



1. About this document

1.1 Function

These operating instructions provide all the information required for mounting, set-up and commissioning to ensure the safe operation and disassembly of the safety switchgear. The operating instructions must be available in a legible condition and a complete version in the vicinity of the device.

1.2 Target group: authorised qualified personnel

All operations described in this operating instructions manual must be carried out by trained specialist personnel, authorised by the plant operator only.

Please make sure that you have read and understood these operating instructions and that you know all applicable legislations regarding occupational safety and accident prevention prior to installation and putting the component into operation.

The machine builder must carefully select the harmonised standards to be complied with as well as other technical specifications for the selection, mounting and integration of the components.

1.3 Explanation of the symbols used



Information, hint, note: This symbol is used for identifying useful additional information.



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Caution: Failure to comply with this warning notice could lead to failures or malfunctions.

Warning: Failure to comply with this warning notice could lead to physical injury and/or damage to the machine.

1.4 Appropriate use

The products described here were developed to adopt control and display functions as part of a complete system or machine. It is the responsibility of the manufacturer of a machine or plant to ensure the correct functionality of the entire machine or plant.

The products must be exclusively used in accordance with the versions listed below or for the applications authorised by the manufacturer. Detailed information regarding the range of applications can be found in the chapter "Product description".

1.5 General safety instructions

The user must observe the safety instructions in this operating instructions manual, the country specific installation standards as well as all prevailing safety regulations and accident prevention rules.

Further technical information can be found in the Schmersal catalogues or in the online catalogue on the Internet: www.schmersal.net.

The information contained in this operating instructions manual is provided without liability and is subject to technical modifications.

There are no residual risks, provided that the safety instructions as well as the instructions regarding mounting, commissioning, operation and maintenance are observed.

1.6 Warning about misuse

In case of inadequate or improper use or manipulations of the component, personal hazards or damage to machinery or plant components cannot be excluded. The relevant requirements of the standard ISO 13850 must be observed.

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1.7 Exclusion of liability

We shall accept no liability for damages and malfunctions resulting from defective mounting or failure to comply with this operating instructions manual. The manufacturer shall accept no liability for damages resulting from the use of unauthorised spare parts or accessories. For safety reasons, invasive work on the device as well as arbitrary repairs, conversions and modifications to the device are strictly forbidden; the manufacturer shall accept no liability for damages resulting from such invasive work, arbitrary repairs, conversions and/or modifications to the device.

2. Product description

2.1 Ordering code

These operating instructions apply to the following types and programs:

2.1.1 Device heads of the command devices

Basic component D	escription
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	Pushbuttons	and the illuminated pushbuttons:
	1DT®2	Pushbutton
	10M2	Pushbutton with diaphragm for dust protection
	1DL82	Illuminated pushbutton
	10LM2	Illuminated pushbutton with diaphragm for dust protection
	Indicator light	t:
	1ML2	With flat collar
	10MLH2	With high collar
Mushroom head impact button:		ad impact button:
①DP3⑧② without la		without latching
	1DTP382	Without latching (only N programme)
	1DLP382	Illuminated, without latching
		(only N programme)
	1)DRR382	with latching, unlock by turning and pulling
		(pulling only in N programme)
	1DRZ382	With latching, pull to unlock
	Selector swite	::
		- with 2 positions:
	1)WS21(4)(5)	2 maintained positions
	①WT21④⑤	1 momentary position
		- with 3 positions:
	1)WS32(4)(5)	3 maintained positions
	1)WT32(4)(5)	2 momentary positions, left and right
	1)WST324(5)	switching latching
	①WTS32④⑤	latching, switching
Key-operated selector switch:		selector switch:
- with 2 nositions		- with 2 positions:
	①SS21S⑦	2 maintained positions
	①ST21S⑦	1 momentary position
	00.2.00	- with 3 positions:
	DSS32S®	3 maintained positions
	①ST32S®	2 momentary positions left and right
	0SST32S®	switching latching
	①STS32S®	latching switching
	Blanking nlug	for command device position:
	NB, MBN, BN	Blanking plug
о.	Option	Description
)	Command and	d signalling devices:
	E	"E" program
	N	"N" program
	R	"R" program
)	Colour of but	ton surface:
	GB	vellow
	RT	red
	1	

