xxx	E 3397-20
Control unit	B4xxxxxxx	E 3397-21

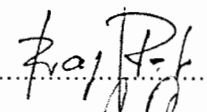
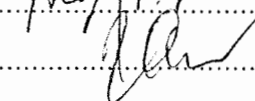


Ö V E

Austrian Centre for international electrotechnical Standardization & Certification

Austrian member of  and 

TEST REPORT
IEC 947-5-1 / EN60947-5-1
Low-voltage switchgear and controlgear
Part 5-1: Control circuit devices and switching elements;
Electromechanical control circuit devices

Report reference No. ... : **E 3397-20**
 Compiled by (+signature) ... : F. Rosenberger 
 Approved by (+signature) ... : H. Hauer 
 Date of issue ... : 1995-12-07

Testing laboratory ... : BFPZ - Arsenal
 Address ... : Faradaygasse 3, A - 1031 Vienna, AUSTRIA
 Testing location ... : see above

Applicant ... : Benedikt & Jäger
 Address ... : Hofmühlgasse 4, A - 1061 Vienna, AUSTRIA

Standard ... : IEC 947-5-1:1990
 Test Report Form No. ... : 947-5-1A
 TRF date ... : 95-09
 TRF originator ... : OVE
 Copyright blank test report ... : OVE

Test procedure ... : CB-scheme, CCA-scheme
 Procedure deviation ... : None
 Non-standard test method ... : None

Type of test item ... : **CONTROL UNIT**
 Trademark ... : Benedikt & Jäger
 Model/type reference ... : **B3xxx** see page 2
 Manufacturer ... : Benedikt & Jäger
 Rating ... : see below

Copy of marking plate

BENEDIKT & JÄGER Ω			
B3xxx			
IEC 947-5-1	AC15	6A	240V
IEC 947-4-1	AC1	10A	690V

TYPE REFERENCE CODE

B 3 x x x
 | | |
 | | | 0,1 : Number of NC contacts (optional)
 | | | 0,1 : Number of NO contacts (optional)
 | | | T : Contact block (optional)
 | | | F : Lampholder (optional)¹⁾

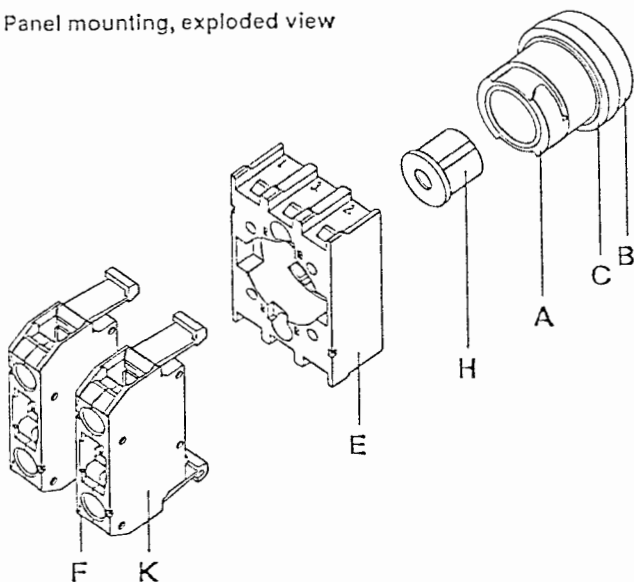
- ¹⁾ B 3 F only up to 440 V
 Lamp max. 1,7 W for pushbutton only
 Lamp max. 2,6 W for lens only

The a. m. Control Units are used in conjunction with various types of manual operated actuators (illuminated or not), lens caps and mounting devices (see attached).

Based on decision of the applicant, some of the tests of Test Sequences I, II, III, may have been performed under more severe conditions than required in the standard. In case of, relevant values for equipment under test are stated in test report.

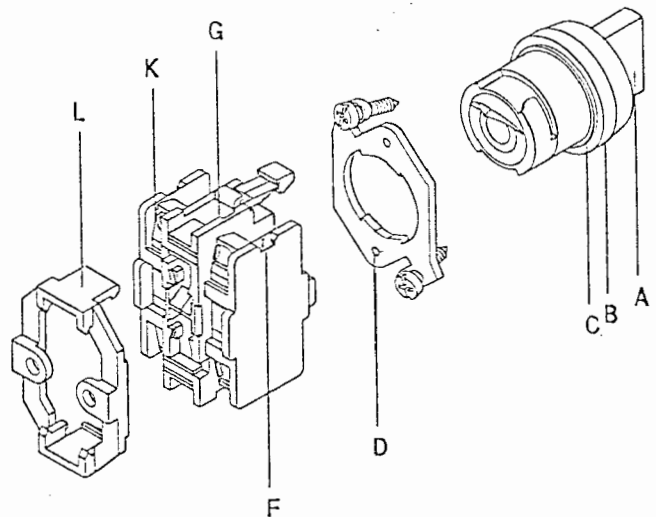
Description

Panel mounting, exploded view



- A Actuator or lens cap.
 B Metal ring or plastic ring. Part of actuator or lens cap.
 C Sealing ring. Part of actuator or lens cap.
 E Mounting plate to fix actuators and lens caps.
 F Connector to fix actuators and lens caps and for snap on contact blocks and lamp holders.

Base and DIN-rail mounting, exploded view



- F Function numbers 1, 2 or 3, 4.
 G Terminal marking for lamp terminals X1, X2.
 H Actuator insert P642 for use of a contact in the centre position of the connector
 K Contact block with or without lamp base, lamp holder.
 L Base for screw mounting or 35mm DIN-rail mounting.

Mounting

Insert actuator or lens caps through panel fixing hole (thickness 1,5 to 6mm) and then fit it with the connector or mounting plate by twisting anti-clockwise. With both Pozidriv-screws of the mounting element the actuator or lens cap is fixed twist and vibration resistant. Contact blocks and lamp holders can be snapped on within seconds without any tools to the connector (at front mounting) or onto the base (at base or DIN-rail mounting). As easy as snapping on is changing and retrofitting of contact blocks and lamp holders.

At one actuator you can snap on contact blocks within max. 6 contacts and 1 lamp holder.

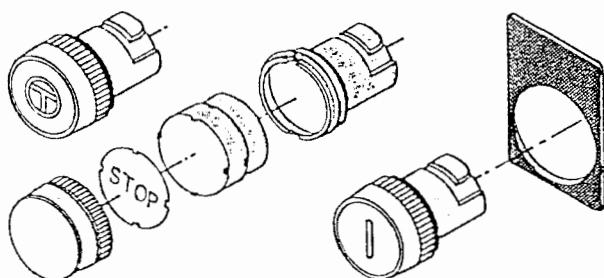
The buttons of the actuators (push buttons, mushroom head buttons etc.) and lenses of the lens caps are changeable from front. They can be rotated in 90° steps as occasion demands. Legend plates and name-plate discs can also be mounted and changed from front and rotated in 90° steps.

Markings

There are four possibilities for signing actuators and lens caps:

1. Label holder P595-1 with legend plate BK4, for all units without mushroom head push button BS4P14P and BS4P34P (Ø 70mm) and mushroom head push-and-pull buttons BS4P44 and BS4P44S3.
2. Nameplate disc B4-9544, for lens caps with low lens B4RF and illuminated actuators B4DLB and BS4DLB.
3. Legend plate B4, for all units without mushroom head push button BS4P14P and BS4P34P (Ø 70mm) and mushroom head push-and-pull button BS4P44.
4. Engraving, for push buttons B4D, BS4D, B4DL, BS4DL and lens caps B4R and B4RH.

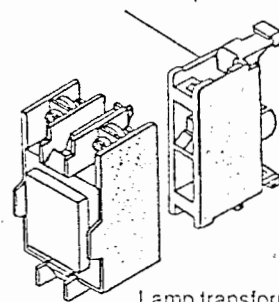
Further informations see page 10/10 "Markings".



Connection

Contact blocks and lamp holders are marked with function numbers for terminal markings according to DIN EN 50013, afterwards sequence numbers can be fixed according to number and arrangement of the contact blocks. Timesaving wiring of 2 wires per terminal according to open terminals with Pozidriv-screws.

Lamp holder or Contact block with lamp holder



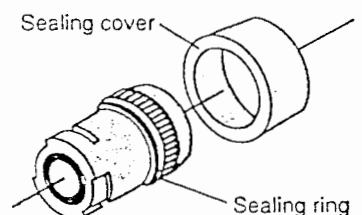
Lamp transformer

Lamp transformer

Beside lamp holders with lamp transformer B4FST we also offer a lamp transformer B4ST with two spring contacts instead of the lamp socket. Very easy you can snap on the transformer and the contact is given. The lamp transformer B4ST can be used with contact blocks for illuminators (for direct connection) and lamp holders for direct connection.

Sealing cover

The sealing ring of the actuator or the lens cap has to be removed to put over the sealing cover.



