18 Mutual mechanical interlocking

The mutual mechanical interlock can be found in use in 2 different versions:

→ **Version 1 up to 04/2007**
→ **Version 2 from 05/2007**

The version decides the use of differing Bowden cable types. This must be considered when the Bowden cable must be replaced in a **Version 1** (Article number
→ page 18 – 15)

With new orders for the interlock **Version 2** is always delivered with the current suitable Bowden cable.

Note

For the functioning of the interlocking certain conditions must apply in the switchboard:

1 The Bowden cable must be layed as straight as possible with as few bends as possible.

2 Bending radius of the Bowden cable > 500 mm.

3 The total bending angle of the Bowden cable must not exceed 540°.

4 For vertical assembly of interlocked circuit-breakers the interlock mechanism should be alligned.

5 Circuit-breakers that are to be interlocked must be so arranged so that the 2 m or 4.5 m long Bowden cables can be optimally laid out so that they fulfil points 1 to 4.

6 The Bowden cable must be fixed (e.g. with cable ties) before the adjustment.

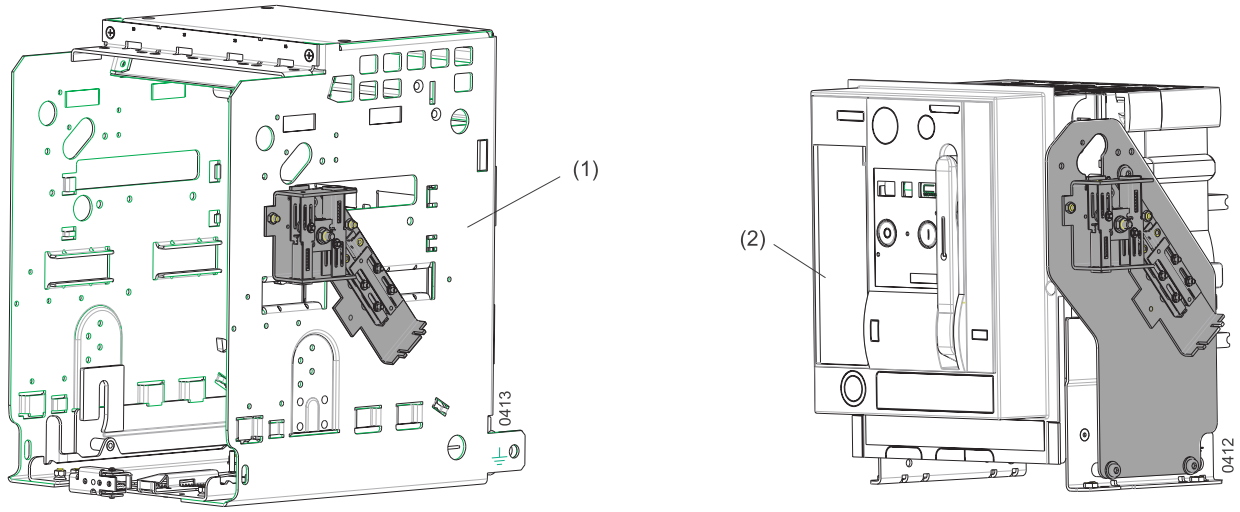
7 The adjustment freedom for the interlocking must be guaranteed by the selection of the panel width.

8 Apertures in parts of the system should be arranged that the Bowden cable run is not inhibited.

The mechanical interlocking in the standard design allows various versions for the mutual interlocking using a maximum of three circuit-breakers. Extensions are possible.

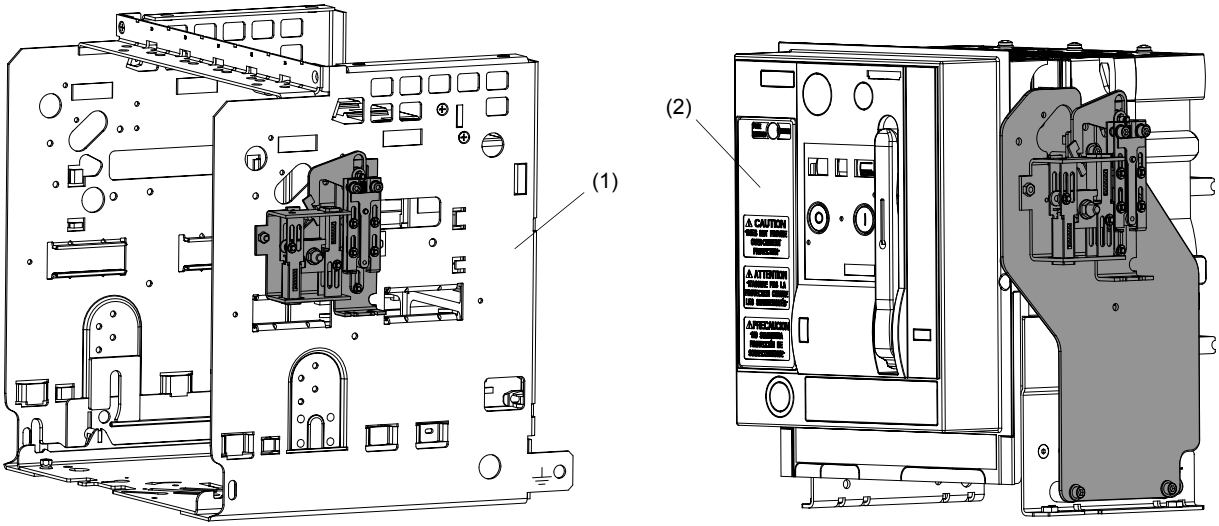
Interlocking module, Version 1

Fixed-mounted and withdrawable units can be combined.