E programme, N programme and R programme

No.	Option	Description	
3	Head diameter of mushroom head impact button		
	30	30 mm	
	35	35 mm	
	40	40 mm	
	42	42 mm	
	45	45 mm	
	50	50 mm	
	55	55 mm	
	70	70 mm	
4	Toggle leng	jth in mm:	
	Without	Short toggle	
	.1	Long toggle	
5	Colour of toggle		
	Without	grey	
	WS	white	
6	Key-withdra	awal position (3 positions):	
	1	Position left	
	2	Position middle	
	3	Position right	
\bigcirc	Key-withdra	awal position (2 positions):	
	1	Position left	
	2	Position right	
8	Colour of diaphragm (only N programme):		
	Without	white	
	GR/	black	
	BL/	blue	

2.1.2 Contact elements of EF contact system (for E and N programme) Basic component Description

oomponone	Broomphon
	- with screw terminals
EF10.3	Contact element NC
EF02.3	Contact element NO
EF1110.3	Double contact element 2 NC
EF022.3	Double contact element 2 NO
EF100.3	Double contact element NC/NO
EF102S.3	Double contact element NC/NO contacts
	with safety spring
	- with flat plug-in connector
EF10F.3	Contact element NC
EF0@F.3	Contact element NO
EF1100F.3	Double contact element 2 NC
EF022F.3	Double contact element 2 NO
EF1002F.3	Double contact element NC/NO
EF1002SF.3	Double contact element NC/NO contacts
	with safety spring
	- with cage clamps
EFK①0.③	Contact element NC
EFK02.3	Contact element NO
EFK110.3	Double contact element 2 NC
EFK022.3	Double contact element 2 NO
EFK102.3	Double contact element NC/NO
	EF10.3 EF02.3 EF100.3 EF022.3 EF102.3 EF102.3 EF102S.3 EF102F.3 EF02F.3 EF102F.3 EF102F.3 EF102SF.3 EF102SF.3 EF102SF.3 EFK02.3 EFK02.3 EFK02.3 EFK02.3 EFK02.3

No.	Option	Description
1	1	Normally-closed contact,
	2	with approx. contact travel in mm
	3	
2	1	Normally-open contact,
	2	with approx. contact travel in mm
	3	
	4	
3	1	Mounting position on mounting flange /
	2	terminal ID
	3	

GN

WS

ΒL

GR

SW

green

white

blue

grey

Black (not for illuminating devices)

2.1.3 Contact elements of RF contact system (for R programme)

Basic component	Description	
RF①0③ RF0②③	- with screw terminals Contact element NC Contact element NO	

No.	Option	Description	
1	1	Normally-closed contact,	
		with approx. contact travel in mm	
2	3	Normally-open contact,	
		with approx. contact travel in mm	
3	Without	Mounting position 1st level / terminal ID	
	.1	Mounting position 2nd level / terminal ID	

2.1.4 Light elements of EF contact system (for E and N programme)Basic componentDescription

-	· ·
EL13	Voltage sensor for lamps Ba9S
ELE13	Voltage sensor for LED Ba9S
ELT3/3	Voltage sender with transformer
	(primary/secondary)
ELDE.N23	Light element with screw terminals and
	integrated LED
ELDEK23	Light element with cage clamps and
	integrated LED
ELDE.N-2-2-	3 colour LED module with screw terminals
2-24VDC	

No.	Option	Description
	Without	agrow terminal
U		Sciew terminal
	F	Flat plug-in connector
	K	Cage clamps
2	GB	yellow
	RT	red
	GN	green
	WS	white
	BL	blue
3	6	Voltage 6 V
	without or 24	Voltage 24 V
	48	Voltage 48 V
	230	Voltage 115230 VAC

2.1.5 Light elements of RF contact system (for R programme) Basic component Description

RL	Voltage sensor for lamps Ba9S	
RLDEWS24	Light element with screw terminals and	
	integrated white LED	

2.2 Special versions

For special versions, which are not listed in the order code below 2.1, these specifications apply accordingly, provided that they correspond to the standard version.

2.3 Purpose

The devices described in these operating instructions are not suitable for emergency stop applications. Emergency stop command devices are described in a separate set of operating instructions.

The devices described here are designed to be mounted in control panels or assembly housings. The command devices are only suitable for processing operation-relevant signals for purposes of machine control.

If sealing elements or dust protection membranes are not closed they could be damaged by cleaning agents and permanent UV exposure.