Actuators for switches

E 3397-20

for panel mounting of contact blocks use for fixing connector B3M, for base mounting use mounting plate B4UP

Actuator Colour	Metal Ring	Weight approx. kg	Plastic Ring black	Weight approx. kg
	Type		Type	

Rotary Knob with 2 switch positions

Switch sequence 0-I	maintained, switching angle 60°			
Rotary Knob black	B4KN2	0,018	BS4KN2	0,016
Swing Knob black	B4KRN2	0,018	BS4KRN2	0,016
Switch sequence 0-I	right spring return to center, switching angle 60°			
Rotary Knob black	B4KN8	0,018	BS4KN8	0,016
Swing Knob black	B4KRN8	0,018	BS4KRN8	0,016

Rotary Knobs and Swing Knobs with 3 switch positions

Switch sequence I-0-II	spring return both to center, switching angle 2 x 60°			
Rotary Knob black	B4KN1	0,018	BS4KN1	0,016
Swing Knob black	B4KRN1	0,018	BS4KRN1	0,016
Switch sequence I-0-II	maintained, switching angle 2 x 60°			
Rotary Knob black	B4KN3	0,018	BS4KN3	0,016
Swing Knob black	B4KRN3	0,018	BS4KRN3	0,016
Switch sequence I-0-II	left maintained, right spring return to center, switching angle 2 x 60°			
Rotary Knob black	B4KN6	0,018	BS4KN6	0,016
Switch sequence I-0-II	left spring return to center, right maintained, switching angle 2 x 60°			
Rotary Knob black	B4KN7	0,018	BS4KN7	0,016

Rotary Knobs illuminated, with 2 switch positions

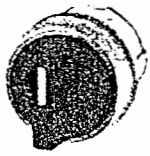
Switch sequence 0-I	maintained, switching angle 90°			
Rotary Knob clear, illuminable	B4KL2		BS4KL2	0,016

Rotary Knobs and Swing Knobs illuminated, with 3 switch positions

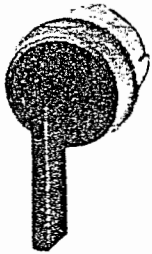
Switch sequence I-0-II	spring return both to center, switching angle 2 x 60°			
Rotary Knob clear, illuminable	B4KL1		BS4KL1	0,016
Swing Knob clear, illuminable	B4KRL1		BS4KRL1	
Switch sequence I-0-II	maintained, switching angle 2 x 60°			
Rotary Knob clear, illuminable	B4KL3		BS4KL3	0,016
Swing Knob clear, illuminable	B4KRL3		BS4KRL3	
Switch sequence I-0-II	left maintained, right spring return to center, switching angle 2 x 60°			
Rotary Knob clear, illuminable	B4KL6		BS4KL6	0,016

Toggle

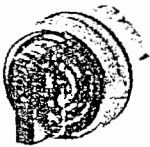
black, lever white	B4E	0,015	BS4E	0,013
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B4KN2



B4KRN3



B4KL2



B4KRL3



B4E

Actuators

for panel mounting of contact blocks use for fixing connector B3M, for base mounting use mounting plate B4UP

Actuator Colour	Symbol	Metal Ring	Weight approx.	Plastic Ring black	Weight approx.
		Type	kg	Type	kg
Flush Head ¹⁾					
black		B4D SW	0,012	BS4D SW	0,010
black	→	B4D SW-PF		BS4D SW-PF	
red		B4D RT		BS4D RT	
red	0	B4D RT-0		BS4D RT-0	
green		B4D GN		BS4D GN	
green	I	B4D GN-I		BS4D GN-I	
green	II	B4D GN-II		BS4D GN-II	
green	→	B4D GN-PF		BS4D GN-PF	
yellow		B4D GE		BS4D GE	
blue		B4D BL		BS4D BL	
Illuminated Flush Head					
with flat head ¹⁾					
clear		B4DL KL	0,012	BS4DL KL	0,010
white		B4DL WS		BS4DL WS	
red		B4DL RT		BS4DL RT	
green		B4DL GN		BS4DL GN	
yellow		B4DL GE		BS4DL GE	
blue		B4DL BL		BS4DL BL	
with flat head for legend plate B4-9544-...					
clear		B4DLB KL	0,012	BS4DLB KL	0,010
red		B4DLB RT		BS4DLB RT	
green		B4DLB GN		BS4DLB GN	
Mushroom Head					
Head Ø28mm					
black		B4P1 SW	0,015	BS4P1 SW	0,013
red		B4P1 RT		BS4P1 RT	
red	0	B4P1 RT-0		BS4P1 RT-0	
green		B4P1 GN		BS4P1 GN	
yellow		B4P1 GE		BS4P1 GE	
blue		B4P1 BL		BS4P1 BL	
Head Ø40mm					
red	0	B4P14 RT-0	0,018	BS4P14 RT-0	0,016
Head Ø70mm					
red		BS4P14P RT	0,058	BS4P14P RT	0,058
grey		BS4P14P GR		BS4P14P GR	
Head Ø28mm, lockable in pressed position, with position indicator					
black		B4P2 SW	0,015	BS4P2 SW	0,013
red		B4P2 RT		BS4P2 RT	
green		B4P2 GN		BS4P2 GN	
yellow		B4P2 GE		BS4P2 GE	
blue		B4P2 BL		BS4P2 BL	
EMERGENCY-STOP Mushroom Head Push-and-Pull Button ²⁾					
Head Ø40mm, latch and release by snap (trigger) action					
red		BS4P44	-	BS4P44	0,024
Head Ø40mm with key, with latch in pressed position, release by key ³⁾					
red		BS4P44S3	-	BS4P44S3	0,046
EMERGENCY-STOP Push Button ²⁾					
Head Ø28mm, with latch in pressed position, release by turning					
red		B4P3 RT	0,015	BS4P3 RT	0,013
red	0	B4P3 RT-0		BS4P3 RT-0	
Head Ø40mm, with latch in pressed position, release by turning					
red	0	B4P34 RT-0	0,018	BS4P34 RT-0	0,016
Head Ø70mm, with latch in pressed position, release by turning					
red		BS4P34P RT	-	BS4P34P RT	0,058



B4D



B4DL



B4P2



BS4P44S3



B4P3

1) Engraved marking available, see page 10/10. Sealing cover against coarse contamination see page 10/9

2) Yellow contrast label see page 10/10

3) Keys included. Spare key see page 10/9

Actuators for key operated switches

E 3397-20

for panel mounting of contact blocks use for fixing connector B3M, for base mounting use mounting plate B4UP

Key withdrawable in position	Metal Ring Type	Weight approx. kg	Plastic Ring black Type	Weight approx. kg
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Key Operated Rotary Switch ¹⁾²⁾ 2 switch positions with Lock Ronis 455 ³⁾

Switch sequence 0-I	Diagram	Description	Weight approx. kg	Weight approx. kg	
0 I 0 + I		maintained, switching angle 60°	B4SAR 0 B4SAR 1 B4SAR 01	0,042 BS4SAR 0 BS4SAR 1 BS4SAR 01	0,040

Switch sequence 0-I	Diagram	Description	Weight approx. kg	Weight approx. kg	
0		spring return to center, switching angle 60°	B4SAT 0	BS4SAT 0	0,040

Key Operated Rotary Switch ¹⁾²⁾ 3 switch positions with Lock Ronis 455 ³⁾

Switch sequence I-0-II	Diagram	Description	Weight approx. kg	Weight approx. kg	
0 I + 0 + II		maintained, switching angle 2 x 60°	B4SARR 0 B4SARR 102	BS4SARR 0 BS4SARR 102	0,040

Switch sequence I-0-II	Diagram	Description	Weight approx. kg	Weight approx. kg	
0 + II		right maintained, left spring return to center, switching angle 2 x 60°	B4SATR 02	BS4SATR 02	0,040

Switch sequence I-0-II	Diagram	Description	Weight approx. kg	Weight approx. kg	
0		spring return both to center, switching angle 2 x 60°	B4SATT 0	BS4SATT 0	0,040



B4SAR

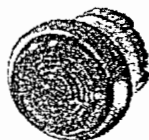
Lens Caps

for panel mounting of lamp holders use for fixing connector B3M, for base mounting use mounting plate B4UP

Colour	Metal Ring Type	Weight approx. kg	Plastic Lens markings see page 10/10 Type	Weight approx. kg
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Low Lens ⁴⁾

red green yellow	B4R RT B4R GN B4R GE	0,011	B4RF RT B4RF GN B4RF GE	0,009
blue clear white	B4R BL B4R KL B4R WS		B4RF BL - B4RF WS	



B4R

High Lens ⁴⁾

red green yellow	B4RH RT B4RH GN B4RH GE	0,011	- - -	-
blue white	B4RH BL B4RH WS		- -	

Connector

for panel mounting of contact blocks and lamp holders

Specification	Type	Remarks	Weight kg
to fix actuators and lens caps	B3M (substitutes B4M)	to snap on contact blocks and lamp holders	0,013

Mounting plate

for base and DIN-rail mounting of contact blocks and lamp holders

Specification	Type	Remarks	Weight kg
to fix actuators and lens caps	B4UP	not necessary for enclosures BKLG	0,010

Actuator insert for third contact block (for panel mounting only)

Specification	Type	Remarks	Weight kg
for contact blocks in the centre pos. of the connector	P642	to insert into the actuator	0,001

1) 2 keys included. Spare key B4-R455 see page 10/9.



2) Special versions on request.

3) All key operated rotary switches also available with lock Ronis 786.

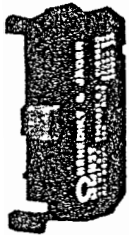
For ordering lock Ronis 786, replace "A" with "B", e. g.: lock Ronis 455...B4SAR 0, but lock Ronis 786...B4SBR 0.

4) Engraved marking available, see page 10/10.