(1) Withdrawable unit
(2) Fixed-mounted circuit-breaker

Interlocking module, Version 2



(1) Withdrawable unit
(2) Fixed-mounted circuit-breaker

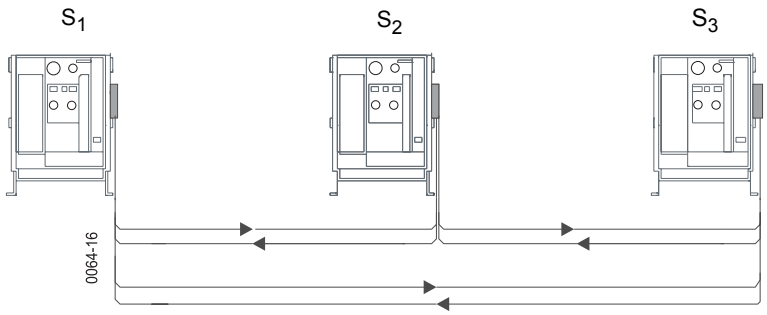
Designation	Part no.
Interlocking set per fixed-mounted circuit-breaker, incl. 2 m Bowden cables (= fig. (2) top)	(+)IZM-XMV
Locking set per withdrawable circuit-breaker, incl. 2 m Bowden cables	(+)IZM-XMV-AV
Adapter set for adaptation of the mechanical interlocking to withdrawable units frame size 3	(+)IZM3-XMVAS-AV
Additional Bowden cable, 2 m [1)]	IZM-XMVB200
Additional Bowden cable, 3 m [1)]	IZM-XMVB300
Additional Bowden cable, 4.5 m [1)]	IZM-XMVB450
Individual components for spare part purposes or separate order of withdrawable unit and circuit-breaker for withdrawable use	
Intermediate shaft with coupling (→ page 18 – 9)	(+)IZM-XMVAD
Locking set for withdrawable unit, incl. 2 m Bowden cables (= fig. (1) top)	IZM-XMVAD-AV

1) Bowden cable for replacement use → (page 18 – 15).

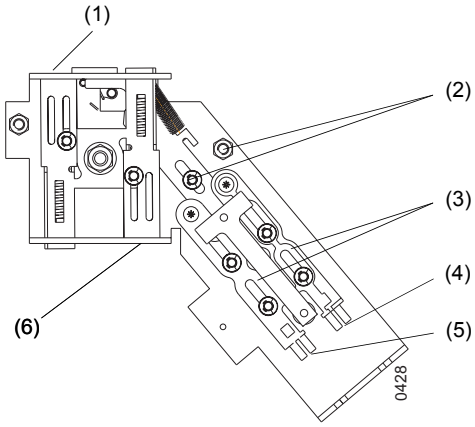
(IZM-XMV-AV) = (IZM-XMVAD) & (IZM-XMVAD-AV)

18.1 Configurations

18.1.1 General notes

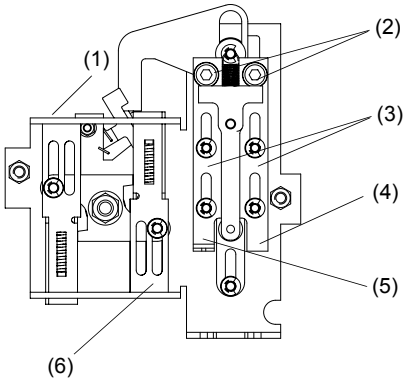


Version 1



(1) Output 1
(2) **Version 1:** Drilling for Plastite screw with toothed lock washer for interlock configuration
Version 2: Drilling with fixed nut for M6 cheese-headed screw with washer for interlock configuration.
(3) Index brackets
(4) Input 1
(5) Input 2
(6) Output 2

Version 2

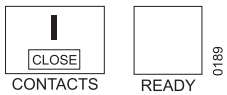
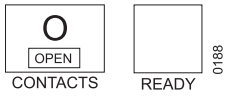
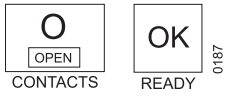


In the following configuration instructions, the following designations apply:

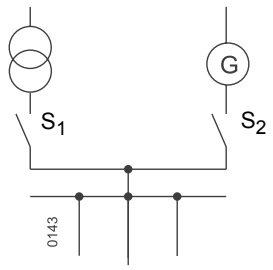
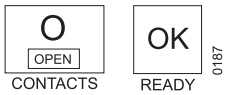
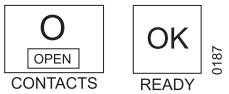
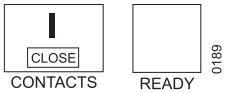
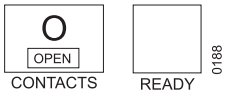
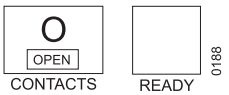
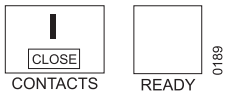
A_1: Output information 1
E_1: Input information 1
S_1: Circuit-breaker 1

For example, in order to couple the output information 1 of the circuit-breaker 1 with the input information 2 of the circuit-breaker 2 the abbreviation $S_1\ A_1$ - $S_2\ E_2$ is used.

The states of the circuit-breaker are shown on operating panel:

	Circuit-breaker closed
	Circuit-breaker open and not ready to close (interlocked)
	Circuit-breaker open and ready to close (not interlocked)

18.1.2 Two circuit-breakers against each other

<table>
<tr><th>Example</th><th colspan="2">Possible circuit-breaker states</th></tr>
<tr><td rowspan="4"> 
</td><td>S1</td><td>S2</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td> 
</td><td> 
</td></tr>
</table>

Description:

A circuit-breaker can be closed only if the other is open.

Materials required:

Each circuit-breaker has an interlocking module and a Bowden cable.

Connections of Bowden cables:

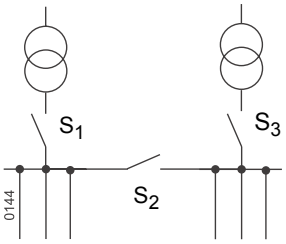
1st Bowden cable:	S1 A_1 –	S2 E_1
2nd Bowden cable:	S2 A_1 –	S1 E_1

Note:

S_x E_x

At these connections, the cheese-head screws must be screwed into the index brackets with strain washers.

18.1.3 Three circuit-breakers among each other

Example	Possible circuit-breaker states		
	S1	**S2**	**S3**
	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187
	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187
	O OPEN CONTACTS OK READY 0187	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS OK READY 0187
	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187	I CLOSE CONTACTS READY 0189
	I CLOSE CONTACTS READY 0189	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188
	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189	I CLOSE CONTACTS READY 0189
	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189

Description:

Any two circuit-breakers can be closed, with the third being interlocked.

