
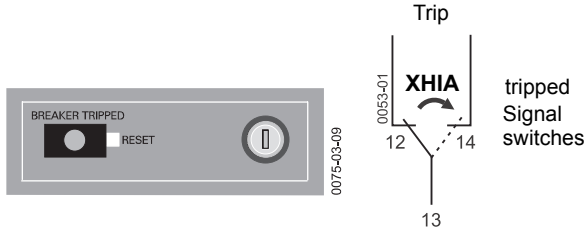
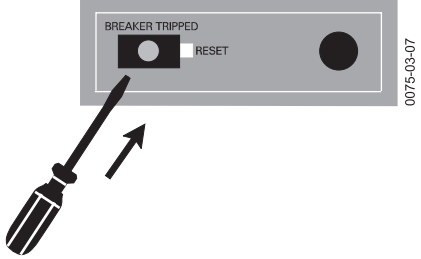
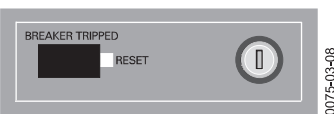
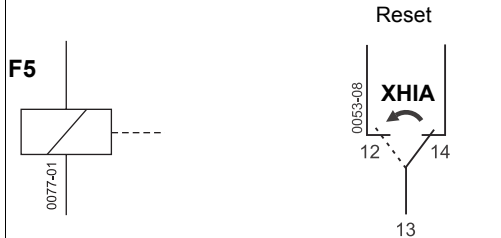



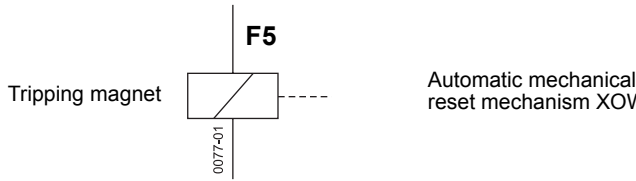

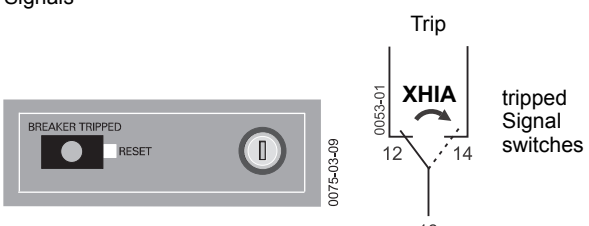
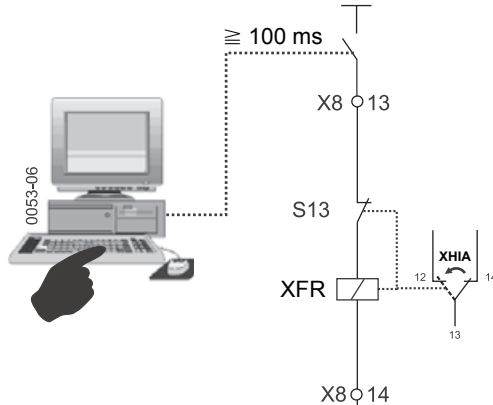
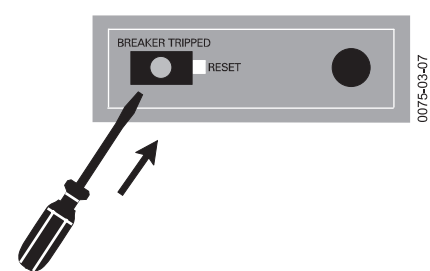
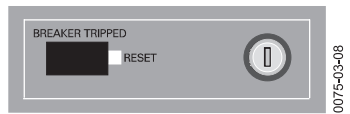
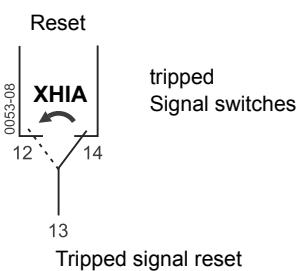
10 Reclosing lockout and remote reset

Automatic reset and remote reset	Part no.
Automatic reset of the mechanic reclosing lockout	+IZM-XOW
Remote reset (includes IZM-XOW function)	+IZM-XFR24DC
	+IZM-XFR48DC
1. Automatic reset of the mechanical reclosing lockout	+IZM-XFR120AC/125DC
2. Rest of the tripping indication (red pin and IZM-XHIA reset)	+IZM-XFR230AC/250DC

10.1 Manual reset of the reclosing lockout



1	Circuit-breaker is tripped by overcurrent	
2	<p>Indications</p> 	<p>Signals</p> 
3	<p>Manual reset</p>  <p>Press tripped indicator (red pin), till it latches</p>	
4	<p>Tripped indicator reset</p> 	<p>Reset</p>  <p>Tripping magnet</p> <p>Tripping magnet and tripped signal are reset.</p>
5	<p>Indications</p>  <p>Circuit-breaker is ready to close again, if spring is charged and no interlock is active</p>	

10.2 Automatic reset of reclosing lockout

1	Circuit-breaker is tripped by overcurrent	
2	<p>Automatic reset</p> 	
3	<p>Indications</p>  <p>Circuit-breaker is immediately ready to close again, if storage spring is charged</p>	<p>Signals</p> 
4	<p>Reset tripped indicator and tripped signal</p> <p>Remote reset</p> <p>Option: Remote reset of the tripped indicator and the tripped signal by means of a remote reset coil(→ page 10 – 3)</p> 	<p>Manual reset</p>  <p>Press tripped indicator (red pin), till it latches</p>
5	 <p>Tripped indicator reset</p>  <p>Reset</p> <p>Tripped Signal switches</p> <p>Tripped signal reset</p>	

10.3 Retrofitting automatic reset

With the automatic reset of the reclosing lockout the tripping magnet is automatically reset after the overcurrent release has tripped. The circuit-breaker is immediately ready to close again. The tripped indication and the tripped signal must be reset either manually on the overcurrent release or by means of the remote reset magnet.

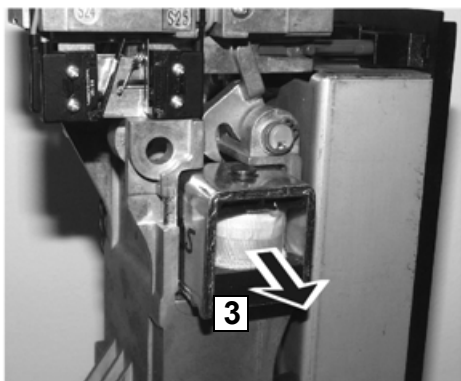
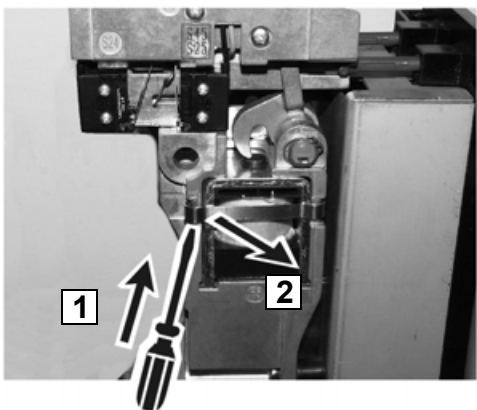
 WARNING	
	<p>Danger of injury!</p> <p>The switching mechanism could cause personal injury when the operating panel is removed. Before removing the operating panel switch off power and discharge the spring (→ page 24 – 2).</p> <ul style="list-style-type: none"> – Remove the plug X5 – Press OFF button – Press ON button – Press OFF button once again.

- Remove front panel (→ page 24 – 6)
- Remove overcurrent release (→ page 9 – 39)

10.3.1 Installing reset mechanism

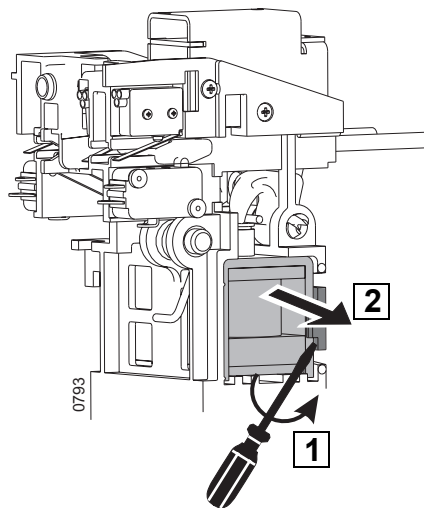
Removing tripping magnet F5

Metal bracket for overcurrent release (silver):



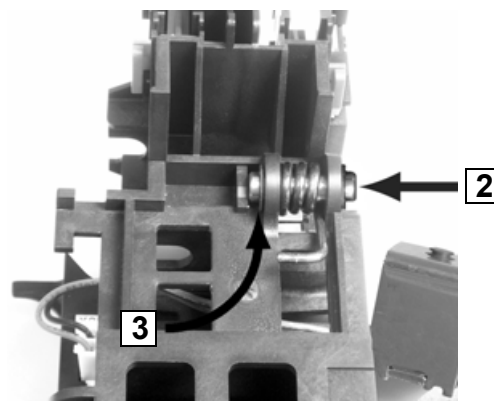
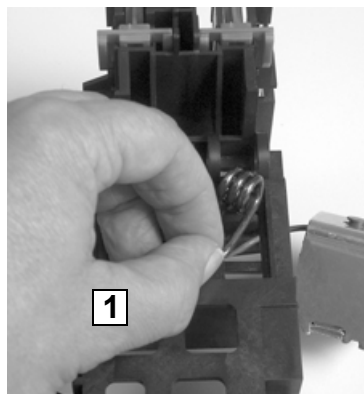
- 1 Loosen retaining spring
- 2 Remove retaining spring
- 3 Remove tripping magnet