Contact Blocks

Contacts	for panel mounting	for mounting in BKL G-enclosure base and DIN-rail mounting with base B4U	Wiring diagram	at actuators with 2 or 3 switch positions Rotary Knob  Swing Knob 	Weight approx. kg
	Type	Type			

Contact blocks



B3T10

1NC	B3T01	B4TU01			0,015
1NO	B3T10	B4TU10			0,015
1NO + 1NC	B3T10 + B3T01	B4TU11			0,022
2NC	2 x B3T01	B4TU02			0,022
2NO	2 x B3T10	B4TU20			0,022

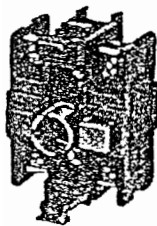


B3T01

Contact blocks for illuminated actuators

direct connection, socket BA9s, for lamps max. 2,6W (1,2W with B4DL and BS4DL)

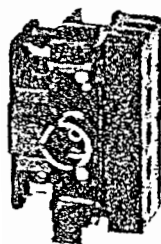
1NC	B3F + B3T01	B4TU01F			0,020
1NO	B3F + B3T10	B4TU10F			0,020
1NO + 1NC	B3F + B3T10 + B3T01	B4TU11F			0,027
2NC	B3F + 2 x B3T01	B4TU02F			0,027
2NO	B3F + 2 x B3T10	B4TU20F			0,027



B4TU11F

with series resistor, socket BA9s, for lamps 42V 1,2 W

1NC, Lamp holder for connection on 110-120V AC 220-240V AC	B4T01FW 110 B4T01FW 220	B4TU01FW 110 B4TU01FW 220			0,022
1NO, Lamp holder for connection on 110-120V AC 220-240V AC	B4T10FW 110 B4T10FW 220	B4TU10FW 110 B4TU10FW 220			0,022



B4T10FW 220

with series resistor, socket BA9s, for lamps 130V 2,6 W
not for use with B4DL and BS4DL

1NC Lamp holder for connection on 220-240V AC	B4T01FR 220	B4TU01FR 220			0,022
1NO Lamp holder for connection on 220-240V AC	B4T10FR 220	B4TU10FR 220			0,022

Specification	for panel mounting	for mounting in BKLG-enclosures, base and DIN-rail mounting w. base B4U	Wiring diagram	Weight approx. kg
	Type	Type		

Lamp holders

direct connection, socket BA9s, for lamps max. 2,6 W

For connection on
max. 415V AC and DC

B3F

B4FU



0,013

with diode and series resistor, socket BA9s, for lamps 42V 1,2 W

For connection on
110-120V AC
220-240V ACB4FW 110
B4FW 220B4FWU 110
B4FWU 220

0,017

with series resistor, socket BA9s, for lamps 130V max. 2,6W

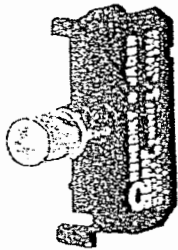
For connection on
220-240V AC

B4FR 220

B4FRU 220



0,017



B3F

Test item particulars:

- method of operation ... : MANUAL
- switching positions ... : 0 or 0,I or 0,I,II
- number of circuits ... : 1 (MAX 2 IN COMBINATION)
- kind of current .. : AC
- number and kind of contact elements ... : 1NO or 1NC
- rated frequency (Hz) ... : 50-60
- number of positions of main contacts ... : 2
- Rated and limiting values, main circuit ... : FOR AC1
- rated operational voltage U_e (V) ... : 690 (440)
- rated insulation voltage U_i (V) ... : 690 (440)
- rated impulse withstand voltage U_{imp} (kV) ... : 6
- conventional free air thermal current I_{th} (A) ... : 10
- conventional enclosed thermal current I_{the} (A) ... : 10
- rated operational current I_e (A) ... : 10
- rated uninterrupted current I_u (A) ... : 10
- utilization category ... : AC1, AC15
- Short circuit characteristic ... :
- rated conditional short-circuit current (kA)... : 1
- Co-ordination of short-circuit protective devices ...:
- kind of protective device ... : FUSE

Possible test case verdicts:

- test case does not apply to the test object ... : N(A.)
- test object does meet the requirement ... : P(ass)
- test object does not meet the requirement ... : F(ail)

General remarks:

„(see remark #)“ refers to a remark appended to the report.

„(see appended table)“ refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the item tested.

This report shall not be reproduced except in full without the written approval of the testing laboratory.

IEC 947-5-1 / EN 60947-5-1

Cl.	Requirement - Test	Result	Verdict
5.2	MARKING		P
	Data shall be preferably marked on the equipment:		P
a	- manufacturer's name or trade mark	BENEJIKT & JÄGER	P
b	- type designation or serial number	B 3 x x x	P
	Data shall be included on the nameplate, or on the equipment, or in the manufacturer's published literature:		P
c	- number of this standard (EN 60947-5-1)	IEC 947-5-1	P
d	- rated operational voltages	240V / 690V	P
e	- utilization category and rated operational currents at the rated operational voltages of the control circuit device	AC15 6A, 240V AC1 10A, 690V	P
f	- rated insulation voltage	690V	P
g	- rated impulse withstand voltage	6kV	P
h	- switching overvoltages, if applicable	≤ 6kV	P
i	- IP code, in case of enclosed control circuit device		N
j	- pollution degree	3	P
k	- type and maximum ratings of short-circuit protective device	FUSE gL (gG) 25A	P
l	- conditional short-circuit current if less than 1000A		N
m	- suitability for isolation, where applicable		N

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
7.1	CONSTRUCTION		P
7.1.1	Materials		P
7.1.2	Current-carrying parts and their connection		P
7.1.3	CLEARANCES		P
	Uimp is given as:	6kV	P
	- Max. value of rated operational voltage to earth	600V	-
	- Nominal voltage of supply system	400/690V	-
	- overvoltage category	III	-
	- Pollution degree	3	-
	- Field in- or homogeneous	INHOMOGENEOUS	-
	- Minimum clearances (mm)	5,5	-
	- Measured clearances (mm)	≥ 8	P
	Uimp isn't given		N
	- Rated insulation voltage Ui (V)		-
	- Ie		-
	- Minimum clearances L-L / L-A (mm)		-
	- Measured clearances L-L / L-A (mm)		-
	CREEPAGE DISTANCES		P
	Uimp is given as:	6kV	P
	- Material group / CTI	MIN. III b	-
	- Minimum creepage distances (mm)	10	-
	- Measured creepage distances (mm)	≥ 10	P
	Uimp isn't given		N
	- Material Column a or b		-
	- Minimum creepage distances (mm)		-
	- Measured creepage distances (mm)		-
7.1.4	Actuator		P
7.1.4.1	Insulation		P
7.1.4.2	Direction		P
7.1.4.3	Actuating force (or moment)		P
7.1.4.4	Limitation of rotation (of rotary switch)		P
7.1.4.5	Emergency stop		P

IEC 947-5-1 / EN 60947-5-1

Cl.	Requirement - Test	Result	Verdict
7.1.5	Indication of the contact position		P
7.1.5.1	Indication means	POSITION OF ACTUATOR	P
7.1.5.2	Indication by the actuator		P
7.1.6	Conditions for control switches suitable for isolation		N

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I B3F LAMP 130V, 2,6W		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	75 x 50 x 70	-
	material of enclosure	PLASTIC	-
	NO contacts , test conditions: LAMP TERMINALS X1, X2		P
	- rated operational current I _e (A)	—	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NO terminals <=.....6,5.....K	MAX. 32	P
	NC-contacts, test conditions:		N
	- rated operational current I _e (A)		-
	- cable cross-section (mm ²)		-
	temperature-rise of NC terminals <=.....K		-
	coils and electromagnets, test conditions:		-
	- rated control supply voltage U _s (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		-
8.3.3.2	Operating limits		N
8.3.3.2.1	Power-operated equipment		N
	Ambient temperature		-
	rated control supply voltage U _s (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage U _s		-
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		-
8.3.3.4	Test of dielectric properties, impulse withstand voltage (U _{imp} indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test U _{imp} auxiliary circuits (kV)	7,4/5,3	P

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I 2 x B 3 T 0 1		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	120 x 70 x 50	-
	material of enclosure	PLASTIC	-
	NO -contacts, test conditions:		P
	- rated operational current I _e (A)	10	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NO terminals <=..... 6,5K	MAX. 21	P
	NC-contacts, test conditions:		N
	- rated operational current I _e (A)		-
	- cable cross-section (mm ²)		-
	temperature-rise of NC terminals <=.....K		-
	coils and electromagnets, test conditions:		-
	- rated control supply voltage U _s (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		-
8.3.3.2	Operating limits		N
8.3.3.2.1	Power-operated equipment		N
	Ambient temperature		-
	rated control supply voltage U _s (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage U _s		-
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		-
8.3.3.4	Test of dielectric properties, impulse withstand voltage (U _{imp} indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test U _{imp} auxiliary circuits (kV)	7,4 / 5,3	P

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I B3F + 2B3T01		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	120 x 70 x 50	-
	material of enclosure	PLASTIC	-
	NO -contacts, test conditions: B3T01		P
	- rated operational current I _e (A)	10	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NO terminals <=..... 6,5K	MAX. 39	P
	NC -contacts, test conditions: LAMP TERMINALS X1, X2		P
	- rated operational current I _e (A)	—	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NC terminals <=... 6,5 ...K	MAX. 40	P
	coils and electromagnets, test conditions:		N
	- rated control supply voltage U _s (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		-
8.3.3.2	Operating limits		N
8.3.3.2.1	Power-operated equipment		N
	Ambient temperature		-
	rated control supply voltage U _s (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage U _s		-
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		-
8.3.3.4	Test of dielectric properties, impulse withstand voltage (U _{imp} indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test U _{imp} auxiliary circuits (kV)	7,4 / 5,3	P

IEC 947-5-1 / EN 60947-5-1

Cl.	Requirement - Test	Result	Verdict
	Test of dielectric properties, dielectric withstand voltage (Uimp not indicated):	/	N
	- rated insulation voltage (V)		-
	- control and auxiliary circuits, test voltage for 1 min (V)		
8.2.4	Mechanical properties of terminals		P
8.2.4.2	Mechanical strength of terminals		P
	maximum cross-sectional area of conductor (mm ²)	2,5	-
	diameter of thread (mm)	3,5	-
	torque (Nm)	0,8	-
	5 times on 2 separate clamping units		P
3.2.4.3	Testing for damage to and accidental loosening of conductor (flexion test)		P
	conductor of the smallest cross-sectional area (mm ²)	0,5	-
	number of conductor of the smallest cross section	2	-
	diameter of bushing hole (mm)	6,4	-
	height between the equipment and the platen (mm)	260	-
	mass at the conductor(s) (kg)	0,3	-
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		P
3.2.4.4	Pull-out test		P
	force (N)	30	-
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		P
	Flexion test		P
	conductor of the largest cross-sectional area (mm ²)	2,5	-
	number of conductor of the largest cross section	2	-
	diameter of bushing hole (mm)	9,5	-
	height between the equipment and the platen (mm)	279	-
	mass at the conductor(s) (kg)	0,7	-
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		P