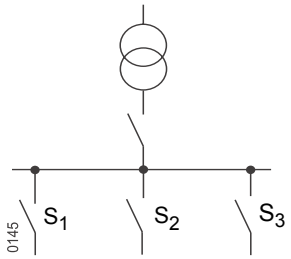
Materials required:

Each circuit-breaker has an interlocking module and a Bowden cable. Three additional Bowden cables must be ordered separately.

Connections of Bowden cables:

1st Bowden cable:	S1 A_1	–	S2 E_1
2nd Bowden cable:	S1 A_2	–	S3 E_1
3rd Bowden cable:	S2 A_1	–	S1 E_1
4th Bowden cable:	S2 A_2	–	S3 E_2
5nd Bowden cable:	S3 A_1	–	S1 E_2
6nd Bowden cable:	S3 A_2	–	S2 E_2

18.1.4 Three circuit-breakers among each other

Example	Possible circuit-breaker states		
	S1	**S2**	**S3**
	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187
	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188	O OPEN CONTACTS READY 0188
	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188
	O OPEN CONTACTS READY 0188	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189

Description:

At these connections, the cheese-head screws must be screwed into the non-interchangeable brackets with strain washers.

Materials required:

Each circuit-breaker has an interlocking module and a Bowden cable. Three additional Bowden cables must be ordered separately.

Connections of Bowden cables:

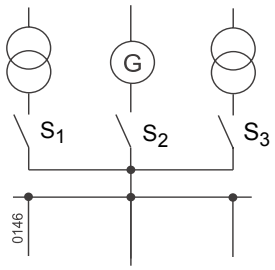
1st Bowden cable:	S1 A_1 –	S2 E_1
2nd Bowden cable:	S1 A_2 –	S3 E_1
3rd Bowden cable:	S2 A_1 –	S1 E_1
4th Bowden cable:	S2 A_2 –	S3 E_2
5nd Bowden cable:	S3 A_1 –	S1 E_2
6nd Bowden cable:	S3 A_2 –	S2 E_2

Note:

S_x E_x

At these connections, the cheese-head screws must be screwed into the index brackets with strain washers.

18.1.5 Three circuit-breakers against each other

Example	Possible circuit-breaker states		
	S1	**S2**	**S3**
	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS OK READY 0187
	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188	O OPEN CONTACTS OK READY 0187
	O OPEN CONTACTS OK READY 0187	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189
	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189
	O OPEN CONTACTS READY 0188	I CLOSE CONTACTS READY 0189	O OPEN CONTACTS READY 0188

Description:

Two circuit-breakers (S1, S3) can be independently opened and closed, the third (S_2) being ready to close only if the other two are open. If the third is closed, the other two cannot be closed.

Materials required:

Each circuit-breaker has an interlocking module and a Bowden cable. A Bowden cable must be ordered separately.

Connections of Bowden cables:

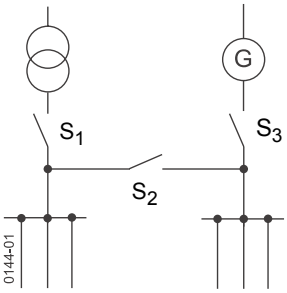
1st Bowden cable:	S1 A_1	–	S2 E_1
2nd Bowden cable:	S2 A_1	–	S1 E_1
3rd Bowden cable:	S2 A_2	–	S3 E_1
4th Bowden cable:	S3 A_1	–	S2 E_2

Note:

S_x E_x

At these connections, the cheese-head screws must be screwed into the index brackets with strain washers.

18.1.6 Three circuit-breakers, two of them against each other

Example	Possible circuit-breaker states		
	S1	**S2**	**S3**
	O OPEN CONTACTS — OK READY 0187	O OPEN CONTACTS — OK READY 0187	O OPEN CONTACTS — OK READY 0187
	O OPEN CONTACTS — OK READY 0187	I CLOSE CONTACTS — READY 0189	O OPEN CONTACTS — READY 0188
	O OPEN CONTACTS — OK READY 0187	O OPEN CONTACTS — READY 0188	I CLOSE CONTACTS — READY 0189
	I CLOSE CONTACTS — READY 0189	O OPEN CONTACTS — OK READY 0187	O OPEN CONTACTS — OK READY 0187
	I CLOSE CONTACTS — READY 0189	I CLOSE CONTACTS — READY 0189	O OPEN CONTACTS — READY 0188
	I CLOSE CONTACTS — READY 0189	O OPEN CONTACTS — READY 0188	I CLOSE CONTACTS — READY 0189

Description:

One circuit-breaker (S_1) can be opened and closed independently of the two others. The two others cancel each other out, i.e. one can only be closed if the other is open.

Materials required:

Two of the three circuit-breakers (S_2, S_3) each have an interlocking module and a Bowden cable.

Connections of Bowden cables:

1st Bowden cable:	S2 A_1 –	S3 E_1
2nd Bowden cable:	S3 A_1 –	S2 E_1

Note:

S_x E_x

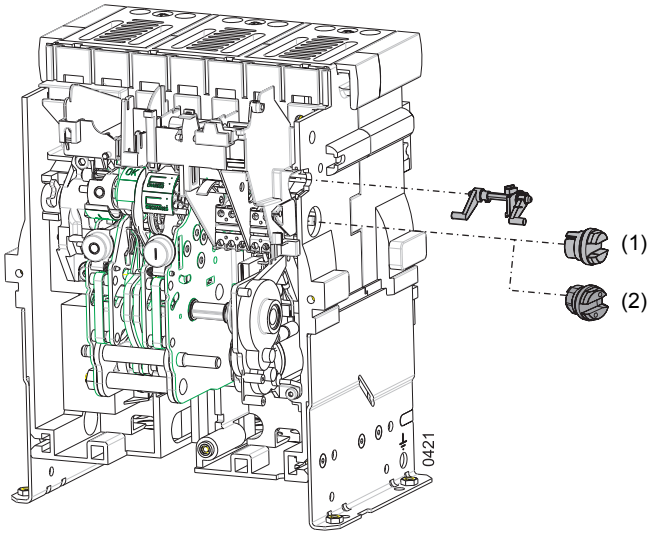
At these connections, the cheese-head screws must be screwed into the index brackets with strain washers.