Plastic bracket for overcurrent release (black):



- 1 Press back catch
- 2 Remove tripping magnet

Installing reset spring and bolt



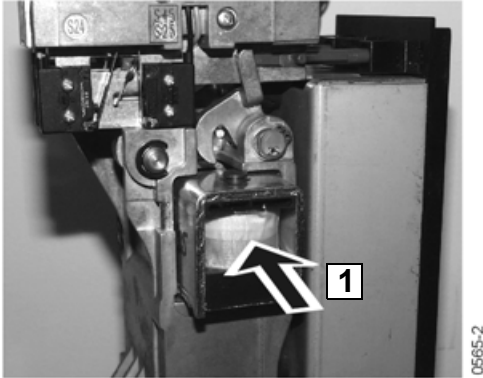
- 1 Fit reset spring
- 2 Fit bolt with lock washer
- 3 Secure bolt with lock washer on the left

Installing tripping magnet F5

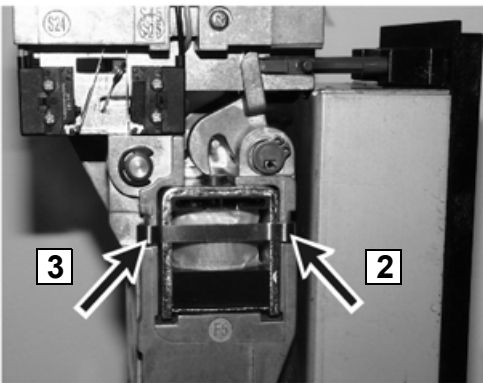
CAUTION

Do not squeeze the connecting cables of the tripping magnet during installation!

Metal bracket for overcurrent release (silver):



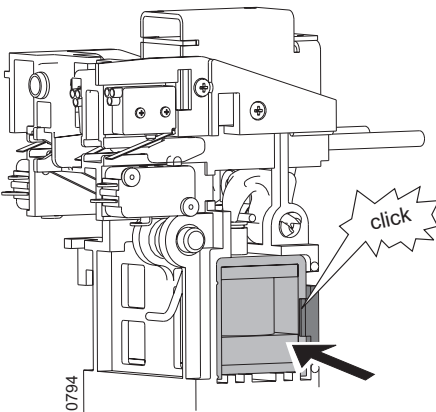
0565-2



0568

- 1 Fix tripping magnet
- 2 Fix retaining spring, on the right
- 3 Snap retaining spring on, on the left

Plastic bracket for overcurrent release (black):



0794

Then:

- Install overcurrent release (→ page 9 – 39)
- Install front panel (→ page 24 – 13)

CAUTION

Minimum pause = 80 ms between tripping by overcurrent release and the next switch-on of the circuit-breaker.

	Part no.
Automatic reset of the reclosing lockout for overcurrent release bracket in metal (until 07/2005)	IZM-XOW-M
Automatic reset of the reclosing lockout for overcurrent release bracket in plastic	IZM-XOW



10.4 Retrofitting the remote reset option

Firstly retrofit the automatic reset of the reclosing lockout(→ page 10 – 3).

CAUTION

Remote reset magnet usable only with automatic reset reclosing lockout!
Otherwise remote reset magnet will be overloaded and destroyed.

10.4.1 Fitting

 WARNING	
	<p>Danger of injury!</p> <p>The switching mechanism could cause personal injury when the operating panel is removed. Before removing the operating panel switch off power and discharge the spring (→ page 24 – 2).</p> <ul style="list-style-type: none"> - Remove the plug X5 - Press OFF button - Press ON button - Press OFF button once again.

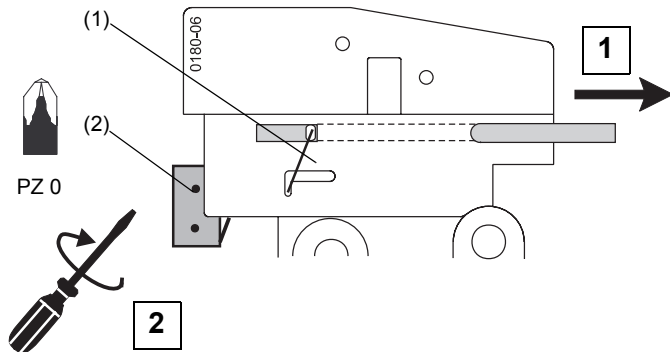
- Remove front panel (→ page 24 – 6)
- Remove overcurrent release (→ page 9 – 39)

Mounting the cut-off switch S13 for remote reset coil

Metal bracket for overcurrent release (silver):

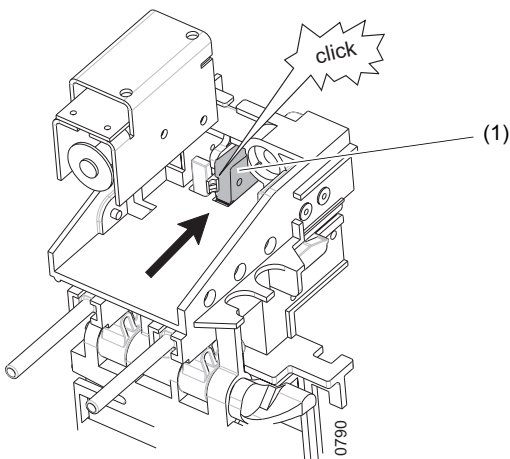
CAUTION

Tighten self-tapping screws carefully. The signalling switches must not be deformed during installation.



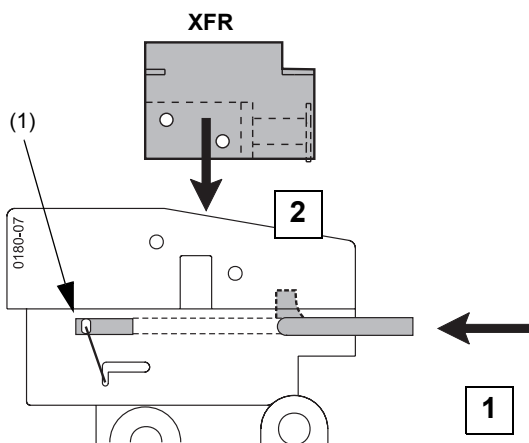
- (1) Leg spring
Not necessary for overcurrent release bracket in plastic (black).
- (2) S13 rear

Plastic bracket for overcurrent release (black):

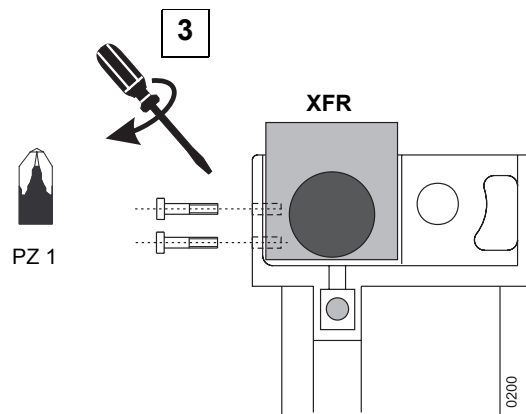


- (1) cut-off switch S13

Mounting remote reset magnet



- (1) Leg spring
Not necessary for overcurrent release bracket in plastic (black).

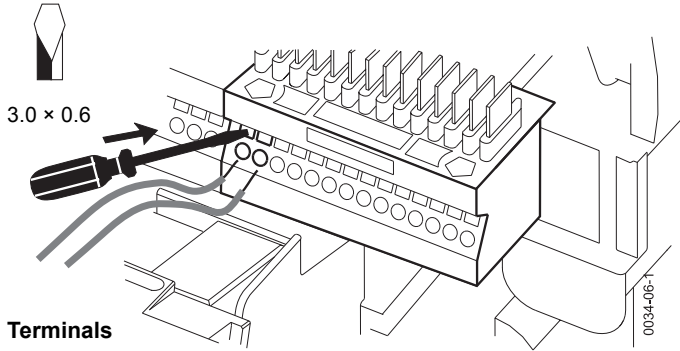


10.4.2 Connecting wires

→ Circuit diagrams (page 8 – 1)