IEC 947-5-1 / EN 60947-5-1

Cl.	Requirement - Test	Result		Verdict
	Pull-out test			P
	force (N)	50		-
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit			P
	flexion test			P
	conductor of the largest and smallest cross sectional area (mm ²)	2,5 1,5	1,5 0,5	-
	number of conductor of the smallest cross sectional, number of conductor of the largest cross sectional	1 1	1 1	-
	diameter of bushing hole (mm)	9,5/6,4	6,4	-
	height between the equipment and the platen (mm)	279/260	260	-
	mass at the conductor(s) (kg)	0,7/0,4	0,4/0,3	-
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit			P
	Pull-out test			P
	force (N)	50/40	40/30	-
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit			P

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
	Test sequence II		P
8.3.3.5	Making and breaking capacity		P
	utilization category	AC1 IEC 947-4-1	-
	rated operational voltage U_e (V)	690	-
	rated operational current I_e (A) or power (kW)	10	-
	Conditions, make/break operations AC1 only:		P
	- test voltage $U/U_e = 1,05$ (V) MIN. 724,5	L1: 740 L2: L3:	-
	- test current $I/I_e =$ (A) MIN. 15	L1: 16 L2: L3:	-
	power factor / time constant	L1: 0,85 L2: L3:	-
	on-time (ms)	160	-
	off-time (s)	9,8	-
	number of make/break operations	50	P
	Behaviour and condition during and after the test		P
	- no permanent arcing		P
	- no flash-over between poles		P
	- no blowing of the fusible element in the earth circuit		P
	- no welding of the contacts		P
	- the contacts shall operate when the contactor or starter CONTROL UNIT is switched by the applicable method of control		P

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
8.3.3.6	Operational performance capability		P
	utilization category	AC1 IEC 947-4-1	-
	rated operational voltage Ue (V)	690	-
	rated operational current Ie (A) or power (kW)	10	-
	Conditions, make/break operations AC1 only:		P
	- test voltage U/Ue = 1,05 (V) MIN. 729,5	L1: 740 L2: L3:	-
	- test current I/Ie = (A) MIN. 10	L1: 16 L2: L3:	-
	power factor / time constant	L1: 0,85 L2: L3:	-
	on-time (ms)	160	-
	off-time (s)	2,3	-
	number of make/break operations	6000	P
8.3.3.6.6	Behaviour and condition during and after the test		P
	- no permanent arcing		P
	- no flash-over between poles		P
	- no blowing of the fusible element in the earth circuit		P
	- no welding of the contacts		P
	- the contacts shall operate when the contactor or starter CONTROL UNIT is switched by the applicable method of control		P
	dielectric verification		P
	test voltage (2xUe + 1000V) for 1min (V)	2380	P

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
8.3.3.5.3	Making and breaking capacities of switching elements under abnormal conditions		P
	utilization category	AC15	-
	rated operational voltage Ue (V)	240	-
	rated operational current Ie (A) or power (kW)	6	-
	Conditions, make/break operations:		P
	- test voltage U/Ue = 1,1 (V) MIN. 264	L1: 266 L2: L3:	-
	power factor / time constant	L1: 0,29 L2: L3:	-
	- make operations test current I/Ie = 1,0 (A) MIN. 60	L1: 61 L2: L3:	-
	- break operations test current I/Ie = 1,0 (A) MIN. 60	L1: 61 L2: L3:	-
	on-time (ms)	300	-
	operating cycles per minute	6	-
	number of operating cycles	10	P
	Behaviour and condition during and after the test		P
	- no electrical or mechanical failures		P
	- no contact welding or prolonged arcing		P
	- no blowing of the fusible element in the earth circuit		P
	dielectric verification		P
	dielectric test voltage (V)	2000	P

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Cl.	Requirement - Test	Result	Verdict
	utilization category		-
	rated operational voltage U_e (V)		-
	rated operational current I_e (A) or power (kW)		-
	Conditions, make/break operations:		
	- test voltage $U/U_e = 1,1$ (V)	L1: L2: L3:	-
	power factor / time constant	L1: L2: L3:	-
	- make operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	- break operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	on-time (ms)		-
	operating cycles per minute		-
	number of operating cycles		
	Behaviour and condition during and after the test		
	- no electrical or mechanical failures		
	- no contact welding or prolonged arcing		
	- no blowing of the fusible element in the earth circuit		
	dielectric verification		
	dielectric test voltage (V)		

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Cl.	Requirement - Test	Result	Verdict
	Test sequence III		P
8.3.3.5.2	Making and breaking capacities of switching elements under normal conditions		P
	utilization category	AC15	-
	rated operational voltage U_e (V)	240	-
	rated operational current I_e (A) or power (kW)	6	-
	Conditions, make/break operations:		P
	- test voltage $U/U_e = 1,1$ (V) MIN. 264 V *50 OPERATIONS AT 266 V 6000 — u — 242 V	L1: 266 / 242 * L2: L3:	-
	power factor / time constant	L1: 0,29 L2: L3:	-
	- make operations test current $I/I_e = \dots$ (A) MIN. 60	L1: 61 L2: L3:	-
	- break operations test current $I/I_e = \dots$ (A) MIN. 6	L1: 6,5 L2: L3:	-
	on-time (ms) *50 OPER. / **6000 OPERATIONS.	160* / 300**	-
	operating cycles per minute	24	-
	number of operating cycles	6050	P
	Behaviour and condition during and after the test		P
	- no electrical or mechanical failures		P
	- no contact welding or prolonged arcing		P
	- no blowing of the fusible element in the earth circuit		P
	dielectric verification		P
	dielectric test voltage (V)	2000	P

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Cl.	Requirement - Test	Result	Verdict
	utilization category		-
	rated operational voltage U_e (V)		-
	rated operational current I_e (A) or power (kW)		-
	Conditions, make/break operations:		
	- test voltage $U/U_e = 1,1$ (V)	L1: L2: L3:	-
	power factor / time constant	L1: L2: L3:	-
	- make operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	- break operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	on-time (ms)		-
	operating cycles per minute		-
	number of operating cycles		
	Behaviour and condition during and after the test		
	- no electrical or mechanical failures		
	- no contact welding or prolonged arcing		
	- no blowing of the fusible element in the earth circuit		
	dielectric verification		
	dielectric test voltage (V)		

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
	Test sequence IV		P
8.3.4	Performance under conditional short-circuit current		P
	type of SCPD	SIEMENS	
	ratings of SCPD	DIAZED gL/gG	
	ratings of SCPD	25A/500V	-
	prospective current (kA)	1	-
	test voltage U/U _e = 1,1 (V)	L1: 277 L2: 275 L3: 276	
	r.m.s. test current (A)	L1: 1010 L2: 1050 L3: 1020	-
	power factor (max. 0,7)	0,7	-
	first making operation to closed switching elements	I_D [A] I^2t_e [A ² s]	
		L1: 655 12,6 · 10 ³	
		L2: 890 28,8 · 10 ³	
		L3: 1080 29,9 · 10 ³	P
	time intervall between test (min. 3min)		-
	second making operation to closed switching elements	I_D [A] I^2t_e [A ² s]	
		L1: 1035 30,9 · 10 ³	
		L2: 975 25,3 · 10 ³	
		L3: 595 9,9 · 10 ³	P
	time intervall between test (min. 3min)		-
	third making operation to closed switching elements	I_D [A] I^2t_e [A ² s]	
		L1: 840 25,1 · 10 ³	
		L2: 415 7,1 · 10 ³	
		L3: 1180 31,8 · 10 ³	P
	Behaviour of the equipment during the test		P
	switching elements open by the normal actuating system		P
	dielectric verification		P
	dielectric test voltage (V)	2000	P

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Cl.	Requirement - Test	Result	Verdict
7.1.11	Degree of protection of enclosed equipment		N
	Degree of protection	IP	
	Test for first characteristic		
	Test for first numeral 1		
	Test for first numeral 2		
	Test for first numeral 3		
	Test for first numeral 4		
	Test for first numeral 5		
	Test for first numeral 6		

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Cl.	Requirement - Test	Result	Verdict
	Test for second characteristic		N
	Test for second numeral 1		
	Test for second numeral 2		
	Test for second numeral 3		
	Test for second numeral 4		
	Test for second numeral 5		
	Test for second numeral 6		
	Test for second numeral 7		
	Test for second numeral 8		

IEC 947-5-1 / EN 60947-5-1

Cl.	Requirement - Test	Result	Verdict	
TABLE: temperature rise measurements			P	
temperature rise dT of part:	I (A)	U (V)	dT (K)	required dT (K)
B3Txx (2 UNITS)	1	10	21	65
	2	10	18	65
	3	10	20	65
	4	10	20	65
B3F				
LAMP 130V, 2.6W	X1	130	23	65
	X2	130	32	65
LENS BAR			48	50
B3F + 2 B3T01 (10A)	11	10	39	65
LAMP LOAD 1.7W	X1		40	65
	X2		35	65
LENS OF PUSH BUTTON BADLB			39	40

Remarks

[Empty rectangular box for remarks]

TEST REPORT
IEC 947-5-1 / EN60947-5-1
Low-voltage switchgear and controlgear
Part 5-1: Control circuit devices and switching elements;
Electromechanical control circuit devices

Report reference No. ... : **E 3397-21**

Compiled by (+signature) ... : F. Rosenberger *F. Rosenberger*

Approved by (+signature) ... : H. Hauer *H. Hauer*

Date of issue ... : 1995-12-07

Testing laboratory ... : BFPZ - Arsenal

Address ... : Faradaygasse 3, A - 1031 Vienna, AUSTRIA

Testing location ... : see above

Applicant ... : Benedikt & Jäger

Address ... : Hofmühlgasse 4, A - 1061 Vienna, AUSTRIA

Standard ... : IEC 947-5-1:1990

Test Report Form No. ... : 947-5-1A

TRF date ... : 95-09

TRF originator ... : OVE

Copyright blank test report ... : OVE

Test procedure ... : CB-scheme, CCA-scheme

Procedure deviation ... : None

Non-standard test method ... : None

Type of test item ... : **CONTROL UNIT**

Trademark ... : Benedikt & Jäger

Model/type reference ... : **B4xxxxxxx** see page 2

Manufacturer ... : Benedikt & Jäger

Rating ... : see below

Copy of marking plate

BENEDIKT & JÄGER Ω

B4xxxxxxx

IEC 947-5-1 AC15 6A 240V

IEC 947-4-1 AC1 10A 500V

TYPE REFERENCE CODE

B	4	x	x	x	x	x	x	x		
										110 : For supply voltage 110 - 120 V (optional)
										220 : For supply voltage 220 - 240 V (optional)
										W : With series resistor for lamp 42 V; 1,2 W (optional)
										R : With series resistor for lamp 130 V; 2,6 W (optional)
										F : Lampholder (optional) ¹⁾
										0...2 : Number of NC contacts (optional)
										0...2 : Number of NO contacts (optional)
										U : For rail mounting (optional)
										T : Contact block (optional)