18.2 Retrofitting interlocking module

	WARNING
	**Before working on the device be sure to switch off the switchboard and earth the device.**

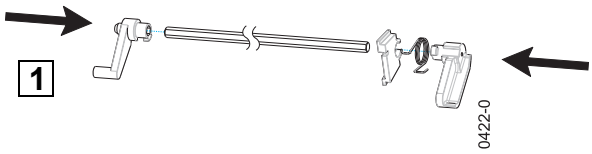
– Switching off and discharging the spring(→ page 24 – 2)
– Remove the circuit-breaker from the withdrawable unit (→ page 24 – 3) or remove the fixed-mounted circuit-breaker if necessary (→ page 5 – 1)
– Remove front panel and right side cover, if required (→ page 24 – 6)

18.2.1 Installing intermediate shaft and coupling



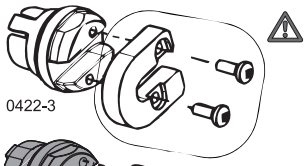
(1) **Interlocking module, Version 1**
(2) **Interlocking module with ring, Version 2**

Fitting

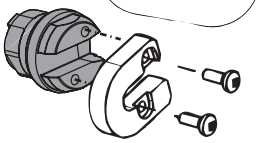


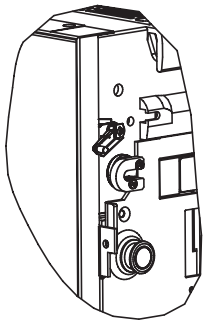
Frame size	Length L (mm)
IZM(IN).1-...	48
IZM(IN).2-...	118
IZM(IN).3-...	232

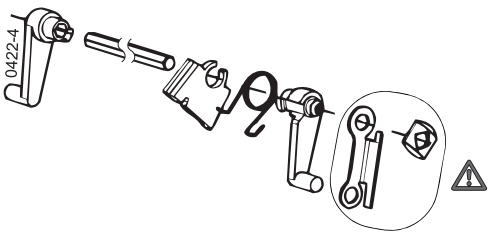
Interlocking module, Version 1



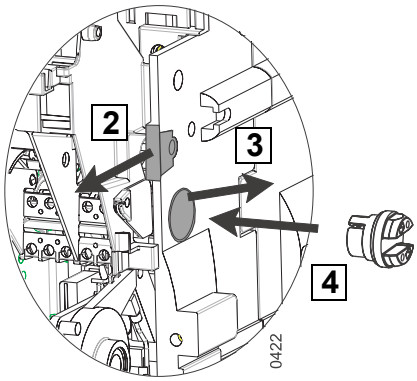
Interlocking module with ring, Version 2

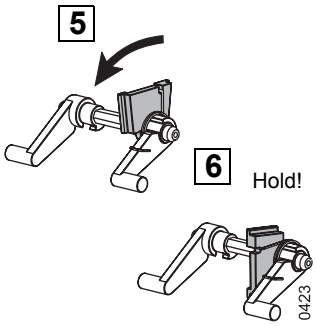


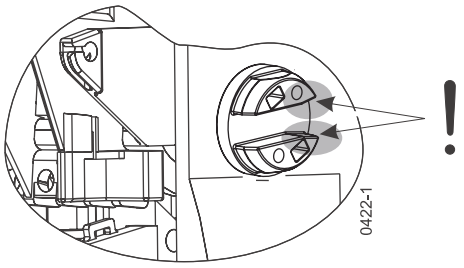


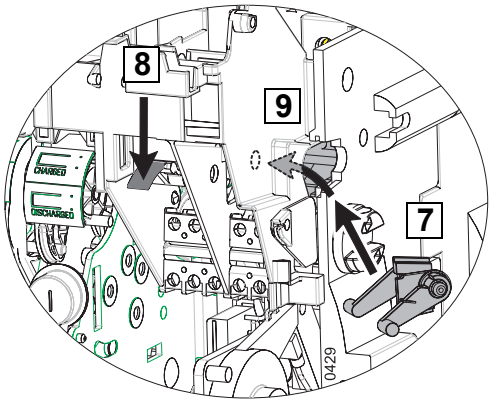


	Additional adapter devices have to be mounted for withdrawable units frame size 3 (IZM(IN).3-... + IZM-XAV...) only. (Also order adapter set (+)IZM3-XMVAS-AV!)