2.4 Technical data Command and signalling devices: General technical data:

General technical data:	
Design:	round
Proving:	22.3 40 × 50 mm:
soloctor switch mushroom hood	40 ^ 50 mm,
impact button with latching:	50 x 60 mm
Front ploto thicknoop:	
with identification label:	1 0 IIIII
- with identification label.	15
Switching frequency:	any 1 000/b
Actuating stroke:	1,000/11
Actuating force:	4 11111 3 11111
- Pushbutton:	approx 15 N
- Pushbutton with diaphragm:	approx. 1.5 N
- Illuminated pushbutton:	approx. 2.0 N
- Mushroom head impact button:	
- Key-operated selector switch:	
- Spring-return rotary selector switch/	
maintained spring-return rotary selector	tor switch: approx 0.2 N
Mechanical life:	
- Push button:	1 x 10 ⁶ switching cycles
- Illuminated push button:	1 x 10 ⁶ switching cycles
- Palm button with detent:	1×10^{5} switching cycles
- Palm button without detent:	1 x 10 ⁶ switching cycles
- Key selector switch/button/selector s	witch: 1 x 10 ⁵ switching cycles
- Selector switch/button/	
selector switch/key switch	3 x 10 ⁵ switching cycles
Calotte/collar material:	
- N program:	Plastic
- E and R program:	Glass and plastic
Front ring material:	
- N program:	Plastic chrome-plated
- E and R program:	Aluminium, anodised
Button material:	
- N program:	Plastic
- E and R program:	Aluminium, anodised
Selector switch grip material:	
- N program:	Plastic
- E and R program:	Plastic
Protection class:	
- N programme:	IP67, IP69K
- E and R programme:	IP65
Ambient temperature:	–25°C … + 75°C
- Selector switch, key-operated selector	or switch: 0°C +75°C
Fixing with mounting flange:	ELM, EFM
Max. tightening torque of mounting fla	nge: 0.6 Nm
Shock resistance to IEC 60068-2-27:	< 50 g
Resistance to vibrations to EN 60068-	2-6: 5 g
Device designation:	
- Designation labels:	Laser-etched or engraved
- Symbols:	Printed, laser-etched or engraved