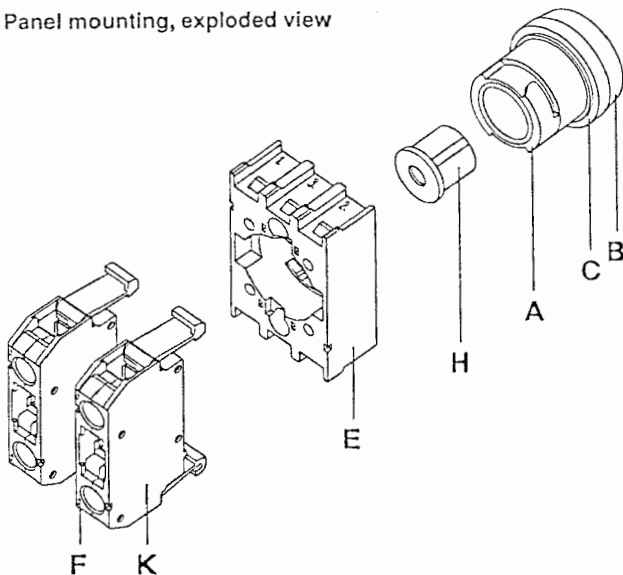
¹⁾ B 4 x x x x F only up to 440 V
Lamp max. 1,7 W

The a. m. Control Units are used in conjunction with various types of manual operated actuators (illuminated or not), lens caps and mounting devices (see attached).

Based on decision of the applicant, some of the tests of Test Sequences I, II, III, may have been performed under more severe conditions than required in the standard. In case of, relevant values for equipment under test are stated in test report.

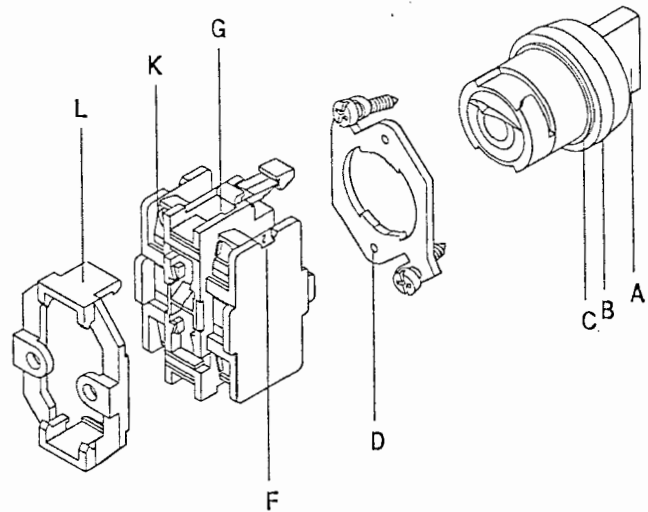
Description

Panel mounting, exploded view



- A Actuator or lens cap.
 B Metal ring or plastic ring. Part of actuator or lens cap.
 C Sealing ring. Part of actuator or lens cap.
 E Mounting plate to fix actuators and lens caps.
 F Connector to fix actuators and lens caps and for snap on contact blocks and lamp holders.

Base and DIN-rail mounting, exploded view



- F Function numbers 1, 2 or 3, 4.
 G Terminal marking for lamp terminals X1, X2.
 H Actuator insert P642 for use of a contact in the centre position of the connector
 K Contact block with or without lamp base, lamp holder.
 L Base for screw mounting or 35mm DIN-rail mounting.

Mounting

Insert actuator or lens caps through panel fixing hole (thickness 1,5 to 6mm) and then fit it with the connector or mounting plate by twisting anti-clockwise. With both Pozidriv-screws of the mounting element the actuator or lens cap is fixed twist and vibration resistant. Contact blocks and lamp holders can be snapped on within seconds without any tools to the connector (at front mounting) or onto the base (at base or DIN-rail mounting). As easy as snapping on is changing and retrofitting of contact blocks and lamp holders.

At one actuator you can snap on contact blocks within max. 6 contacts and 1 lamp holder.

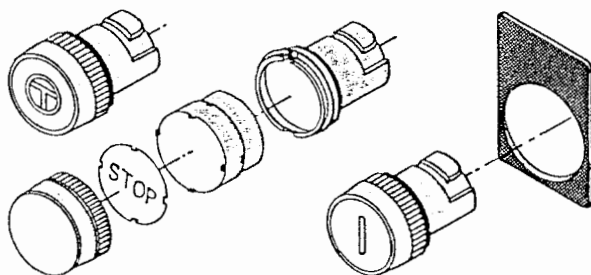
The buttons of the actuators (push buttons, mushroom head buttons etc.) and lenses of the lens caps are changeable from front. They can be rotated in 90° steps as occasion demands. Legend plates and name-plate discs can also be mounted and changed from front and rotated in 90° steps.

Markings

There are four possibilities for signing actuators and lens caps:

1. Label holder P595-1 with legend plate BK4, for all units without mushroom head push button BS4P14P and BS4P34P (Ø 70mm) and mushroom head push-and-pull buttons BS4P44 and BS4P44S3.
2. Nameplate disc B4-9544, for lens caps with low lens B4RF and illuminated actuators B4DLB and BS4DLB.
3. Legend plate B4, for all units without mushroom head push button BS4P14P and BS4P34P (Ø 70mm) and mushroom head push-and-pull button BS4P44.
4. Engraving, for push buttons B4D, BS4D, B4DL, BS4DL and lens caps B4R and B4RH.

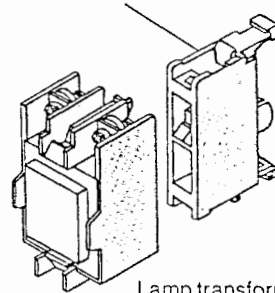
Further informations see page 10/10 "Markings".



Connection

Contact blocks and lamp holders are marked with function numbers for terminal markings according to DIN EN 50013, afterwards sequence numbers can be fixed according to number and arrangement of the contact blocks. Timesaving wiring of 2 wires per terminal according to open terminals with Pozidriv-screws.

Lamp holder or Contact block with lamp holder



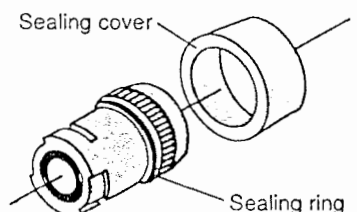
Lamp transformer

Lamp transformer

Beside lamp holders with lamp transformer B4FST we also offer a lamp transformer B4ST with two spring contacts instead of the lamp socket. Very easy you can snap on the transformer and the contact is given. The lamp transformer B4ST can be used with contact blocks for illuminators (for direct connection) and lamp holders for direct connection.

Sealing cover

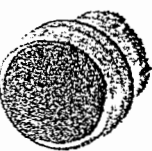
The sealing ring of the actuator or the lens cap has to be removed to put over the sealing cover.



Actuators

for panel mounting of contact blocks use for fixing connector B3M, for base mounting use mounting plate B4UP

Actuator Colour	Symbol	Metal Ring	Weight approx.	Plastic Ring black	Weight approx.
		Type	kg	Type	kg
Flush Head ¹⁾					
black		B4D SW	0,012	BS4D SW	0,010
black	→	B4D SW-PF		BS4D SW-PF	
red		B4D RT		BS4D RT	
red	0	B4D RT-0		BS4D RT-0	
green		B4D GN		BS4D GN	
green	I	B4D GN-I		BS4D GN-I	
green	II	B4D GN-II		BS4D GN-II	
green	→	B4D GN-PF		BS4D GN-PF	
yellow		B4D GE		BS4D GE	
blue		B4D BL		BS4D BL	
Illuminated Flush Head					
with flat head ¹⁾					
clear		B4DL KL	0,012	BS4DL KL	0,010
white		B4DL WS		BS4DL WS	
red		B4DL RT		BS4DL RT	
green		B4DL GN		BS4DL GN	
yellow		B4DL GE		BS4DL GE	
blue		B4DL BL		BS4DL BL	
with flat head for legend plate B4-9544-...					
clear		B4DLB KL	0,012	BS4DLB KL	0,010
red		B4DLB RT		BS4DLB RT	
green		B4DLB GN		BS4DLB GN	
Mushroom Head					
Head Ø28mm					
black		B4P1 SW	0,015	BS4P1 SW	0,013
red		B4P1 RT		BS4P1 RT	
red	0	B4P1 RT-0		BS4P1 RT-0	
green		B4P1 GN		BS4P1 GN	
yellow		B4P1 GE		BS4P1 GE	
blue		B4P1 BL		BS4P1 BL	
Head Ø40mm					
red	0	B4P14 RT-0	0,018	BS4P14 RT-0	0,016
Head Ø70mm					
red		BS4P14P RT	0,058	BS4P14P RT	0,058
grey		BS4P14P GR		BS4P14P GR	
Head Ø28mm, lockable in pressed position, with position indicator					
black		B4P2 SW	0,015	BS4P2 SW	0,013
red		B4P2 RT		BS4P2 RT	
green		B4P2 GN		BS4P2 GN	
yellow		B4P2 GE		BS4P2 GE	
blue		B4P2 BL		BS4P2 BL	
EMERGENCY-STOP Mushroom Head Push-and-Pull Button ²⁾					
Head Ø40mm, latch and release by snap (trigger) action					
red		BS4P44	-	BS4P44	0,024
Head Ø40mm with key, with latch in pressed position, release by key ³⁾					
red		BS4P44S3	-	BS4P44S3	0,046
EMERGENCY-STOP Push Button ²⁾					
Head Ø28mm, with latch in pressed position, release by turning					
red		B4P3 RT	0,015	BS4P3 RT	0,013
red	0	B4P3 RT-0		BS4P3 RT-0	
Head Ø40mm, with latch in pressed position, release by turning					
red	0	B4P34 RT-0	0,018	BS4P34 RT-0	0,016
Head Ø70mm, with latch in pressed position, release by turning					
red		BS4P34P RT	-	BS4P34P RT	0,058