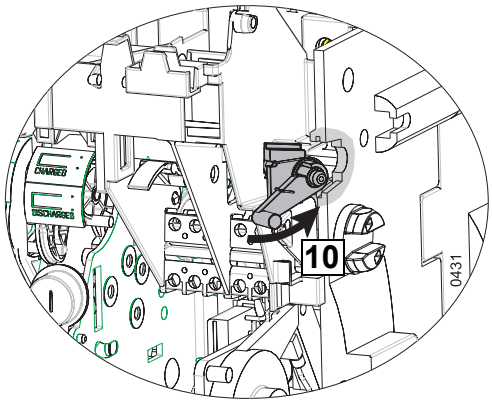


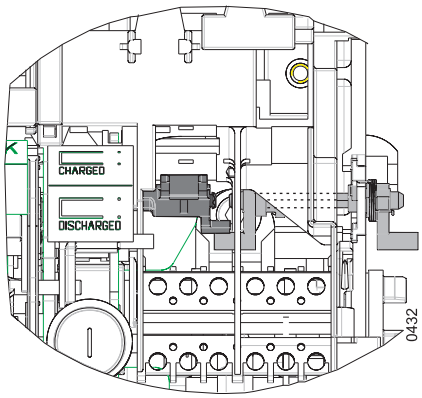




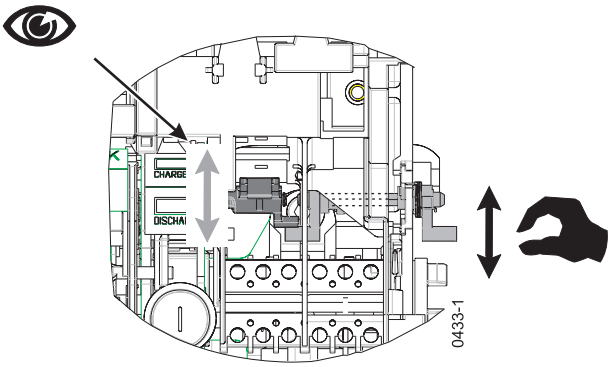
Note

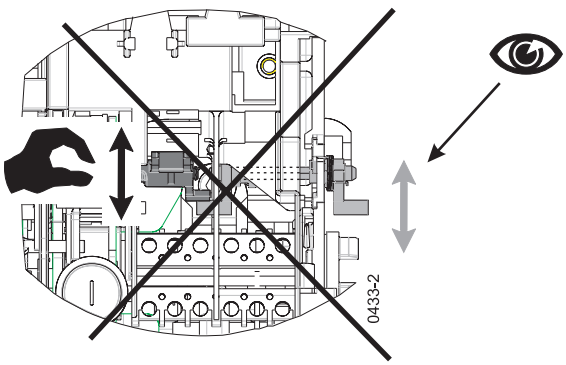
In working step **9**, the intermediate shaft must engage in a hole inside the circuit-breaker.
Only then it will be possible – in working step **10** – to fit the support for the intermediate shaft in the guide of the side wall.





Function check





Then:

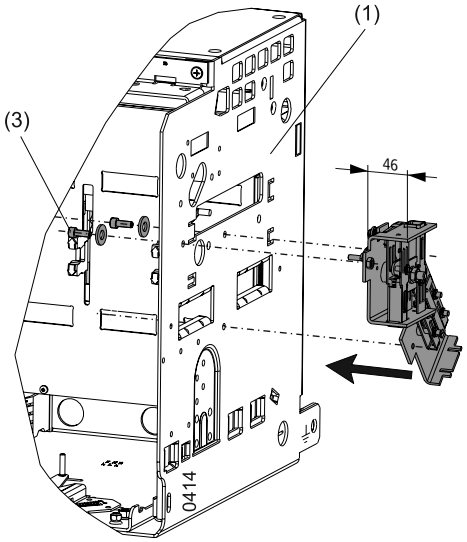
– Fit back front panel and right side cover, if it was removed
(→ page 24 – 13)

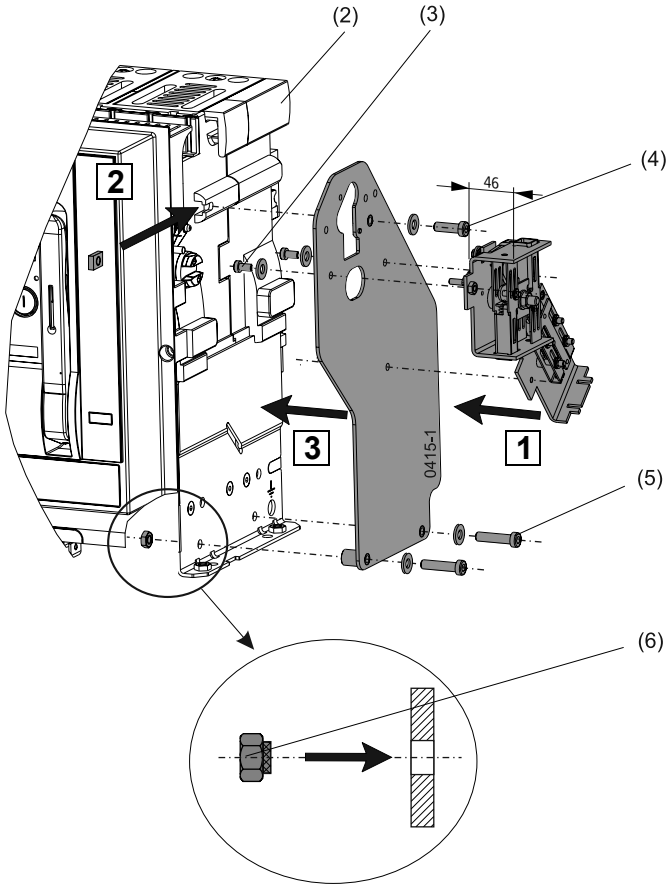
18.2.2 Installing interlocking module

Note

If there isn't enough free space for installation on the right side of the circuit-breaker inside the cubicle, it may be advantageous to pre-assemble the Bowden cables on the outgoing side before fitting the interlocking module. (→ page 18 – 13)