Note

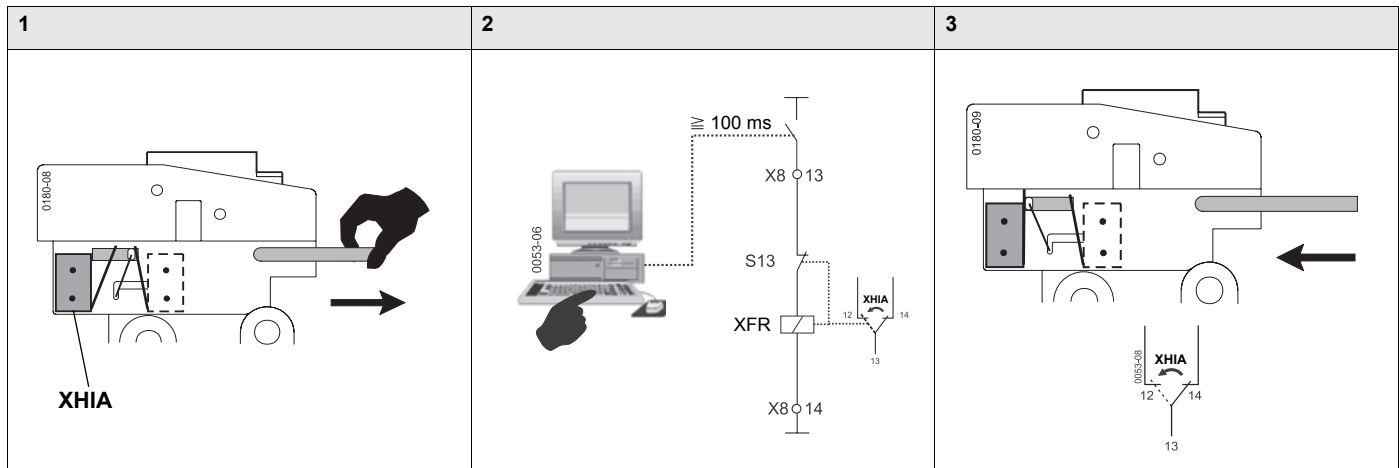
(→ page 5 – 16 ff) It may be necessary to retrofit missing control-circuit connections (knife contact rail, auxiliary plugs, sliding contacts for connection area).



Terminals

XB.13
XB.14

10.4.3 Function test

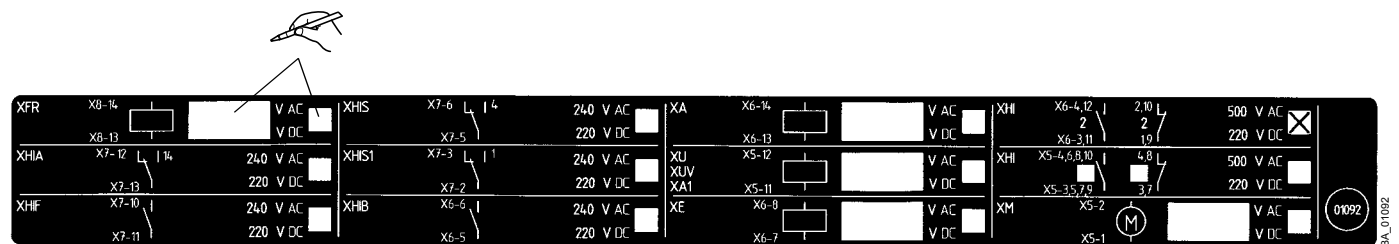




Then:

- Install overcurrent release (→ page 9 – 39)
- Install front panel (→ page 24 – 13)

10.4.4 Updating the options label

Use an indelible ink pen!



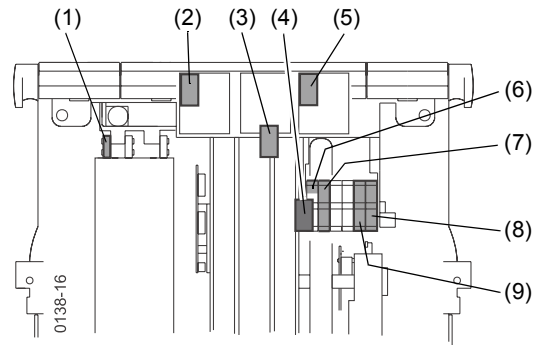
	WARNING
	<p>Can cause death or personal injury.</p> <p>Before removing any covers and the operating panel of the circuit-breaker be sure to discharge the storage spring. (→ page 24 – 2)</p>

Auxiliary and control switches	Part no.
Standard auxiliary switch 2 N/O, 2 N/C	XHI
Additional auxiliary switch	(+)IZM-XHI20
	(+)IZM-XHI11
	(+)IZM-XHI31
	(+)IZM-XHI40
Tripped signalling switch for overcurrent release bracket in metal (until 07/2005)	IZM-XHIA-M
Tripped signalling switch for overcurrent release bracket in plastic	(+)IZM-XHIA
Signal for voltage release state on shunt release	(+)IZM-XHIS
Signal for voltage release state on 2nd shunt release or undervoltage release	+IZM-XHIS1
Signalling switch for ready-to-close	(+)IZM-XHIB
Signalling switch for storage spring charged	(+)IZM-XHIF

Note



Screw terminals are standard on the customer side, spring terminals are optional.
 The XHIA, XHIS(1) auxiliary switches cannot be combined with (+)IZM-XCOM-DP or (+)IZM-XBSS.
 The XHIF auxiliary switch cannot be combined with (+)IZM-XCOM-DP.
 XHIS and XHIS1 are identical. The different part nos define the installation location with complete delivery ex-works (comparable with XA and XA1).

11.1 Signalling switches

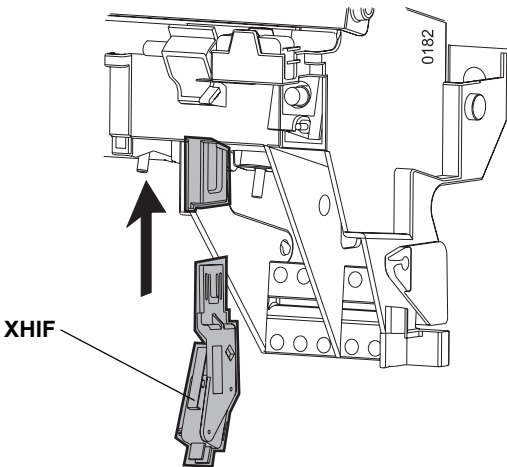
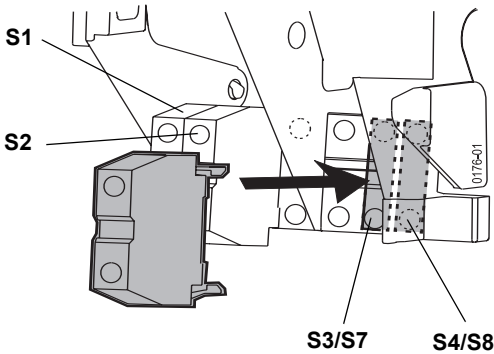
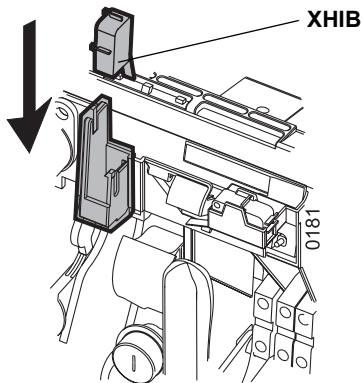


- (1) Tripped signalling switch XHIA
- (2) Signalling switch XHIS for 1st shunt release (→ page 13 – 3)
- (3) Signalling switch for ready-to-close XHIB
- (4) Signalling switch for spring state XHIF
- (5) Signalling switch XHIS1 for 2nd shunt release or undervoltage release (→ page 13 – 3)
- (6) Contact position auxiliary switch S1 (standard)
- (7) Contact position-driven auxiliary switch S2 (standard)
- (8) Contact position-driven auxiliary switch S4 (XHI22) or S8 (XHI40)
- (9) Contact position-driven auxiliary switch S3 (XHI11(22)(31) or S7 (XHI40)

11.1.1 Mounting signalling switches

	WARNING
	<p>Danger of injury!</p> <p>The switching mechanism could cause personal injury when the operating panel is removed. Before removing the operating panel switch off power and discharge the spring (→ page 24 – 2).</p> <ul style="list-style-type: none"> – Remove the plug X5 – Press OFF button – Press ON button – Press OFF button once again.

– Remove front panel (→ page 24 – 6)

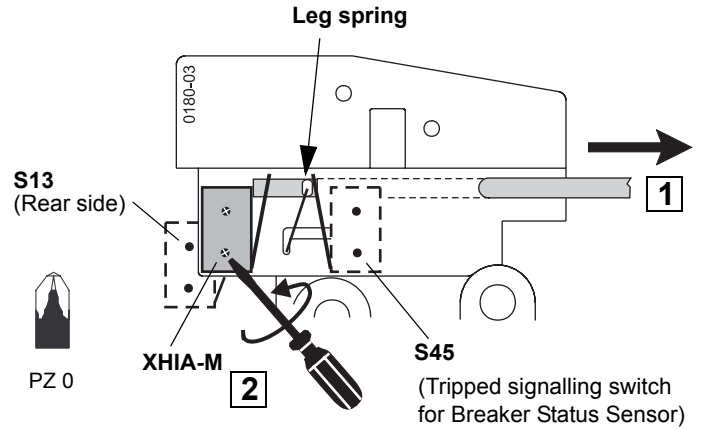


11.1.2 Mounting signalling switches at trip unit

– Remove overcurrent release (→ page 9 – 39)

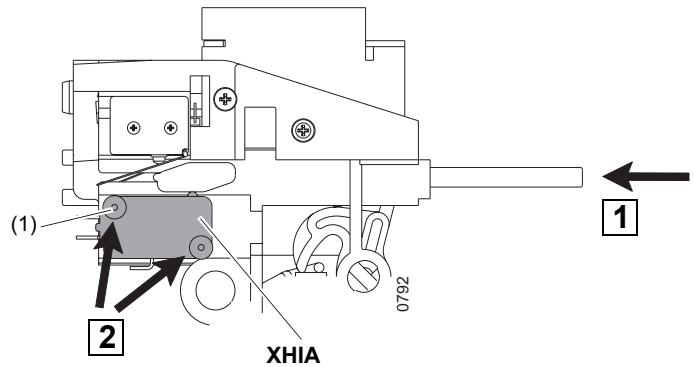
Metal bracket for overcurrent release (silver):

CAUTION
Tighten self-tapping screws carefully. The signalling switches must not be deformed during installation.