B4D



B4DL



B4P2



BS4P44S3



B4P3


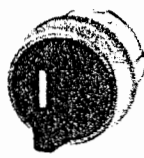









1) Engraved marking available, see page 10/10. Sealing cover against coarse contamination see page 10/9

2) Yellow contrast label see page 10/10

3) Keys included. Spare key see page 10/9

Actuators for switches

for panel mounting of contact blocks use for fixing connector B3M, for base mounting use mounting plate B4UP

Actuator Colour	Metal Ring	Weight approx. kg	Plastic Ring black	Weight approx. kg	
	Type		Type		
Rotary Knob with 2 switch positions					
Switch sequence 0-I  maintained, switching angle 60°					
 B4KN2	Rotary Knob black	B4KN2	0,018	BS4KN2	0,016
	Swing Knob black	B4KRN2	0,018	BS4KRN2	0,016
Switch sequence 0-II  right spring return to center, switching angle 60°					
	Rotary Knob black	B4KN8	0,018	BS4KN8	0,016
	Swing Knob black	B4KRN8	0,018	BS4KRN8	0,016
Rotary Knobs and Swing Knobs with 3 switch positions					
Switch sequence I-0-II  spring return both to center, switching angle 2 x 60°					
	Rotary Knob black	B4KN1	0,018	BS4KN1	0,016
	Swing Knob black	B4KRN1	0,018	BS4KRN1	0,016
Switch sequence I-0-I  maintained, switching angle 2 x 60°					
	Rotary Knob black	B4KN3	0,018	BS4KN3	0,016
	Swing Knob black	B4KRN3	0,018	BS4KRN3	0,016
Switch sequence I-0-II  left maintained, right spring return to center, switching angle 2 x 60°					
	Rotary Knob black	B4KN6	0,018	BS4KN6	0,016
Switch sequence I-0-I  left spring return to center, right maintained, switching angle 2 x 60°					
	Rotary Knob black	B4KN7	0,018	BS4KN7	0,016
Rotary Knobs illuminated, with 2 switch positions					
Switch sequence 0-I  maintained, switching angle 90°					
	Rotary Knob clear, illuminable	B4KL2		BS4KL2	0,016
Rotary Knobs and Swing Knobs illuminated, with 3 switch positions					
Switch sequence I-0-II  spring return both to center, switching angle 2 x 60°					
	Rotary Knob clear, illuminable	B4KL1		BS4KL1	0,016
	Swing Knob clear, illuminable	B4KRL1		BS4KRL1	
Switch sequence I-0-I  maintained, switching angle 2 x 60°					
	Rotary Knob clear, illuminable	B4KL3		BS4KL3	0,016
	Swing Knob clear, illuminable	B4KRL3		BS4KRL3	
Switch sequence I-0-II  left maintained, right spring return to center, switching angle 2 x 60°					
	Rotary Knob clear, illuminable	B4KL6		BS4KL6	0,016
Toggle					
	black, lever white	B4E	0,015	BS4E	0,013

Actuators for key operated switches

for panel mounting of contact blocks use for fixing connector B3M, for base mounting use mounting plate B4UP

Key withdrawable in position	Metal Ring	Weight approx. kg	Plastic Ring black	Weight approx. kg
	Type		Type	

Key Operated Rotary Switch ¹⁾²⁾ 2 switch positions with Lock Ronis 455 ³⁾

Switch sequence 0-I	maintained, switching angle 60°			
0	B4SAR 0	0,042	BS4SAR 0	0,040
I	B4SAR 1		BS4SAR 1	
0 + I	B4SAR 01		BS4SAR 01	

Switch sequence 0-I	spring return to center, switching angle 60°			
0	B4SAT 0	0,042	BS4SAT 0	0,040

Key Operated Rotary Switch ¹⁾²⁾ 3 switch positions with Lock Ronis 455 ³⁾

Switch sequence I-0-II	maintained, switching angle 2 x 60°			
0	B4SARR 0	0,042	BS4SARR 0	0,040
I + 0 + II	B4SARR 102		BS4SARR 102	

Switch sequence I-0-II	right maintained, left spring return to center, switching angle 2 x 60°			
0 + II	B4SATR 02	0,042	BS4SATR 02	0,040

Switch sequence I-0-II	spring return both to center, switching angle 2 x 60°			
0	B4SATT 0	0,042	BS4SATT 0	0,040



B4SAR

Lens Caps

for panel mounting of lamp holders use for fixing connector B3M, for base mounting use mounting plate B4UP

Colour	Metal Ring	Weight approx. kg	Plastic Lens markings see page 10/10	Weight approx. kg
	Type		Type	

Low Lens ⁴⁾

red	B4R RT	0,011	B4RF RT	0,009
green	B4R GN		B4RF GN	
yellow	B4R GE		B4RF GE	
blue	B4R BL		B4RF BL	
clear	B4R KL		B4RF WS	
white	B4R WS			

High Lens ⁴⁾

red	B4RH RT	0,011	-	
green	B4RH GN		-	
yellow	B4RH GE		-	
blue	B4RH BL		-	
white	B4RH WS		-	



B4R

Connector

for panel mounting of contact blocks and lamp holders

Specification	Type	Remarks	Weight kg
to fix actuators and lens caps	B3M (substitutes B4M)	to snap on contact blocks and lamp holders	0,013

Mounting plate

for base and DIN-rail mounting of contact blocks and lamp holders

Specification	Type	Remarks	Weight kg
to fix actuators and lens caps	B4UP	not necessary for enclosures BKLG	0,010

Actuator insert for third contact block (for panel mounting only)

Specification	Type	Remarks	Weight kg
for contact blocks in the centre pos. of the connector	P642	to insert into the actuator	0,001

1) 2 keys included. Spare key B4-R455 see page 10/9.



2) Special versions on request.

3) All key operated rotary switches also available with lock Ronis 786.


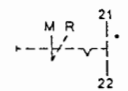

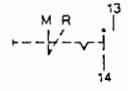

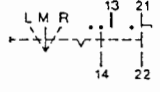

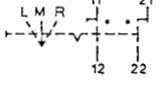

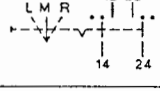
For ordering lock Ronis 786, replace "A" with "B", e. g.: lock Ronis 455...B4SAR 0, but lock Ronis 786...B4SBR 0.

4) Engraved marking available, see page 10/10.

Contact Blocks


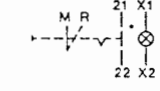

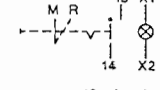

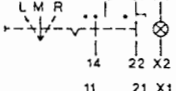

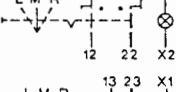

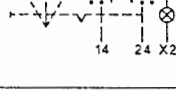
Contacts	for panel mounting	for mounting in BKLG-enclosure base and DIN-rail mounting with base B4U	Wiring diagram	at actuators with 2 or 3 switch positions Rotary Knob  Swing Knob 	Weight approx. kg
	Type	Type			

Contact blocks


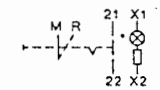

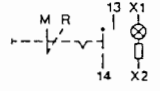
1NC	B3T01	B4TU01			0,015
1NO	B3T10	B4TU10			0,015
1NO + 1NC	B3T10 + B3T01	B4TU11			0,022
2NC	2 x B3T01	B4TU02			0,022
2NO	2 x B3T10	B4TU20			0,022

Contact blocks for illuminated actuators


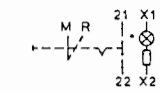

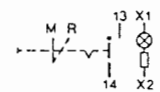
direct connection, socket BA9s, for lamps max. 2,6W (1,2W with B4DL and BS4DL)

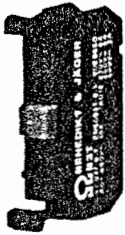
1NC	B3F + B3T01	B4TU01F			0,020
1NO	B3F + B3T10	B4TU10F			0,020
1NO + 1NC	B3F + B3T10 + B3T01	B4TU11F			0,027
2NC	B3F + 2 x B3T01	B4TU02F			0,027
2NO	B3F + 2 x B3T10	B4TU20F			0,027

with series resistor, socket BA9s, for lamps 42V 1,2 W

1NC, Lamp holder for connection on 110-120V AC 220-240V AC	B4T01FW 110 B4T01FW 220	B4TU01FW 110 B4TU01FW 220			0,022
1NO, Lamp holder for connection on 110-120V AC 220-240V AC	B4T10FW 110 B4T10FW 220	B4TU10FW 110 B4TU10FW 220			0,022

with series resistor, socket BA9s, for lamps 130V 2,6 W
not for use with B4DL and BS4DL

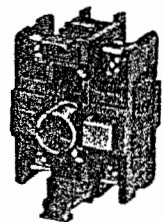
1NC Lamp holder for connection on 220-240V AC	B4T01FR 220	B4TU01FR 220			0,022
1NO Lamp holder for connection on 220-240V AC	B4T10FR 220	B4TU10FR 220			0,022



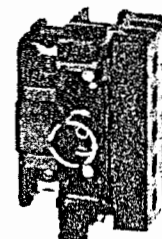
B3T10



B3T01



B4TU11F



B4T10FW 220

Lamp holders, Transformers, Lamps

Specification	for panel mounting	for mounting in BKLG-enclosures, base and DIN-rail mounting w. base B4U Type	Wiring diagram	Weight approx. kg
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Lamp holders

direct connection, socket BA9s, for lamps max. 2,6 W

For connection on
max. 415V AC and DC

B3F

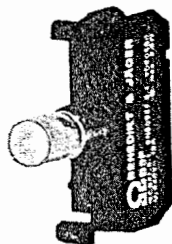
B4FU

0,013

with diode and series resistor, socket BA9s, for lamps 42V 1,2 W

For connection on
110-120V AC
220-240V ACB4FW 110
B4FW 220B4FWU 110
B4FWU 220

0,017



Test item particulars:

- method of operation ... : MANUAL
- switching positions ... : 0 or 0,I or 0,I,II
- number of circuits ... : 1 (MAX 2 IN COMBINATION)
- kind of current .. : AC
- number and kind of contact elements ... : INO or INC
- rated frequency (Hz) ... : 50-60
- number of positions of main contacts ... : 2
- Rated and limiting values, main circuit ... : FOR AC1
- rated operational voltage $U_e(V)$... : 690 (440)
- rated insulation voltage $U_i(V)$... : 690 (440)
- rated impulse withstand voltage $U_{imp}(kV)$... : 6
- conventional free air thermal current $I_{th}(A)$... : 10
- conventional enclosed thermal current $I_{the}(A)$... : 10
- rated operational current $I_e(A)$... : 10
- rated uninterrupted current $I_u(A)$... : 10
- utilization category ... : AC1, AC15
- Short circuit characteristic ... :
- rated conditional short-circuit current (kA)... : 1
- Co-ordination of short-circuit protective devices ...:
- kind of protective device ... : FUSE

Possible test case verdicts:

- test case does not apply to the test object ... : N(.A.)
- test object does meet the requirement ... : P(ass)
- test object does not meet the requirement ... : F(ail)

General remarks:

„(see remark #)“ refers to a remark appended to the report.

„(see appended table)“ refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The test results presented in this report relate only to the item tested.

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IEC 947-5-1 / EN 60947-5-1

Cl.	Requirement - Test	Result	Verdict
5.2	MARKING		P
	Data shall be preferably marked on the equipment:		P
a	- manufacturer's name or trade mark	BENEDIKT & JÄGER	P
b	- type designation or serial number	B4xxxxxxxx	P
	Data shall be included on the nameplate, or on the equipment, or in the manufacturer's published literature:		P
c	- number of this standard (EN 60947-5-1)	IEC 947-5-1	P
d	- rated operational voltages	240V / 500V	P
e	- utilization category and rated operational currents at the rated operational voltages of the control circuit device	AC15 6A, 240V AC1 10A, 500V	P
f	- rated insulation voltage	500	P
g	- rated impulse withstand voltage	6kV	P
h	- switching overvoltages, if applicable	≤ 6kV	P
i	- IP code, in case of enclosed control circuit device		N
j	- pollution degree	3	P
k	- type and maximum ratings of short-circuit protective device	FUSE gL (gG) 25A	P
l	- conditional short-circuit current if less than 1000A		N
m	- suitability for isolation, where applicable		N

IEC 947-5-1 / EN 60947-5-1			
Cl.	Requirement - Test	Result	Verdict
7.1	CONSTRUCTION		P
7.1.1	Materials		P
7.1.2	Current-carrying parts and their connection		P
7.1.3	CLEARANCES		P
	U _{imp} is given as:	6 kV	P
	- Max. value of rated operational voltage to earth	600 V	-
	- Nominal voltage of supply system	400/690 V	-
	- overvoltage category	III	-
	- Pollution degree	3	-
	- Field in- or homogeneous	INHOMOGENEOUS	-
	- Minimum clearances (mm)	5,5	-
	- Measured clearances (mm)	≥ 8	P
	U _{imp} isn't given		N
	- Rated insulation voltage U _i (V)		-
	- I _e		-
	- Minimum clearances L-L / L-A (mm)		-
	- Measured clearances L-L / L-A (mm)		-
	CREEPAGE DISTANCES		P
	U _{imp} is given as:	6 kV	P
	- Material group / CTI	MIN. III b	-
	- Minimum creepage distances (mm)	10	-
	- Measured creepage distances (mm)	≥ 10	P
	U _{imp} isn't given		N
	- Material Column a or b		-
	- Minimum creepage distances (mm)		-
	- Measured creepage distances (mm)		-
7.1.4	Actuator		P
7.1.4.1	Insulation		P
7.1.4.2	Direction		P
7.1.4.3	Actuating force (or moment)		P
7.1.4.4	Limitation of rotation (of rotary switch)		P
7.1.4.5	Emergency stop		P

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Cl.	Requirement - Test	Result	Verdict
7.1.5	Indication of the contact position		P
7.1.5.1	Indication means	POSITION OF ACTUATOR	P
7.1.5.2	Indication by the actuator		P
7.1.6	Conditions for control switches suitable for isolation		N

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Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I 2 x B4TU02F		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	120 x 70 x 50	-
	material of enclosure	PLASTIC	-
	NO contacts, test conditions:		P
	- rated operational current I _e (A)	10	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NO terminals <=... 65 ...K	MAX. 39	P
	NC contacts, test conditions: LAMP TERMINALS X1, X2		P
	- rated operational current I _e (A)	—	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NC terminals <=... 65 ...K	MAX. 40	P
	coils and electromagnets, test conditions:		N
	- rated control supply voltage U _s (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		-
8.3.3.2	Operating limits		N
8.3.3.2.1	Power-operated equipment		N
	Ambient temperature		-
	rated control supply voltage U _s (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage U _s		-
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		-
8.3.3.4	Test of dielectric properties, impulse withstand voltage (U _{imp} indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test U _{imp} auxiliary circuits (kV)	7,4 / 5,3	P

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Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I 2 x B4FU		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	120x70x50	-
	material of enclosure	PLASTIC	-
	NO contacts , test conditions: LAMP TERMINALS		P
	- rated operational current Ie (A)		-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NO terminals <=..... 6,5K	32	P
	NC-contacts, test conditions:		N
	- rated operational current Ie (A)		-
	- cable cross-section (mm ²)		-
	temperature-rise of NC terminals <=.....K		
	coils and electromagnets, test conditions:		
	- rated control supply voltage Us (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		
8.3.3.2	Operating limits		Z
8.3.3.2.1	Power-operated equipment		Z
	Ambient temperature		-
	rated control supply voltage Us (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage Us		
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		
8.3.3.4	Test of dielectric properties, impulse withstand voltage (Uimp indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test Uimp auxiliary circuits (kV)	7,4/5,3	P

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Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I 2 x B A T U O I F W		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	175 x 115 x 115	-
	material of enclosure	METAL	-
	NO ^S contacts, test conditions:		P
	- rated operational current Ie (A)	10	-
	- cable cross-section (mm²)	1,5	-
	temperature-rise of NO ^S terminals <=..... 65K	MAX. 30	P
	NC contacts, test conditions: LAMP TERMINALS X1, X2		P
	- rated operational current Ie (A)	—	-
	- cable cross-section (mm²)	1,5	-
	temperature-rise of NC terminals <=... 65 ...K	MAX. 59	P
	coils and electromagnets, test conditions:		N
	- rated control supply voltage Us (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		-
8.3.3.2	Operating limits		N
8.3.3.2.1	Power-operated equipment		N
	Ambient temperature		-
	rated control supply voltage Us (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage Us		
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		
8.3.3.4	Test of dielectric properties, impulse withstand voltage (Uimp indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test Uimp auxiliary circuits (kV)	7,4 / 5,3	P

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Cl.	Requirement - Test	Result	Verdict
8.3.1.a	Test sequence I 2 x BATUOIFR		P
8.3.3.3	Temperature-rise		P
	ambient temperature 10-40°C	23	-
	test enclosure W x H x D (mm x mm x mm)	175 x 115 x 115	-
	material of enclosure	METAL	-
	NO contacts, test conditions:		P
	- rated operational current I _e (A)	10	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NO terminals <=.....6,5.....K	MAX. 62	P
	NC contacts, test conditions: LAMP TERMINALS X1, X2		P
	- rated operational current I _e (A)	—	-
	- cable cross-section (mm ²)	1,5	-
	temperature-rise of NC terminals <=..6,5...K	62	P
	coils and electromagnets, test conditions:		N
	- rated control supply voltage U _s (V)		-
	- Class of insulating material		-
	temperature-rise of coil and electromagnets <=.....K		-
8.3.3.2	Operating limits		N
8.3.3.2.1	Power-operated equipment		N
	Ambient temperature		-
	rated control supply voltage U _s (V)		-
	Frequency (Hz)		-
	limits of close satisfactorily at any value between 85% and 110% of rated control supply voltage U _s		
	limits of drop out and open fully are 75% to 20% for a.c. and 75% to 10% for d.c.		
8.3.3.4	Test of dielectric properties, impulse withstand voltage (U _{imp} indicated):		P
	- verification by measurement of Clearances instead of testing		N
	- rated impulse withstand voltage (V)	6000	-
	- test U _{imp} auxiliary circuits (kV)	7,4/5,3	P

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Cl.	Requirement - Test	Result	Verdict
	Test of dielectric properties, dielectric withstand voltage (Uimp not indicated):	/	N
	- rated insulation voltage (V)		-
	- control and auxiliary circuits, test voltage for 1 min (V)		
8.2.4	Mechanical properties of terminals		P
8.2.4.2	Mechanical strength of terminals		P
	maximum cross-sectional area of conductor (mm ²)	2,5	-
	diameter of thread (mm)	3,5	-
	torque (Nm)	0,8	-
	5 times on 2 separate clamping units		P
3.2.4.3	Testing for damage to and accidental loosening of conductor (flexion test)		P
	conductor of the smallest cross-sectional area (mm ²)	0,5	-
	number of conductor of the smallest cross section	2	-
	diameter of bushing hole (mm)	6,4	-
	height between the equipment and the platen (mm)	260	-
	mass at the conductor(s) (kg)	0,3	-
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		P
3.2.4.4	Pull-out test		P
	force (N)	30	-
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit		P
	Flexion test		P
	conductor of the largest cross-sectional area (mm ²)	2,5	-
	number of conductor of the largest cross section	2	-
	diameter of bushing hole (mm)	9,5	-
	height between the equipment and the platen (mm)	279	-
	mass at the conductor(s) (kg)	0,7	-
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit		P