General technical data: Standards [EC 60947-5] Switching frequency: 1200h Michanical life: 1000000 operations Resistance to shock: 30 g/18 ms Resistance to shock: approx.2 mm Switching points Depends on contact element used NC contact: approx.2 mm Situated instructions for E and N programme 1. Mount control elements and mounting flang less 2 cross-point screwdriver Switching points Depends on contact element used NC contact: approx.2 mm Switching points Depends on contact element used Contact elements: 10 A gG FF contact elements: 10 A gG FF contact elements: 5 VDC / 1 ax FF contact elements: 5 VDC / 1 ax FF contact elements: 6 A gG Suitable low voltage: - EF contact elements: FF contact elements: 5 VDC / 1 ax Illiation category: - III - EF contact elements: C -13: 24 V / 5 A A FF contact elements: C -13: 24 V / 5 A Contact elements: S -15 N, depending on on thesecond locking position and must, herefore,	Contact/light element:	3. Mounting
 Standards: EE G0947-5. Steventing instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme All General mounting instructions for E and N programme <li< td=""><td>General technical data:</td><td></td></li<>	General technical data:	
Switching frequency: 1200h Michanical life: 10,000.000 operations Resistance to shock: 30 g/18 m; Switching points: Depends on contact element used approx. 1mm3 watch, NC contact: approx. 1mm4 m; Not contact: approx. 1mm4 m; Slow action, NC contact swith positive break Contact types: With galvanically separated contact bridges screwed on evenly and does not move. Switching system: Slow action, NC contact swith positive break Contact telements: 10 A A FF contact elements: 10 A A FF contact elements: 10 A A G FF contact elements: 10 A A G FF contact elements: 5 VDC / 1 ax m4 D C -13 : 24 V / 3 A A FF contact elements: 5 VDC / 1 ax m4 D C -13 : 24 V / 3 A A FF contact elements: FF contact elements: A C -15 : 250 V / 6 A G D -13 : 24 V / 3 A A FF contact elements: Contact elements of the EF contact system must be fitted in the second locking position and must, therefore, lie flush on the mounting flange after fitting. Contact elements: A C -15 : 250 V / 6 A G D -13 : 24 V / 3 A A FF contact elements: Contact elements of the EF contact system must be fitted in the second locking position and must, therefore, lie flush on the mounting flange after fitting. Contact elements: A C -15 : 24 V / 3A A FF contact elements: Contact elements: C	Standards: IEC 60947-5-1	3.1 General mounting instructions for E and N programme
Mechanical life: 10.000.000 operations 30 g / 180 Resistance to shock: 20 g/10150 Hits Resistance to vibration: 20 g/10150 Hits Switching points: Depends on contact elements users of mounting flange using size 2 cross-point screwdriver (see fig. 1) Whoth goints: Depends on contact elements users of mounting flange using size 2 cross-point screwdriver (see fig. 1) Whoth goints: Depends on contact elements users of mounting flange using size 2 cross-point screwdriver (see fig. 1) Whoth goints: Depends on contact elements users of mounting flange using size 2 cross-point screwdriver (see fig. 1) What has rating: No contact users of mounting flange using size 2 cross-point screwdriver (see fig. 1) What has rating: 0 A doints - FF contact elements: 0 A doints - FF contact elements: 5 VDC / 3 2 mA - FF contact elements: 5 VDC / 3 2 mA - FF contact elements: 0 C - 13: 220 V / 6 A GG - RF contact elements: 0 C - 13: 220 V / 6 A GG - RF contact elements: 0 C - 13: 220 V / 6 A GG - RF contact elements: 0 C - 13: 220 V / 6 A GG - RF contact elements: 0 C - 13: 220 V / 6 A GG - RF contact elements: 0 C - 13: 220 V / 5 A G G G G G G G G G G G G F G C G G G	Switching frequency: 1200/h	
Resistance to shock: 30 g/ 18 ms Resistance to shock: 20 g/015 ms Switching points: Depends on contact element used approx. 2 mm4 mm NC contact: approx. 1 mm3 ms Switching system: Stow action Contact yees (g, 1) When tightening the screws, ensure the mounting flange is screwed on evenly and does not move. Contact yees: with galvanically separated contact bridges Contact dements: 10 Apg FF contact elements: 10 Apg FF contact elements: 10 Apg FF contact elements: 5 VDC / 1 ms Contact elements: 5 VDC / 1 ms Utable low voltage: 5 VDC / 1 ms FF contact elements: 5 VDC / 1 ms Contact elements: 6 Apg FF contact elements: 5 VDC / 1 ms Contact elements: 5 VDC / 1 ms Contact elements: 5 VDC / 1 ms Contact elements: 6 C / 15: 250 V / 8 Apg FF contact elements: 6 C / 15: 250 V / 8 Apg Period positive presing on on contact element west contact system must be fitted in the mounting flange after fitting. Contact elements: 6 C / 15: 250 V / 8 Apg <t< td=""><td>Mechanical life: 10,000,000 operations</td><td>1. Mount control elements and mounting flange by tightening both</td></t<>	Mechanical life: 10,000,000 operations	1. Mount control elements and mounting flange by tightening both