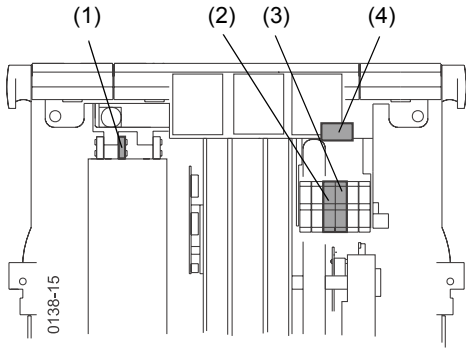
Necessary for IZM circuit-breakers with metal system carrier (07/2005)

Plastic bracket for overcurrent release (black):



(1) 2 snap pins

11.2 Control switches



- (1) Cut-off switch S13 for remote reset (→ page 10 – 4)
- (2) Cut-off switch S14 for shunt release XA...05 (overexcited) (→ page 13 – 4)
- (3) Cut-off switch S15 for closing release XE...05 (overexcited) (→ page 13 – 4)
- (4) Switch XEE "Electrical ON" or (→ page 13 – 5) motor disconnecting switch XMS (→ page 12 – 3)

11.3 Communication switches

→ Status signals for the communication (page 9 – 47)

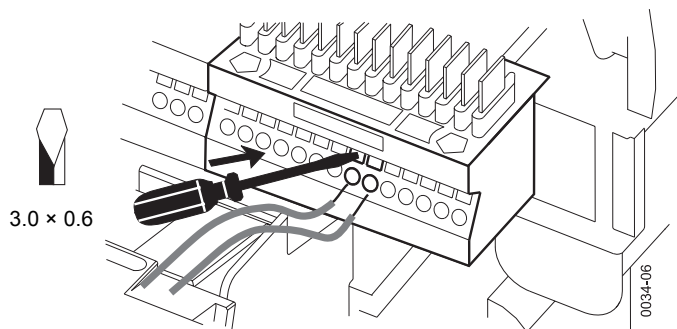
11.4 Connecting wires

Circuit diagrams (→ page 8 – 2)

Note

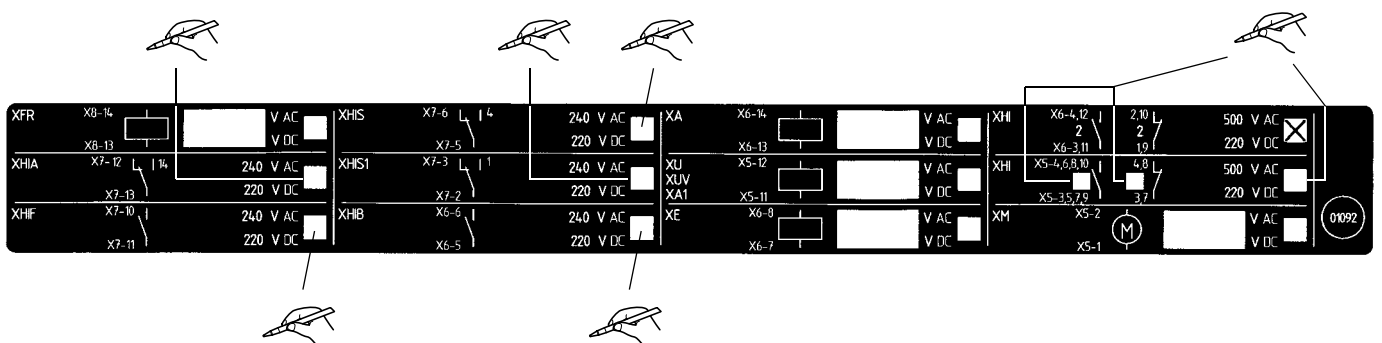
It may be necessary to retrofit missing control-circuit connections (knife contact rail, auxiliary plugs, sliding contacts for connection area).

(→ page 5 – 16 ff)



Updating the options label

Use an indelible ink pen





12 Motor operator

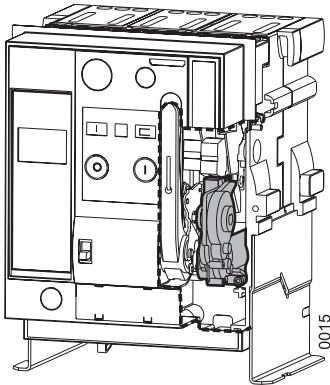
For automatic charging of the spring after every switch ON. Will be switched on if spring is discharged and control voltage is applied. Is automatically de-energized after charging.

	Voltage	Power consumption	Part no.
Motor operator	24 – 30 V DC	110 W	(+)IZM-XM24-DC
	48-60 V DC	120 W	(+)IZM-XM48-60DC
	110 – 127 V AC/110 – 125 V DC	150 W	(+)IZM-XM110AC/DC
	208 – 240 V AC/220 – 250 V DC	130 W	(+)IZM-XM230AC/220DC
Motor cut-off switch			(+)IZM-XMS
Make-break operations counter			(+)IZM-XSZ

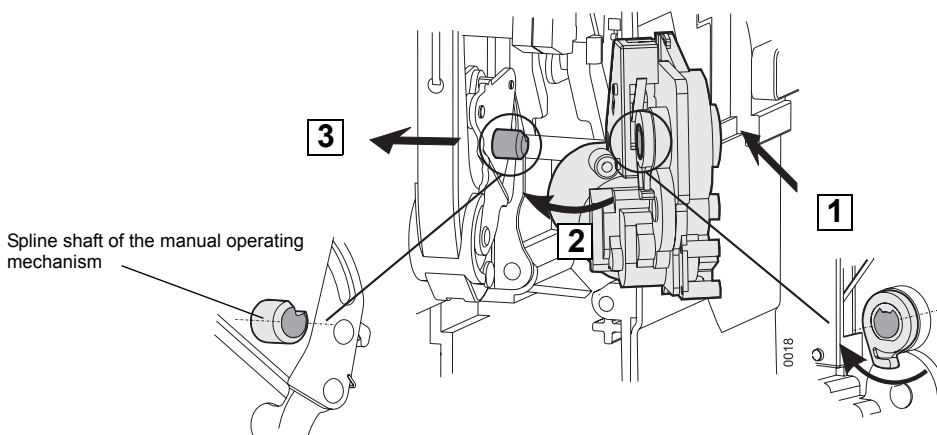
12.1 Retrofitting the motor operator

 WARNING
<div style="display: flex; align-items: center;">  <div> <p>Danger of injury!</p> <p>The switching mechanism could cause personal injury when the operating panel is removed. Before removing the operating panel switch off power and discharge the spring (→ page 24 – 2).</p> <ul style="list-style-type: none"> – Remove the plug X5 – Press OFF button – Press ON button – Press OFF button once again. </div> </div>

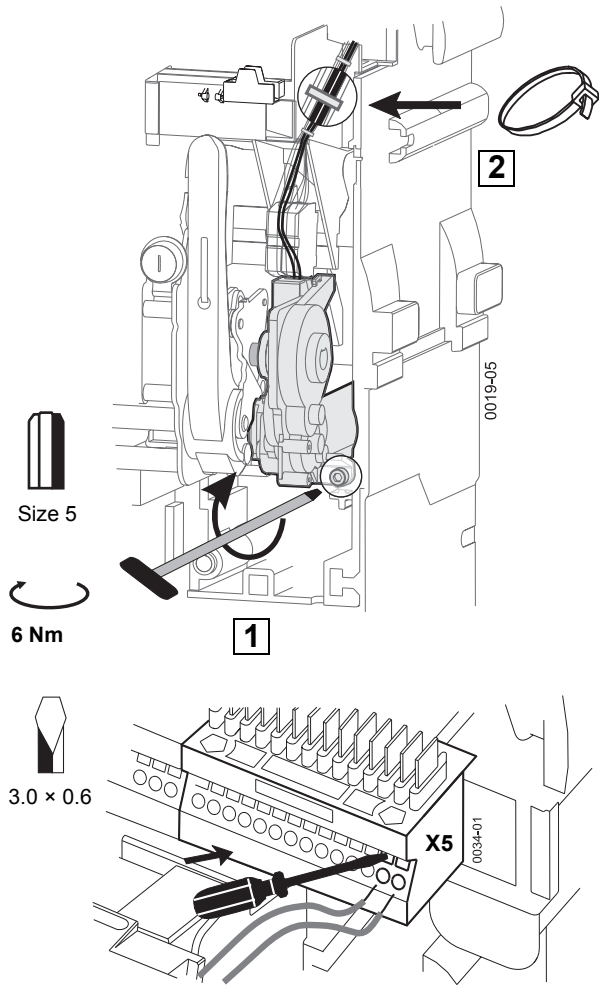
– Remove front panel (→ page 24 – 6)