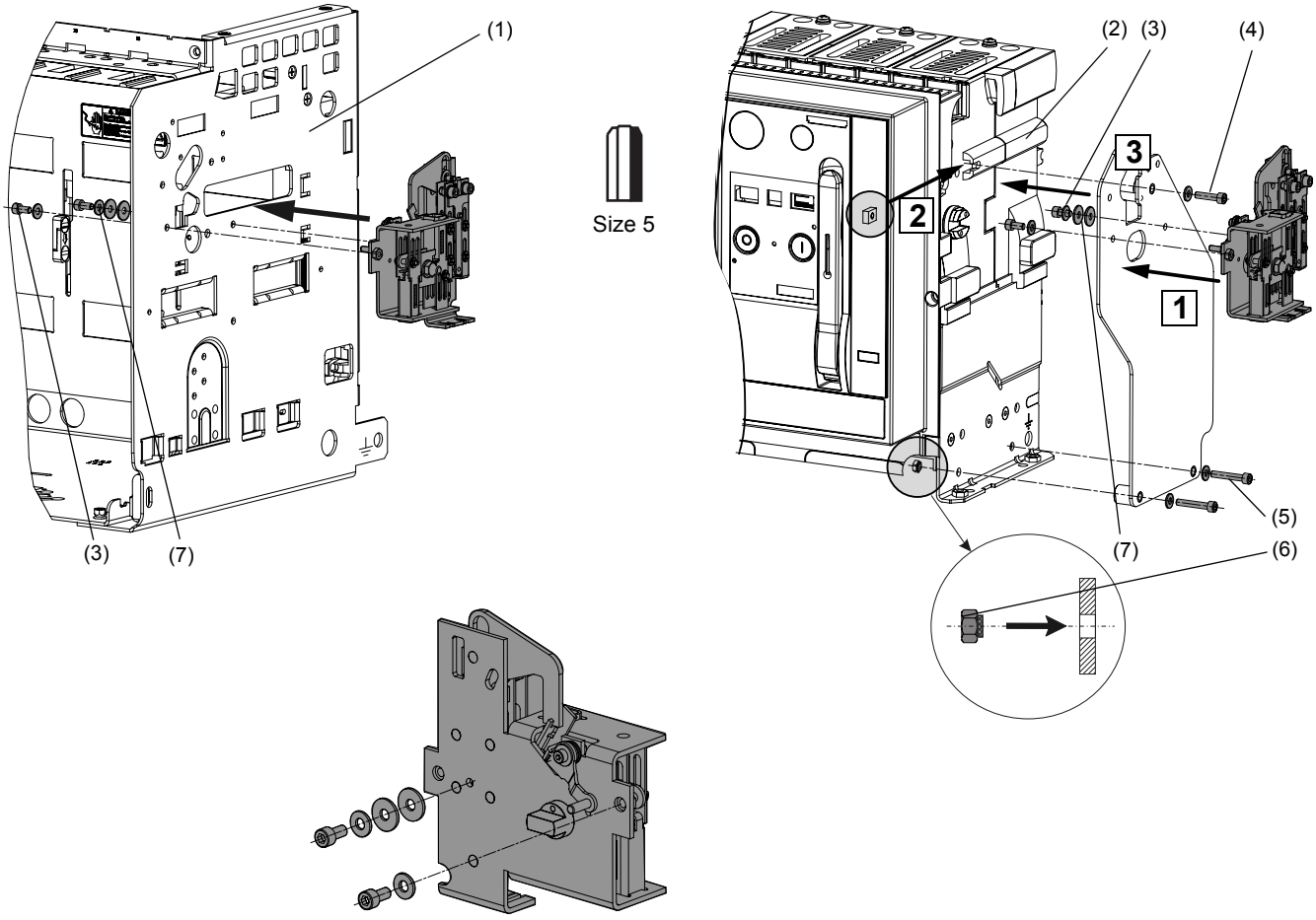
Interlocking module, Version 1





(1) Withdrawable unit
(2) Fixed-mounted circuit-breaker
(3) 3x hexagon socket bolt M6x12 with strain washer
(4) 1x Allen screw M6x20 with strain washer and square nut
(5) 2x hexagon socket bolt M6x30 with strain washer
(6) 2x press nut; penetrates into mounting foot by tightening; if necessary, prevent press nut from rotating

Interlocking module, Version 2



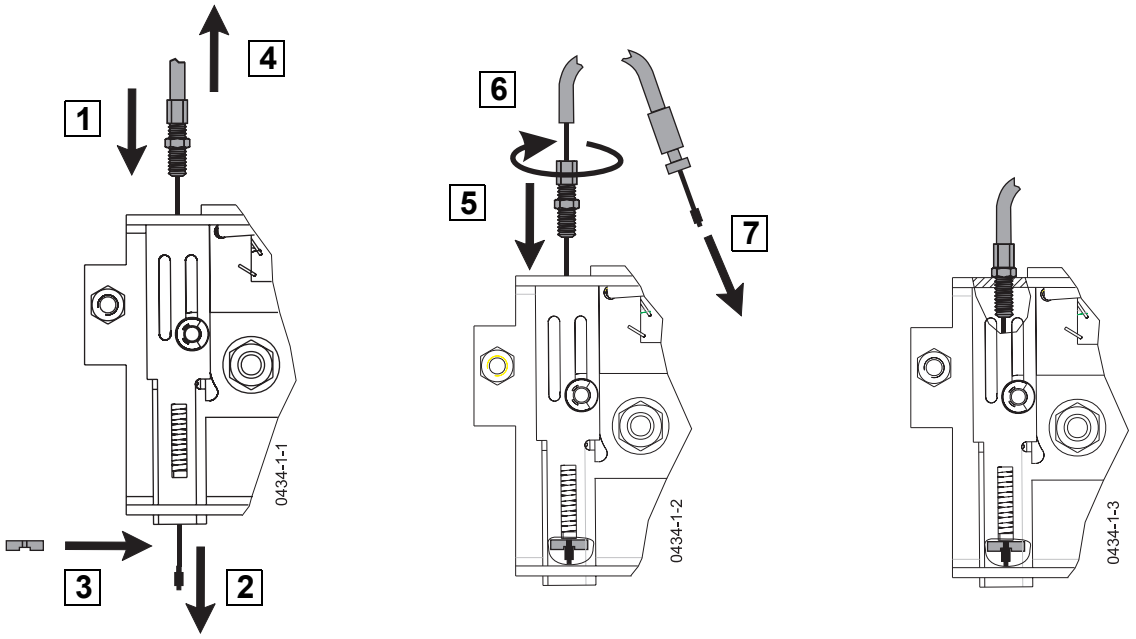
(1) Withdrawable unit
(2) Fixed-mounted circuit-breaker
(3) 2x Allen screw M6x12 with strain washer
(4) 1x Allen screw M6x25 with strain washer and square nut
(5) 2x hexagon socket bolt M6x35 with strain washer
(6) 2x press nut; penetrates into mounting foot by tightening; if necessary, prevent press nut from rotating
(7) 2x washers with large external diameter

Then:

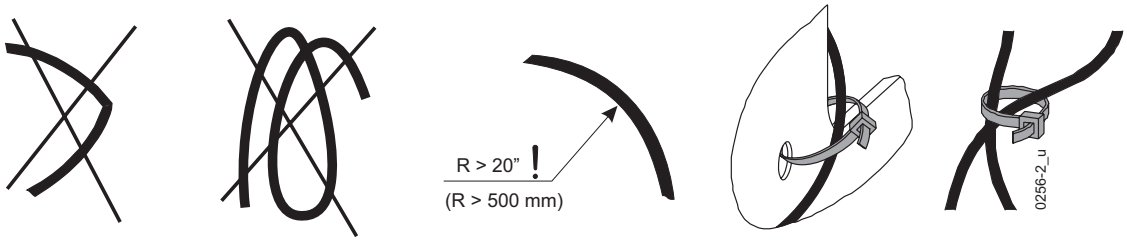
– Re-install the fixed circuit-breaker (→ page 5 – 1)