Resistance to vibration: 20 g710150 Hz Switching points: Depends on contact elements on contact elements of EF contact system by snapping on in parmet lact current 1 _µ : • NC contacts: approx.1 mm4 mm Switching points: NC contacts with positive body and does not move. Contact types: with galvanically separated contact bridges - FF contact elements: 10 A - FF contact elements: 6 A gG - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - FF contact elements: 5 VDC / 13 2m - RF contact elements: 5 VDC / 13 2m - FF contact elements: 6 A gG - RF contact elements: 0 C-13: 24 V / 5A - RF contact elements: 0 C-13: 24 V / 5A - RF contact elements: 0 C-13: 24 V / 5A	Resistance to shock: 30 g / 18 ms	screws of mounting flange using size 2 cross-point screwdriver
Switching points: Depends on contact element used approx. 2 mm4 mm Slow action. When lightening the screws, ensure the mounting flange is screwed on evenly and does not move. Witching system: NC contacts with positive break of the galvanically separated contact bridges Image: Strewed on evenly and does not move. Contact types: with galvanically separated contact bridges 0.0 - FF contact elements: 0.0 Age - FF contact elements: 0.0 Age - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 6 Age - FF contact elements: 5 VDC / 3.2 mK - FF contact elements: 0.0-13: 24 V / 5 A - FF contact elements: 0.0-13: 24 V / 5 A - FF contact elements: 0.0-13: 24 V / 5 A - FF contact elements: 0.0-13: 24 V / 5 A - FF contact elements: 0.0-13: 24 V / 5 A - FF contact elements: 0.0-13: 24 V / 5 A - FF contact elements: 0.0-13: 24 V	Resistance to vibration: 20 g/10 150 Hz	(see fig. 1)
 - NC contact: approx.1 mm 3 mm approx.2 mm Slow action. NC contacts with positive herek oritact types: with galvanically separated contact bridges in the mounting lange is screwed on evenly and does not move. 2. Mount contact elements of EF contact system by snapping on in positions 1 to 3 to mounting lange (see Fig. 2). Middle position of nonclastic elements: 0 A dg Briotable low voltage: - EF contact elements: 0 A dg Briotable low voltage: - EF contact elements: 0 × V0C / 3.2 mA - RF contact elements: 0 × V0C / 1 mA Ultisation category: - FF contact elements: 0 × V0C / 1 mA Ultisation category: - FF contact elements: 0 × V0C / 1 mA Ultisation category: - FF contact elements: 0 × V18 A - RF contact elements: 0 × RF v - RF	Switching points: Depends on contact element used	
- NC contact: approx.2 mm 4 mm Slow addor, NC contacts with positive break travel. And the sections:	- NC contact: approx. 1 mm 3 mm	When tightening the screws, ensure the mounting flange is
Switching system: NC contact with positive break to contact types: No contact system by snapping on in positions 1 to 3 to mounting flagge (see Fig. 2). Middle position flops 3) is reserved for mounting linghing elements on devices with lightis (see fig. 3). 2. Mound contact elements: 10 Ad Ar. fuse rating: - EF contact elements: 6 Ad Mar. fuse rating: - EF contact elements: 6 Ad Gontact elements: - FC contact elements: 6 Ad Gontact elements: - EF contact elements: 5 VDC / 3.2 mA Ar. fuse rating: - FF contact elements: 5 VDC / 1 mA DC - 13:2 4 V 15A DC - 13:2 4 V 15A Contact elements: - FF contact elements: 0 - 13:2 4 V 15A DC - 13:2 4 V 15A DC - 13:2 4 V 15A DC - 13:2 4 V 15A Contact elements of DE FC contact system must be fitted in the second tocking position and in the middle position and must, therefore, lie flush on the mounting flange after fitting. Are to insult opening: 2 x (0 5 15 mm?); Filt connector: 6 3 mm x 0 8 mm Z 2 x (0 5 25 mm?); Filt connector: - Single core: 2 x (0 5 25 mm?); Filt connector: 10 me sequent herminals Clamp terminals Clamp terminals: - enclosure: plastic, glass-fibre reinforced thermopatis; With plug-in connector depending on the connector plug used Approvals: Contact system must be mounting flange is a transmit with experimant and in the mounting flange is a transmit with protective colars: - Wing compartments: (with plug-in co	- NO contact: approx. 2 mm 4 mm	screwed on evenly and does not move.
NC contacts with positive break Contact types: with gaivanically separated contact bridges Thermal test current 1 _{bc} : 10 A FF contact elements: 10 A FF contact elements: 6 A Gata types: 10 A A FF contact elements: 6 A Gata types: 6 A FF contact elements: 6 A FC contact elements: 5 VDC / 3.2 mA FF contact elements: 5 VDC / 3.2 mA FF contact elements: 5 VDC / 1.2 mA Utilisation voltage: 5 VDC / 3.2 mA FF contact elements: C - 13: 24 V / 3 A Rated insultation voltage U; 400 V Rated insultation voltage U; 400 V Peroverotage category: III Connection: S roce w terminas Plug-in terminatic 2 x (0.5 15 mm²); File vite with forules yother points: 2 x (0.5 25 mm²); Songe core: 2 x (0.5 25 mm²); Songe core: 2 x (0.5	Switching system: Slow action,	