Mounting the motor on the spline shaft



Fixing the motor operator/connecting wires



Terminals:
X5.1 (L-)
X5.2 (L+)

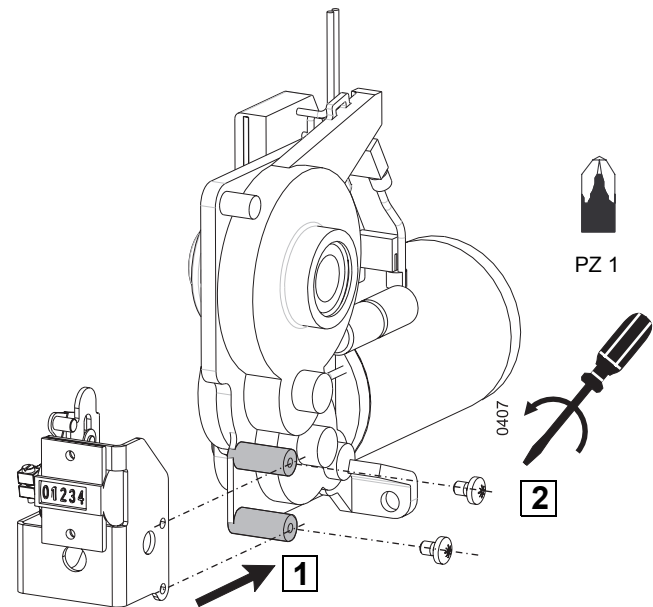
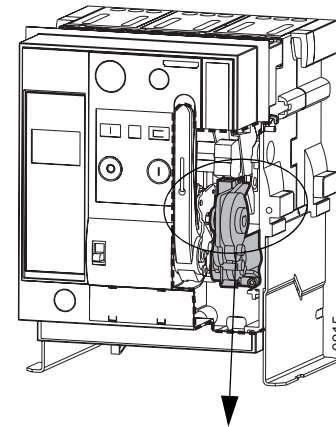
→ Circuit diagrams (→ page 8 – 4)

Note

It may be necessary to retrofit missing control-circuit connections (knife contact rail, auxiliary plugs, sliding contacts for connection area).
(→ page 5 – 16 ff)

12.2 Mechanical operations counter

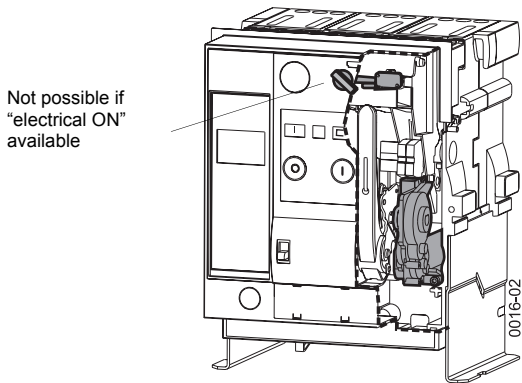
The mechanical operations counter can only be retrofitted when the circuit-breaker is equipped with a motor operator. The make-break operations are also counted if the spring-operated stored-energy mechanism is charged with the manual lever (motor without supply).



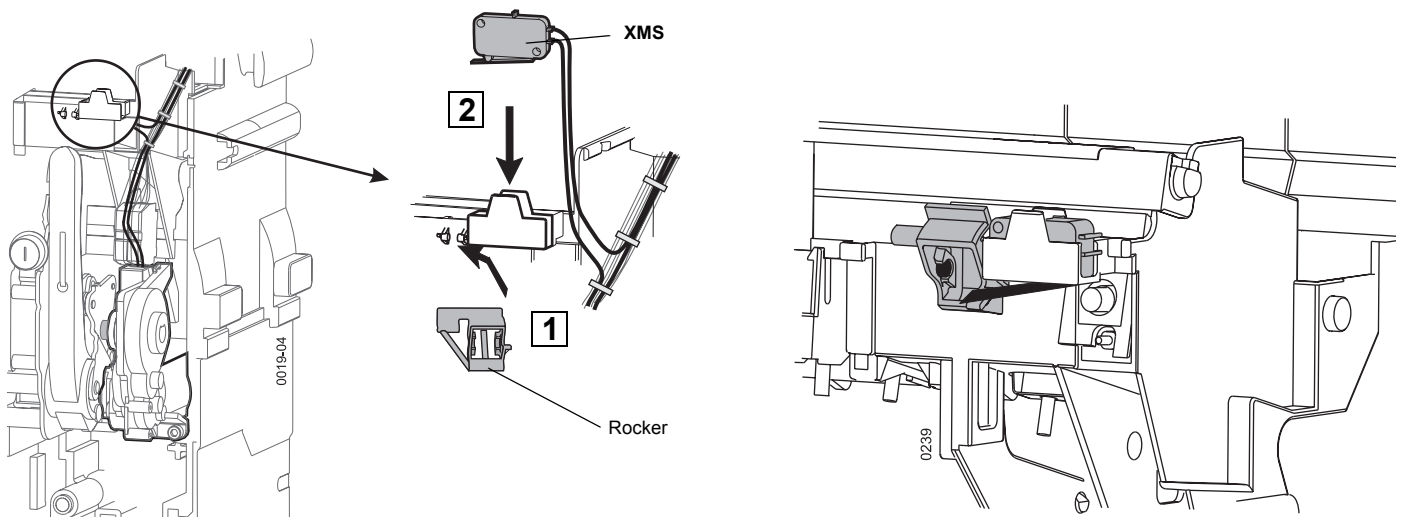
12.3 Motor cut-off switch on the operating panel

Option.

For de-energizing the motor operator. Supplied pre-assembled with a soldered wire.



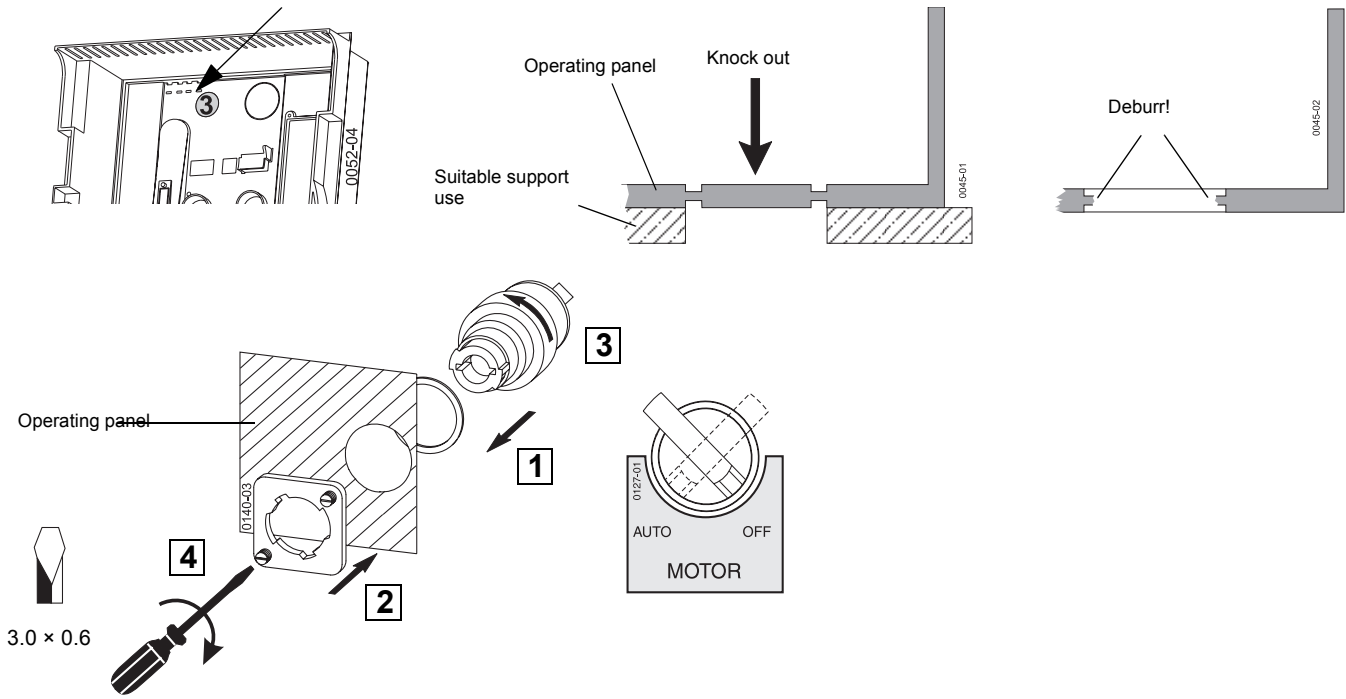
Installing motor disconnect switch



Connecting motor disconnect switch

- Open terminal X5.1 and disconnect wire X5-1 (wire from motor operating mechanism)
- Connect wire X5-1 of the disconnect switch XMS to terminal X5.1
- Route wire X5-1 of the motor operating mechanism to terminal lug 4 of the disconnect switch and solder it there.