18.2.3 Mounting the Bowden cables

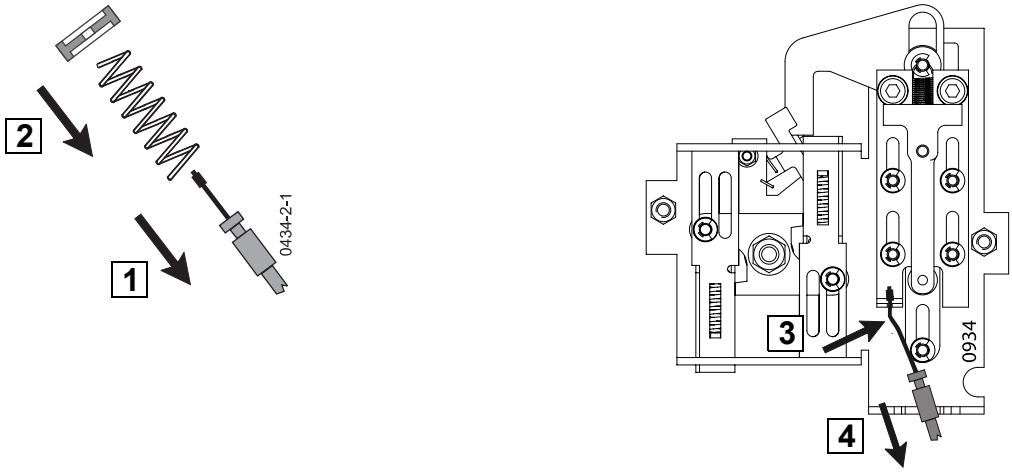
Fitting Bowden cables on output site

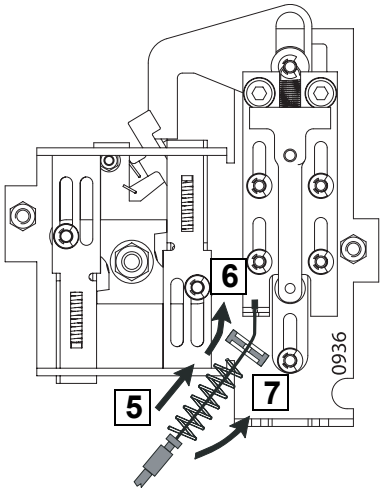


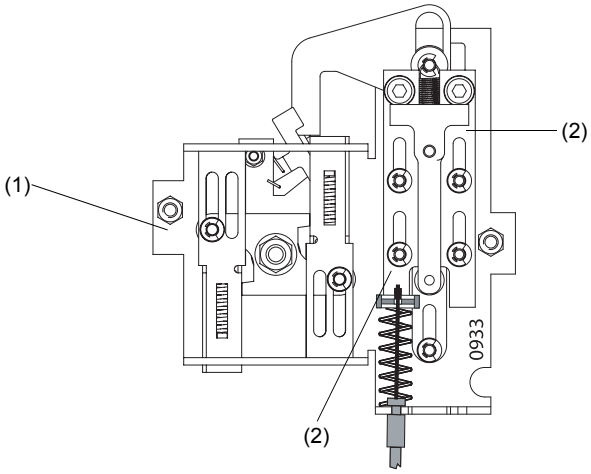
Fix the Bowden cables



Installing the Bowden cables at the entrance of the circuit-breaker to be interlocked

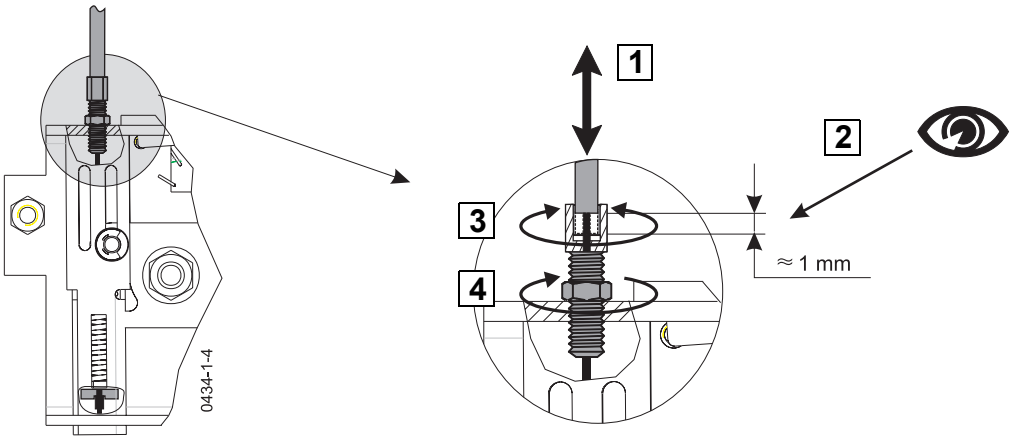






(1) Version with steel Index bracket
(2) Index brackets

Adjusting the Bowden cables



Then:

– According to the planned configuration of the circuit-breaker interlocking, screw cheese-head bolts with strain washers into the associated index brackets if applicable → Configurations (page 18 – 3).
– Insert the withdrawable circuit-breaker, push into disconnected position, close the cubicle door if necessary and rack into connected position (→ page 6 – 1).

18.2.4 Function test

– Close the cubicle doors
– Charge spring of circuit-breakers to be interlocked (→ page 6 – 4)
– Test the various possibilities of the planned interlocking configuration one after the other
– Re-adjust Bowden cables if necessary

Then:

– Discharge spring of the circuit-breakers to be interlocked (→ page 24 – 2)

Note

Observe the following maintenance instructions:

1 Check the Bowden cable setting after the first 100 operations and readjust if necessary!

2 Check the setting again after another 1000 operations or min one year and readjust if necessary!

3 The Bowden cables should be also checked for kinks and wear, damaged wires, damage to the sleeving and adjustment unit (sleeving with adjustment thread and nut) and if necessary exchanged.

4 With increased environmental conditions, e.g. increased ambient temperature or increased pollution potential this maintenance cycle must be correspondingly shortened.

5 At contact service and at the latest when the maximum permissible electrical operations of the appropriate frame size the wear parts of the interlock should be changed, → Table, page 18 – 15.