Contact types: with galvanically separated contact bridges FF contact elements: 10 A - FF contact elements: 0 A gd - FF contact elements: 5 VDC / 13 zmA - FF contact elements: 5 VDC / 14 mA Utilisation category: - C-15: 250 V/ 8A - FF contact elements: 5 VDC / 12 mA Utilisation category: - AC-15: 250 V/ 8A - FF contact elements: DC-13: 24 V/ 3A - FF contact elements: DC-13: 24 V/ 3A - RF contact elements: DC-13: 24 V/ 3A - RF contact elements: DC-13: 24 V/ 3A - RF contact elements: approx. 2 m m after the opening point - RF contact elements: approx. 2 m m after the opening point - Single core: 2 x (0.5 15 mm²); - Single core: 2 x (0.5 25 mm²); - Fit connector: server timulast - Single core: 2 x (0.5 15 mm²); - Fit contact server plasite, glass.fibre reinforced thermoplastc, self-extinguisting<	NC contacts with positive break	
Thermal test current L ₁ : Prevented tements: 10 A - EF contact elements: 10 A - RF contact elements: 6 A - RF contact elements: 6 A gG - RF contact elements: 5 VDC / 3 2 mA - FF contact elements: 5 VDC / 1 mA Ubilisation category: - C-15: 250 V / 8 A - FF contact elements: A C-15: 250 V / 8 A DC-13: 24 V / 3 A DC-13: 24 V / 3 A - FF contact elements: A C-15: 250 V / 8 A DC-13: 24 V / 3 A DC-13: 24 V / 3 A - RF contact elements: A C-15: 250 V / 8 A DC-13: 24 V / 3 A DC-13: 24 V / 3 A Rated insulation voltage U; - 25° C + 60 °C Contact elements: - 25 KV / 1 mA Uimator resistance to DIN EN 60068: Part 2-30 Contact elements: - 25 KU / 1 mA Clamble sections: - 2 K (0 5 2 5 mm); - Single core: 2 k (0 5 2 5 mm); - File connector: Sism x 0.8 mm - enclosure:	Contact types: with galvanically separated contact bridges	2. Mount contact elements of EF contact system by snapping on in
 - FF contact elements: 10 A gG - FF contact elements: - FC contact element used - FC contact element used - FC contact elements: - FC contact elements: - FC contact elements: - FC contact elements: - ST contact elements: - FC contact elements: <	Thermal test current Ithe:	positions 1 to 3 to mounting flange (see Fig. 2). Middle position
 - PF contact elements: 10 A gG - RF contact elements: 10 A gG - RF contact elements: - StyDC / 3 2 mA - RF contact elements: - StyDC / 3 2 mA - RF contact elements: - StyDC / 3 2 mA - RF contact elements: - Contact elements: - Single core: - Singl	- EF contact elements: 10 A	(pos. 3) is reserved for mounting lighting elements on devices
Max. fuse rating: 10 Å gG - EF contact elements: 6 Å gG Sutable low voltage: 5 VDC / 3.2 mA - EF contact elements: 5 VDC / 1 mA - EF contact elements: 5 VDC / 1 mA - EF contact elements: 0.1 devices with lights, no plunger segments may be installed in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be mounted first and in the mounting flange, the light element must be fitted in the second locking position and must, therefore, lie flush on the mounting flange after fitting. - FR contact elements: DC-13: 24 V/ JAA Rated insulation voltage U; 4 kV Devervoltage category: IIII Contact elements: approx. 2.m after the opening point on contact element used clamp turb in terminals Connection: S x 2.6 mm x 0.8 mm The with forules with protective collars: 2 x 0.5 2.5 mm ³ ;	- RF contact elements: 6 A	with lights (see fig. 3).
 - EF contact elements: 10 A gG - RF contact elements: 6 A gG - Stutable forw voltage: - EF contact elements: 5 VDC / 3.2 mA - SF contact elements: 5 VDC / 1 mA - AF contact elements: 5 VDC / 1 mA - EF contact elements: 6 VDC / 3.2 mA - FF contact elements: 0 C - 15: 250 V/ 6 A - RF contact elements: 0 C - 15: 250 V/ 6 A - RF contact elements: 0 C - 13: 24 V / 3 A - RF contact elements: 0 C - 13: 24 V / 5 A - RF contact elements: 0 C - 13: 24 V / 5 A - RF contact elements: 0 C - 13: 24 V / 5 A - RF contact elements: 0 C - 13: 24 V / 5 A - RF contact elements: 0 C - 13: 24 V / 5 A - RF contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - RT contact elements: 0 C - 13: 24 V / 5 A - Single core: 0 C - 25 C 15 mm³; - Fine vice with forrules with protective colars: 2 x (0.5 15 mm³; - Fine vice with forrules with protective colars: 2 x (0.5 15 mm³; - Fine vice with forrules with protective colars: 2 x (0.5 15 mm³; - Fine vice with forrules with protective colars: 1 Plags in silver, spring bronze or brass carlier to grad colar terminals (10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	Max. fuse rating:	
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		Fig. 2 Fig. 3