Installing the selector knob



Note

It may be necessary to retrofit missing control-circuit connections (knife contact rail, auxiliary plugs, sliding contacts for connection area).

(→ page 5 – 16 ff)

12.4 Updating the options label

Use an indelible ink pen

XFR	X8-14	V AC	XHIS	X7-6	L 4	240 V AC	XA	X6-14	V AC	XHII	X6-4,12	L 2,10	500 V AC
	X8-13	V DC		X7-5		220 V DC		X6-13	V DC		2	2	220 V DC
XHIA	X7-12	L 14	XHIS1	X7-3	L 1	240 V AC	XU	X5-12	V AC	XHI	X6-3,11	L 19	500 V AC
	X7-13			X7-2		220 V DC	XUV	X5-11	V DC		X5-4,6,8,10	L 4,8	220 V DC
XHF	X7-10		XHIB	X5-6		240 V AC	XA1	X6-8	V AC		X5-3,5,7,9	L 3,7	500 V AC
	X7-11			X6-5		220 V DC	XE	X6-7	V DC	XM	X5-2		220 V DC
											X5-1		500 V AC
													220 V DC



13 Voltage releases, closing coil, electrical ON

13.1 Overview

Closing release	AC V 50/60 Hz	DC V	Part no.	Single part no.
Closing release XE (100 % duty factor, suitable for continuous operation)	–	24	+IZM-XE24DC	IZM-XE/A24DC
	–	30	+IZM-XE30DC	IZM-XE/A30DC
	–	48	+IZM-XE48DC	IZM-XE/A48DC
	–	60	+IZM-XE60DC	IZM-XE/A60DC
	110	110	+IZM-XE110AC/DC	IZM-XE/A110AC/DC
	230	220	+IZM-XE230AC/220DC	IZM-XE/A230AC/220DC
Overexcited closing release XE (5 % duty factor, not suitable for continuous operation)	–	24	+IZM-XE24DC05	IZM-XE/A24DC05
	–	48	+IZM-XE48DC05	IZM-XE/A48DC05
	110-127	110-125	+IZM-XE110AC/DC05	IZM-XE/A110AC/DC05
	208-240	220-250	+IZM-XE230AC/DC05	IZM-XE/A230AC/DC05

Signalling switch	Part no.
Signalling switch on 1st voltage release	+IZM-XHIS
Signalling switch on 2nd voltage release	+IZM-XHIS1

Electrical ON	Part no.
Button with sealing cap	+IZM-XEE-TP
Key-operated button CES	+IZM-XEE-C

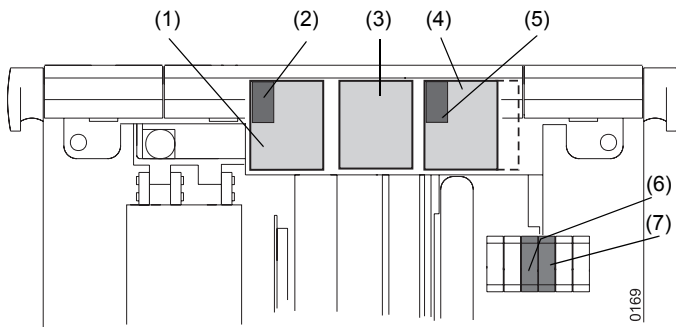
1 st voltage release	AC V 50/60 Hz	DC V	Part no.	Single part no.
1 st shunt release XA (100 % duty factor, suitable for continuous operation)	–	24	+IZM-XA24DC	IZM-XE/A24DC
	–	30	+IZM-XA30DC	IZM-XE/A30DC
	–	48	+IZM-XA48DC	IZM-XE/A48DC
	–	60	+IZM-XA60DC	IZM-XE/A60DC
	110	110	+IZM-XA110AC/DC	IZM-XE/A110AC/DC
	230	220	+IZM-XA230AC/220DC	IZM-XE/A230AC/220DC
overexcited shunt release XA (5 % duty factor, not suitable for continuous operation)	–	24	–	IZM-XE/A24DC05
	–	48	–	IZM-XE/A48DC05
	110-127	110-125	–	IZM-XE/A110AC/DC05

2 nd voltage release	AC V 50/60 Hz	DC V	Part no.	Single part no.
2 nd shunt release XA1	–	24	+IZM-XA1(24DC)	IZM-XE/A24DC
	–	30	+IZM-XA1(30DC)	IZM-XE/A30DC
	–	48	+IZM-XA1(48DC)	IZM-XE/A48DC
	–	60	+IZM-XA1(60DC)	IZM-XE/A60DC
	110	110	+IZM-XA1(110AC/DC)	IZM-XE/A110AC/DC
	230	220	+IZM-XA1(230AC/220DC)	IZM-XE/A230AC/220DC
Overexcited shunt release XA1 (5 % duty factor, not suitable for continuous operation)	–	24	–	IZM-XE/A24DC05
	–	48	–	IZM-XE/A48DC05
	110-127	110-125	–	IZM-XE/A110AC/DC05
Undervoltage release XU (non-delayed)	–	24	+IZM-XU24DC	IZM-XU24DC
	–	30	+IZM-XU30DC	IZM-XU30DC
	–	48	+IZM-XU48DC	IZM-XU48DC
	–	60	+IZM-XU60DC	IZM-XU60DC
	110-127	110-125	+IZM-XU127AC/125DC	IZM-XU127AC/125DC
	208-240	220-250	+IZM-XU240AC/250DC	IZM-XU240AC/250DC
	380-415	–	+IZM-XU415AC	IZM-XU415AC
Undervoltage release XUV (delayed)	–	48	+IZM-XUV48DC	IZM-XUV48DC
	110-127	110-125	+IZM-XUV127AC/125DC	IZM-XUV127AC/125DC
	208-240	220-250	+IZM-XUV240AC/250DC	IZM-XUV240AC/250DC
	380-415	–	+IZM-XUV415AC	IZM-XUV415AC

Note

Closing coils and shunt releases have the same construction.
Select part no. IZM-XE/A... when ordering separately.

Mounting locations




- (1) 1st shunt release XA
- (2) Signalling switch XHIS
- (3) Closing release XE
- (4) 2nd shunt release XA1 or undervoltage release (undelayed) XU or undervoltage release (delayed) XUV
- (5) Signalling switch XHIS1 or S43 (XBSS)
- (6) Cut-off switch S14 for shunt release 5 % DF (overexcited)
- (7) Cut-off switch S15 for closing release XE 5 % DF (overexcited)

Voltage trips with 100 % DF may be used as an electrical closing lockout.

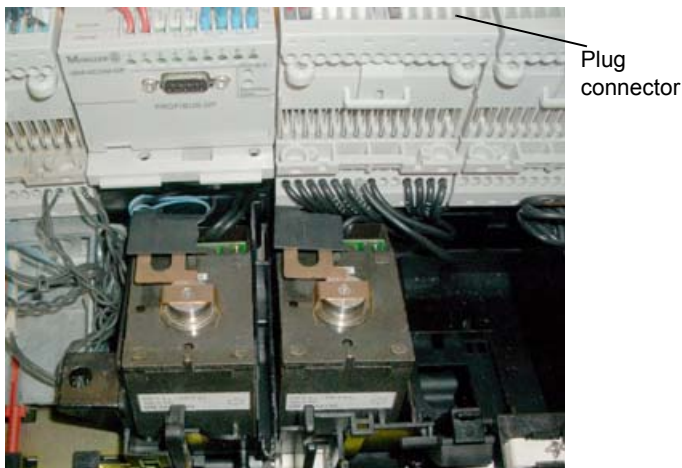
CAUTION

Check that the closing coil with 5 % duty factor can only be activated when the circuit-breaker is in the ready state. Otherwise the closing release will be destroyed.

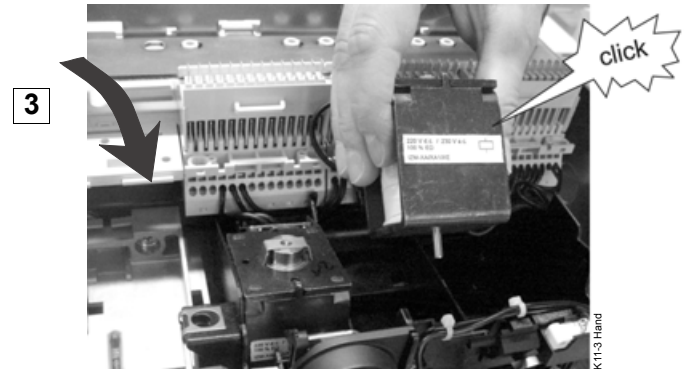
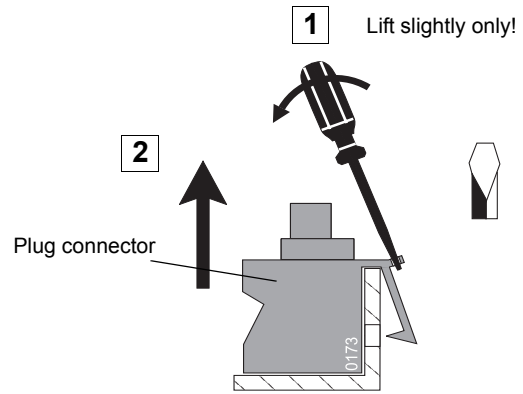
13.2 Retrofitting voltage releases

⚠ WARNING	
	<p>Danger of injury!</p> <p>The switching mechanism could cause personal injury when the operating panel is removed. Before removing the operating panel switch off power and discharge the spring (→ page 24 – 2).</p> <ul style="list-style-type: none"> – Remove the plug X5 – Press OFF button – Press ON button – Press OFF button once again.