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Cl.	Requirement - Test	Result		Verdict
	Pull-out test			P
	force (N)	50		-
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit			P
	flexion test			P
	conductor of the largest and smallest cross sectional area (mm ²)	2,5 1,5	1,5 0,5	-
	number of conductor of the smallest cross sectional, number of conductor of the largest cross sectional	1 1	1 1	-
	diameter of bushing hole (mm)	9,5/6,4	6,4	-
	height between the equipment and the platen (mm)	279/260	260	-
	mass at the conductor(s) (kg)	0,7/0,4	0,4/0,3	-
	135 continuous revolutions: the conductor shall neither slip out of the terminal nor break near the clamping unit			P
	Pull-out test			P
	force (N)	50/40	40/30	-
	1 min, the conductor shall neither slip out of the terminal nor break near the clamping unit			P

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Cl.	Requirement - Test	Result	Verdict
	Test sequence II		P
8.3.3.5	Making and breaking capacity		P
	utilization category	AC1 IEC 947-4-1	-
	rated operational voltage Ue (V)	500	-
	rated operational current Ie (A) or power (kW)	10	-
	Conditions, make/break operations AC1 only:		P
	- test voltage U/Ue = 1,05 (V) MIN. 724,5	L1: 740 L2: L3:	-
	- test current I/Ie = (A) MIN. 15	L1: 16 L2: L3:	-
	power factor / time constant	L1: 0,85 L2: L3:	-
	on-time (ms)	160	-
	off-time (s)	9,8	-
	number of make/break operations	50	P
	Behaviour and condition during and after the test		P
	- no permanent arcing		P
	- no flash-over between poles		P
	- no blowing of the fusible element in the earth circuit		P
	- no welding of the contacts		P
	- the contacts shall operate when the contactor or starter CONTROL UNIT is switched by the applicable method of control		P

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Cl.	Requirement - Test	Result	Verdict
8.3.3.6	Operational performance capability		P
	utilization category	AC1 IEC 947-4-1	-
	rated operational voltage Ue (V)	500	-
	rated operational current Ie (A) or power (kVA)	10	-
	Conditions, make/break operations AC1 only:		P
	- test voltage U/Ue = 1,05 (V) MIN. 724,5	L1: 740 L2: L3:	-
	- test current I/Ie = (A) MIN. 10	L1: 16 L2: L3:	-
	power factor / time constant	L1: 0,85 L2: L3:	-
	on-time (ms)	160	-
	off-time (s)	2,3	-
	number of make/break operations	6000	P
8.3.3.6.6	Behaviour and condition during and after the test		P
	- no permanent arcing		P
	- no flash-over between poles		P
	- no blowing of the fusible element in the earth circuit		P
	- no welding of the contacts		P
	- the contacts shall operate when the contactor or starter is switched by the applicable method of control	CONTROL UNIT	P
	dielectric verification		P
	test voltage (2xUe + 1000V) for 1min (V)	2380	P

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Cl.	Requirement - Test	Result	Verdict
8.3.3.5.3	Making and breaking capacities of switching elements under abnormal conditions		P
	utilization category	AC15	-
	rated operational voltage U_e (V)	240	-
	rated operational current I_e (A) or power (kW)	6	-
	Conditions, make/break operations:		P
	- test voltage $U/U_e = 1,1$ (V) MIN. 264	L1: 266 L2: L3:	-
	power factor / time constant	L1: 0,29 L2: L3:	-
	- make operations test current $I/I_e = \dots 1,0 \dots$ (A) MIN. 60	L1: 61 L2: L3:	-
	- break operations test current $I/I_e = \dots 1,0 \dots$ (A) MIN. 60	L1: 61 L2: L3:	-
	on-time (ms)	300	-
	operating cycles per minute	6	-
	number of operating cycles	10	P
	Behaviour and condition during and after the test		P
	- no electrical or mechanical failures		P
	- no contact welding or prolonged arcing		P
	- no blowing of the fusible element in the earth circuit		P
	dielectric verification		P
	dielectric test voltage (V)	2000	P

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Cl.	Requirement - Test	Result	Verdict
	utilization category		-
	rated operational voltage U_e (V)		-
	rated operational current I_e (A) or power (kW)		-
	Conditions, make/break operations:		
	- test voltage $U/U_e = 1,1$ (V)	L1: L2: L3:	-
	power factor / time constant	L1: L2: L3:	-
	- make operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	- break operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	on-time (ms)		-
	operating cycles per minute		-
	number of operating cycles		
	Behaviour and condition during and after the test		
	- no electrical or mechanical failures		
	- no contact welding or prolonged arcing		
	- no blowing of the fusible element in the earth circuit		
	dielectric verification		
	dielectric test voltage (V)		

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Cl.	Requirement - Test	Result	Verdict
	Test sequence III		P
8.3.3.5.2	Making and breaking capacities of switching elements under normal conditions		P
	utilization category	AC15	-
	rated operational voltage U_e (V)	240	-
	rated operational current I_e (A) or power (kVA)	6	-
	Conditions, make/break operations:		P
	- test voltage $U/U_e = 1,1$ (V) MIN. 264V *50 OPERATIONS AT 266V 6000 — u — 242V	L1: 266/242* L2: L3:	-
	power factor / time constant	L1: 0,29 L2: L3:	-
	- make operations test current $I/I_e = \dots 10 \dots$ (A) MIN. 60	L1: 61 L2: L3:	-
	- break operations test current $I/I_e = \dots 1 \dots$ (A) MIN. 6	L1: 6,5 L2: L3:	-
	on-time (ms) *50 OPER. / **6000 OPERATIONS.	160* / 300**	-
	operating cycles per minute	24	-
	number of operating cycles	6050	P
	Behaviour and condition during and after the test		P
	- no electrical or mechanical failures		P
	- no contact welding or prolonged arcing		P
	- no blowing of the fusible element in the earth circuit		P
	dielectric verification		P
	dielectric test voltage (V)	2000	P

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Cl.	Requirement - Test	Result	Verdict
	utilization category		-
	rated operational voltage U_e (V)		-
	rated operational current I_e (A) or power (kW)		-
	Conditions, make/break operations:		
	- test voltage $U/U_e = 1,1$ (V)	L1: L2: L3:	-
	power factor / time constant	L1: L2: L3:	-
	- make operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	- break operations test current $I/I_e = \dots\dots\dots$ (A)	L1: L2: L3:	-
	on-time (ms)		-
	operating cycles per minute		-
	number of operating cycles		
	Behaviour and condition during and after the test		
	- no electrical or mechanical failures		
	- no contact welding or prolonged arcing		
	- no blowing of the fusible element in the earth circuit		
	dielectric verification		
	dielectric test voltage (V)		

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Cl.	Requirement - Test	Result	Verdict
	Test sequence IV		P
8.3.4	Performance under conditional short-circuit current		P
	type of SCPD	SIEMENS	
	ratings of SCPD	DIAZED gL/gG 25A/500V	-
	prospective current (kA)	1	-
	test voltage U/U _e = 1,1 (V)	L1: 277 L2: 275 L3: 276	-
	r.m.s. test current (A)	L1: 1010 L2: 1050 L3: 1020	-
	power factor (max. 0,7)	0,7	-
	first making operation to closed switching elements	I_p [A] I^2t_g [A ² s] L1: 655 12,6 · 10 ³ L2: 890 28,8 · 10 ³ L3: 1080 29,4 · 10 ³	P
	time intervall between test (min. 3min)		-
	second making operation to closed switching elements	I_p [A] I^2t_g [A ² s] L1: 1035 30,4 · 10 ³ L2: 975 25,3 · 10 ³ L3: 595 9,4 · 10 ³	P
	time intervall between test (min. 3min)		-
	third making operation to closed switching elements	I_p [A] I^2t_g [A ² s] L1: 840 25,1 · 10 ³ L2: 415 7,1 · 10 ³ L3: 1180 31,2 · 10 ³	P
	Behaviour of the equipment during the test		P
	switching elements open by the normal actuating system		P
	dielectric verification		P
	dielectric test voltage (V)	2000	P

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Cl.	Requirement - Test	Result	Verdict
7.1.11	Degree of protection of enclosed equipment		N
	Degree of protection	IP	
	Test for first characteristic		
	Test for first numeral 1		
	Test for first numeral 2		
	Test for first numeral 3		
	Test for first numeral 4		
	Test for first numeral 5		
	Test for first numeral 6		

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Cl.	Requirement - Test	Result	Verdict
	Test for second characteristic		N
	Test for second numeral 1		
	Test for second numeral 2		
	Test for second numeral 3		
	Test for second numeral 4		
	Test for second numeral 5		
	Test for second numeral 6		
	Test for second numeral 7		
	Test for second numeral 8		

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Cl.	Requirement - Test	Result	Verdict
TABLE: temperature rise measurements			P
temperature rise dT of part:		I (A)	U (V)
		dT (K)	required dT (K)
I	2x B4TU02F IN ENCLOSURE PLASTIC LAMP LOAD 1,7W! 120x70x50		
	TERMINALS:	11 10	38 65
		12 10	38 65
		21 10	36 65
		22 10	39 65
		X1	40 65
		X2	35 65
	LENS OF PUSH BUTTON B4DLB		39 40
II	2x B4FU IN ENCLOSURE PLASTIC LAMP 130V, 2,6W 120x70x50		
	TERMINALS:	X1 130	23 65
		X2 130	32 65
	LENS B4R		48 50
III	2x B4TU01FW IN ENCLOSURE METAL LAMP 42V/1,2W 175x115x115		
	TERMINALS:	21 10	28 65
		22 10	30 65
		X1 240	59 65
		X2 240	51 65
	LENS OF PUSH BUTTON B4DLB		32 40
IV	2x B4TU01FR IN ENCLOSURE METAL LAMP 130V/2,6W 175x115x115		
	TERMINALS:	21	62 65
		22	58 65
		X1 240	62 65
		X2 240	62 65
	LENS OF PUSH BUTTON B4DLB		37 40

Remarks

[Empty rectangular box for remarks]