Fig. 2

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Only fit onto clean and grease-free surface!

3.2 General mounting instructions for R programme

1. Mount control elements and mounting flange by tightening both screws of mounting flange using size 2 cross-point screwdriver (see section 3.1, Fig. 1)

When tightening the screws, ensure the mounting flange is screwed on evenly and does not move.

 Mount contact elements of RF contact system by snapping on in positions 1 to 3 to mounting flange (see fig. 4). Middle position (pos. 3) is reserved for mounting lighting elements on devices with lights (see fig. 5).



Fig. 4

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- On devices with lights, no plunger segments may be installed in the mounting flange.
- Contact elements of the RF contact system are fitted in the first locking position and, therefore, lie flush on the mounting flange after fitting. If using contact and light elements on the mounting flange, the light element must be mounted first and in the middle position (pos. 3). No contact element may be mounted to the light element.



Only fit onto clean and grease-free surface!

3.3 Dimensions All measurements in mm.

ii measurements in mm.

EF contact system (for E and N programme)



RF contact system (for R programme)

Single row contact elements



Double row contact elements







A maximum of 4 contact elements may be used on devices with latching. The fourth element must be mounted in the centre (pos. 3).

¹

4.1 General information for electrical connection

(i.e. remove excess cables etc.).

screwed in and tightened to 1 Nm.

Mounting flange and blanking plug

Fig. 6

ELM / EFM

4. Electrical connection





The devices must be disassembled in a de-energised condition only.

6.1 Removal of E, N and R programme

 Removal of the EF contact elements is carried out with the aid of a size 2 cross-point screwdriver (see fig. 8). Removal of the RF contact elements is carried out with the aid of a cross-point screwdriver with the recommended width of 5.5 mm (see Fig. 9).



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Ø22.3

Fig. 7

Blanking plug

The bevel on the mounting flange is indicated by position 1.

The electrical connection may only be carried out by authorised personnel in a de-energised condition.

After wiring, the contact elements must be cleaned

The clamping screws of the contact elements are to be

With the light element mounted, the contact elements at pos. 1 and pos. 2 must be removed first. The light element is then removed.

 Removal of the mounting flange is carried out by loosening the screws on the mounting flange. The mounting flange is then turned approx. 45° in anti-clockwise direction and removed (see fig. 10).



6.2 Disposal

The switch must be disposed of in an appropriate manner in accordance with the national prescriptions and legislations.

4.2 Contact variants of contact system

Refer to ordering code, chapter 2.1

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A mixture between command device programs and contact systems is not permissible on all devices.

5. Set-up and maintenance

5.1 Functional testing

The function of the component must be tested.

- The following conditions must be checked and met:
- Correct fixing of the fitted component
 Check the integrity of the connections
- 3. Check the command device for damage

5.2 Maintenance

A regular visual inspection and functional test, including the following steps, is recommended:

- 1. Check the correct fixing of the command device and the contact element
- 2. Remove particles of dust and soiling
- 3. Check the integrity of the connections

Damaged or defective components must be replaced.

(EN)

7. EU Declaration of conformity

Original	K.A. Schmersal GmbH & Co Möddinghofe 30 42279 Wuppertal Germany). KG
	Internet: www.schmersal.com	m
We hereby certify that the hereafter de to the applicable European Directives.	scribed components both in their t	basic design and construction confor
Name of the component:	E, N and R program	
Туре:	See ordering code	
Description of the component:	Command and signalling devices optionally as illuminated signalling devices, Push, illuminated, palm buttons and switches, Selector switches and buttons, key selector switches and key selector buttons in conjunction with contact element EF and RF or light elements and voltage senders EL* and RL*	
Relevant Directives:	Low Voltage Directive EMC-Directive * RoHS-Directive	2014/35/EU 2014/30/EU 2011/65/EU
Applied standards:	DIN EN 60947-5-1:2010	
Place and date of issue:	Wuppertal, May 9, 2017	
	Authorised signature Philip Schmersal	

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The currently valid declaration of conformity can be downloaded from the internet at www.schmersal.net.



(EN)

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