– Remove front panel (→ page 24 – 6)

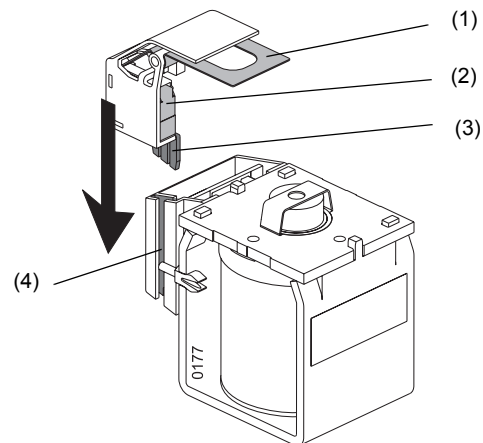


For better mounting remove plug connector.



13.3 Fitting of optional signalling switch on the voltage release

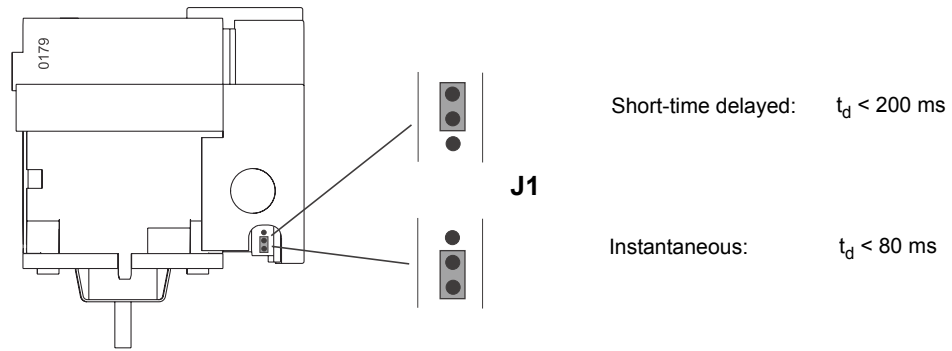
Signals the switch position of the auxiliary release.



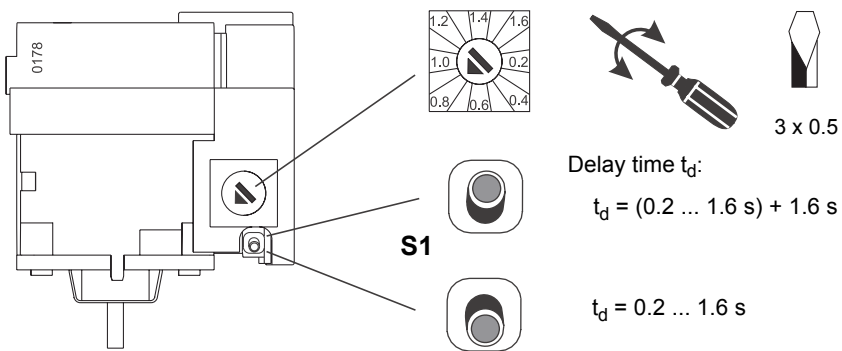
- (1) See-saw
- (2) Signalling switch
- (3) Guide
- (4) Groove

13.4 Setting delay times on undervoltage release

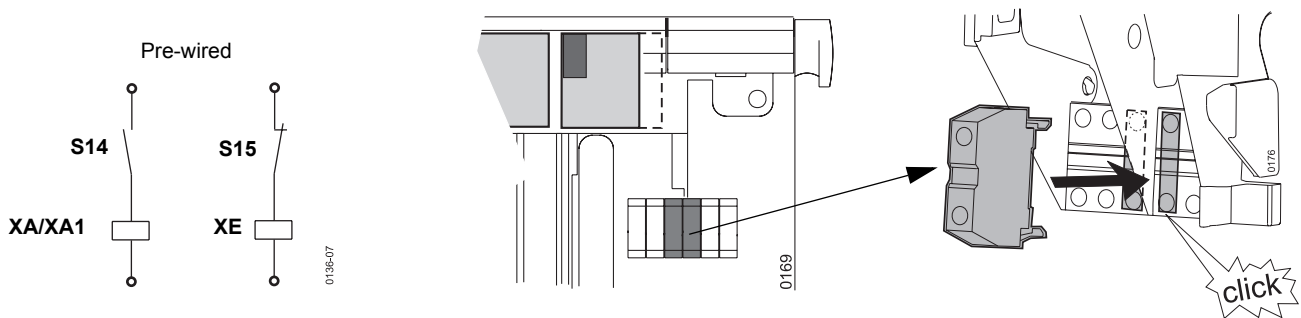
Instantaneous release XU



Time-delayed release XUV



13.5 Installation of cut-off switch for overexcited shunt release and closing coil



Note

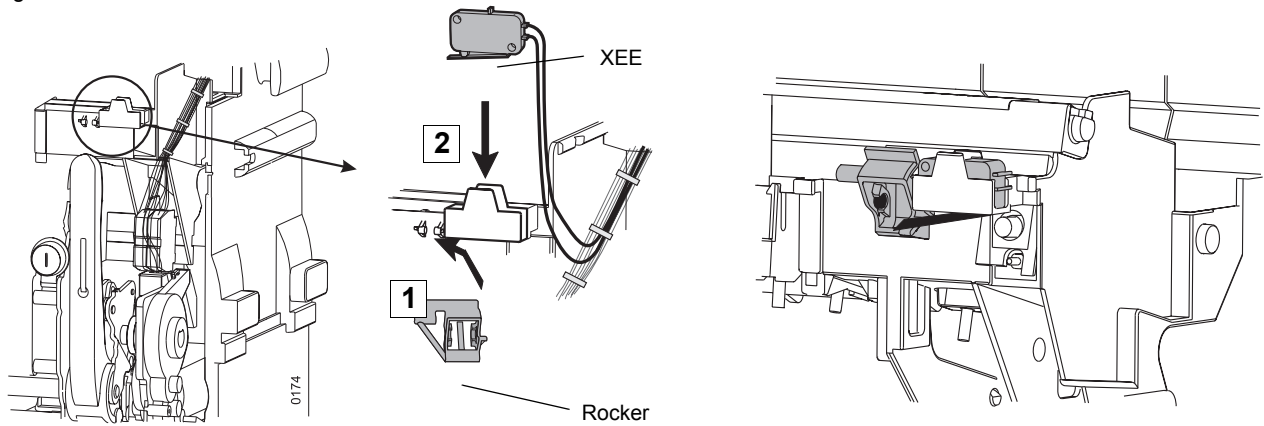
The cut-off switches S14 and S15 are supplied with the XE/A 5% duty factor.

13.6 Retrofitting Electrical ON

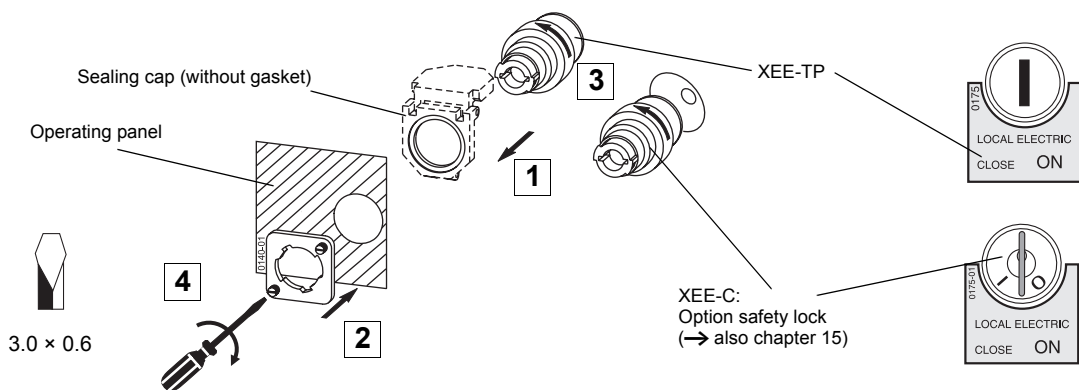
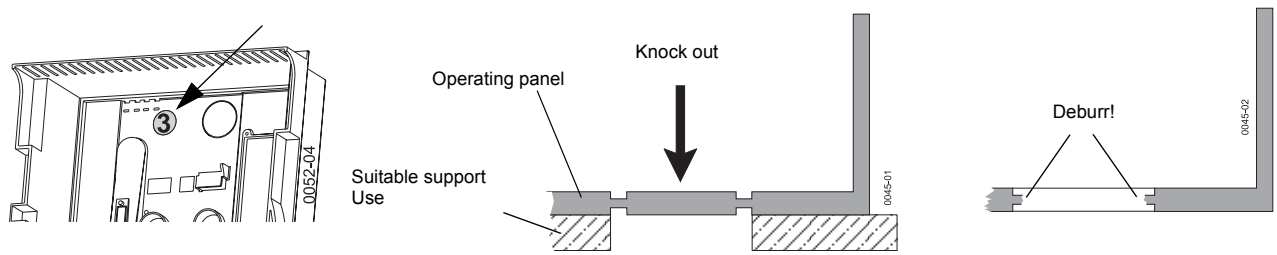
Cannot be combined with a motor cut-off switch.

Installing micro-switch

IZM-XEE-TP or IZM-XEE-C can be used only in combination with closing release.




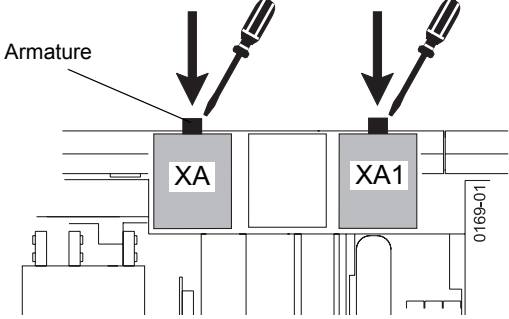
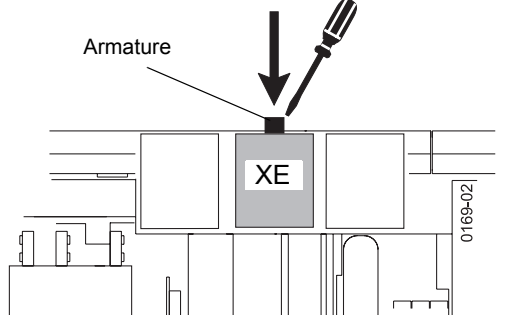
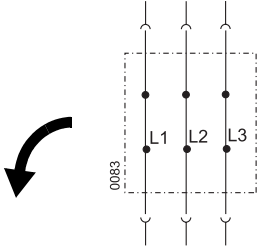
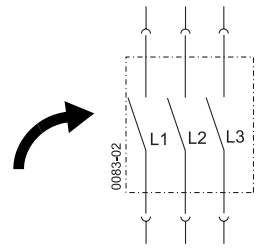
Inserting pushbutton



In order to avoid erroneous switch-on: Install a sealing cap XVD (option) on top.

13.7 Mechanical function test

CAUTION
 Danger if spring is charged!

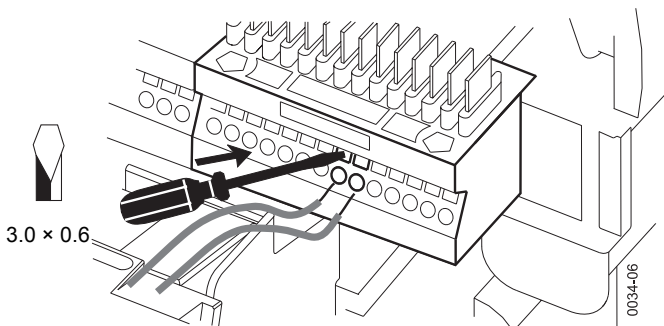
	Shunt release	Closing release
1	→ Charge the storage spring manually (page 6 – 4)	
2	→ Closing (page 6 – 5)	
3		
4	 <p>Circuit-breaker off</p>	 <p>Circuit-breaker on</p>
5		→ Switch off (page 6 – 5)

13.8 Connecting wires

Circuit diagrams (→ page 8 – 3)

Note

It may be necessary to retrofit missing control-circuit connections (knife contact rail, auxiliary plugs, sliding contacts for connection area) (→ page 5 – 16).




Terminals

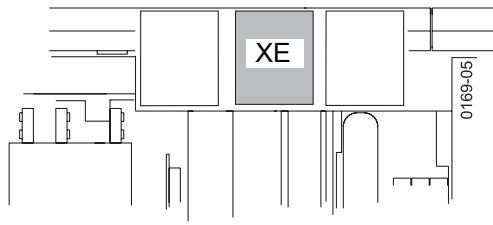
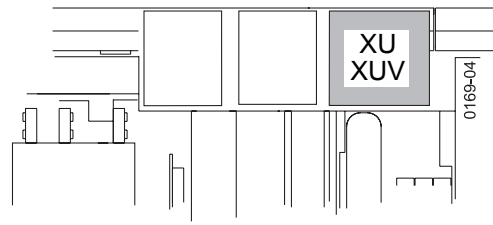
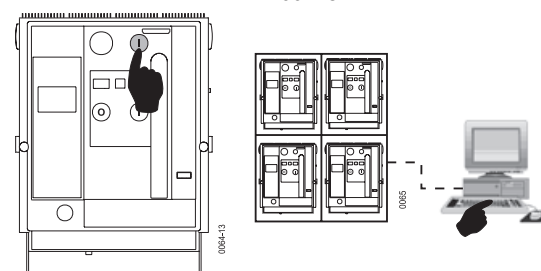

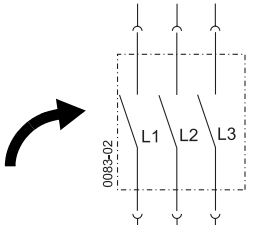

- XE : X6.7/X6.8
- XA : X6.13/X6.14
- XA1, XU : X5.11/X5.12
- XUV : X5.11 ... X5.14
- XEE : X7.9/X6.7

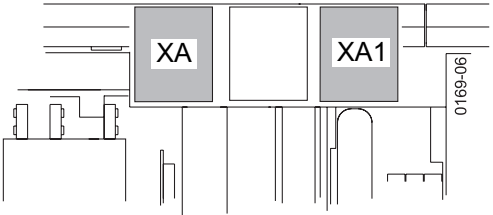
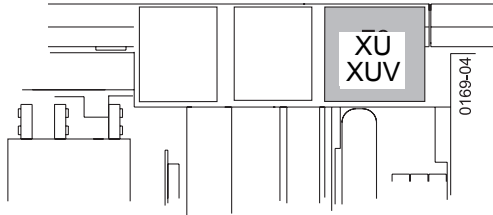
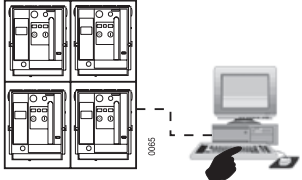
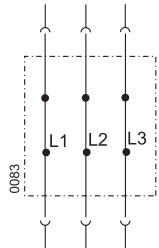
13.9 Finally

- Install front panel (→ page 24 – 13)
- Fitting control circuit plug (→ page 5 – 18)
- Connecting wires to control circuit plug (→ page 5 – 17)
- Withdrawable: move circuit-breaker to test position (→ page 6 – 2)

13.10 Electrical function test

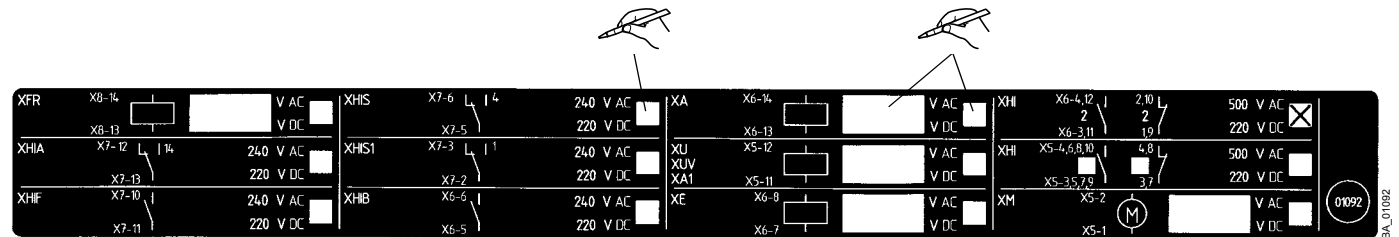
	CAUTION
	This function check must only be carried out with the front panel fitted. The withdrawable circuit-breaker should not be in the connected position.

	Closing release	Undervoltage release
1	→ Charge the storage spring manually (page 6 – 4)	
2		
3	<p>Closing release operation</p> <p>Electrical ON Remote activation > 200 ms</p> 	 <p>Interrupt XU/XUV auxiliary voltage!</p>
4	<p>Circuit-breaker switches on</p> 	

	Voltage releases	Undervoltage release
1	→ Charging the spring (page 6 – 4) → Closing (page 6 – 5)	
2		
3	Actuate voltage release Remote activation > 200 ms 	Interrupt XU/XUV auxiliary voltage!
4	Circuit-breaker switches off 	

13.11 Updating the options label

Use an indelible ink pen



13.12 Capacitor storage device

The capacitor storage device NZM-XCM is an upstream device for the shunt release. Without mains power the installed capacitor holds enough power for up to 12 hours to operate the shunt trip once. The configuration of the capacitor unit can be undertaken independently of the circuit-breaker. The NZM-XCM is connected to the incoming side.

Technical data:

Rated operational voltage	U_e	V AC	230
Rated operational current	I_e	mA	< 10
Inrush current (peak value)	I_e	A	3
Connection cross section, single-core- or multi-core with ferrule		mm ²	1 x 0.5 – 2.5) / 2 x (0.5 – 1.5)
		AWG	1 x (20 – 14) / 2 x (20 – 16)