Mutual mechanical interlocking		**Part no.**
for drawer packet[1)]		(+)IZM-XMV-AV
for drawer area[1)]		IZM-XMVAD-AV
for withdrawable circuit-breaker		(+)IZM-XMVAD
For fixed-mounted circuit-breaker[1)]		(+)IZM-XMV
Wearing parts of interlock		
1 Bowden cable 2000 mm (M5)[2)]	for interlock module **Version 1**	IZM-XMVB200-06
1 Bowden cable 3000 mm (M5)[2)]		IZM-XMVB300-06
1 Bowden cable 4500 mm (M5)[2)]		IZM-XMVB450-06
1 Bowden cable 2000 mm (M8x1)	for interlock module **Version 2**	IZM-XMVB200
1 Bowden cable 3000 mm (M8x1)		IZM-XMVB300
1 Bowden cable 4500 mm (M8x1)		IZM-XMVB450
1 Coupling on circuit-breaker (with Ring)		IZM-XMVK
If a Version 1 and a Version 2 interlock module must be connected with each other the appropriate Bowden cable (→ part no.) must be used.		

1) With Bowden cable 2000 mm.
2) Up to 04/2007.

19 Accessories for withdrawable unit

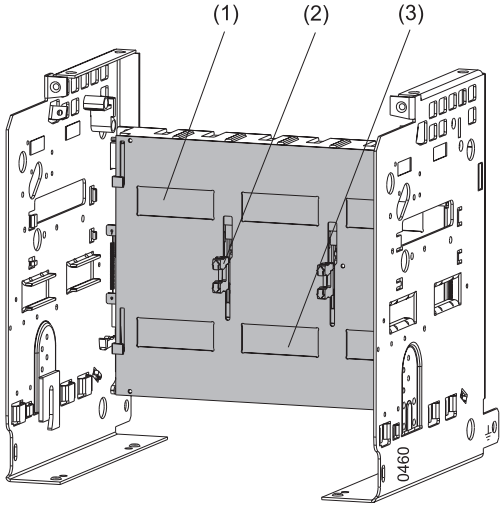
	Designation	Frame size	Part no.
19.1	Shutters (Protection against direct contact)	IZM(IN).1-... IZM(IN).2-... IZM(IN).3-... IZM(IN).1-4-... IZM(IN).2-4-... IZM(IN).3-4-...	(+)IZM1-XIKL (+)IZM2-XIKL (+)IZM3-XIKL (+)IZM1-XIKL4 (+)IZM2-XIKL4 (+)IZM3-XIKL4
19.2	Coding between circuit-breaker and withdrawable unit		
19.2.1	Rated current dependant coding	–	Standard
19.2.2	Version dependant coding	–	IZM-XCE
19.3	Position signalling switches for withdrawable unit	Module 1 Module 2	(+)IZM-XHIAV1 (+)IZM-XHIAV2

19.1 Shutters

The shutter locking straps lock the laminated contacts of the withdrawable unit as soon as the circuit-breaker is taken out, thus fulfilling a shock protection function.

The locking straps can be lifted manually with the strap lifters.

The strap lifters can be fixed in several positions by means of padlocks and secured against unauthorized changes.
(→ page 15 – 16)



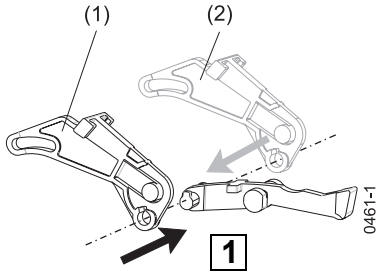
(1) Upper locking strap
(2) 4 Strap lifters
(3) Lower locking strap

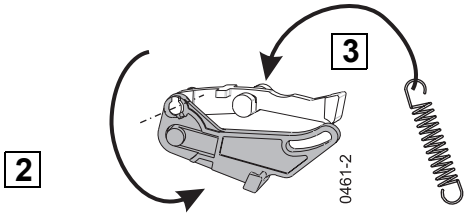
19.1.1 Retrofitting

	WARNING
	**Before working on the device be sure to switch off the switchboard and earth the device.**

– Switching off and discharging the spring(→ page 24 – 2)
– Remove the circuit-breaker from the withdrawable unit (→ page 24 – 3)

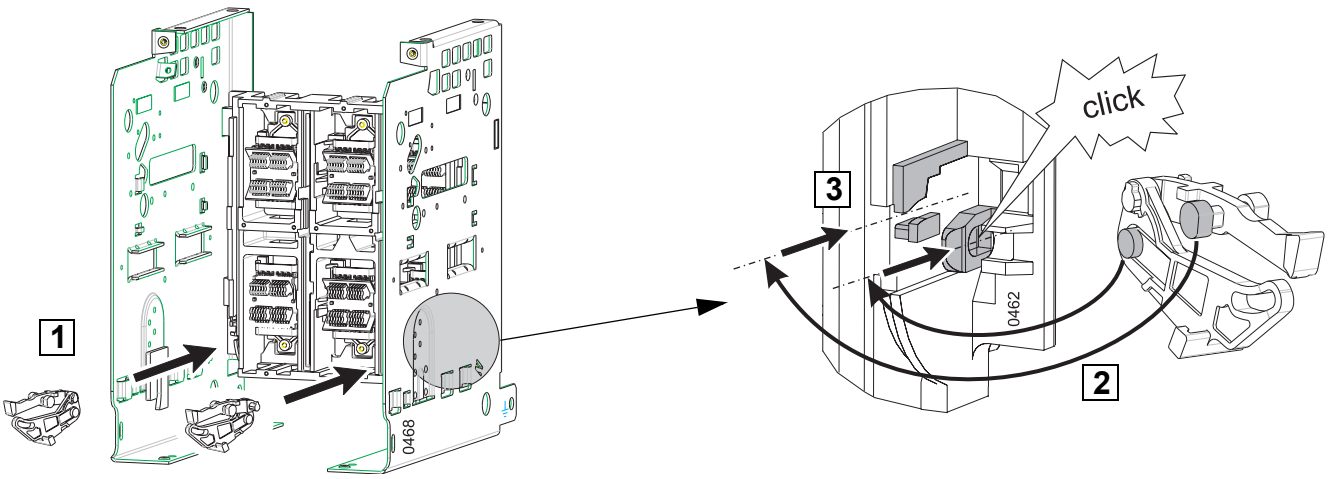
Assembling actuator and completing with spring





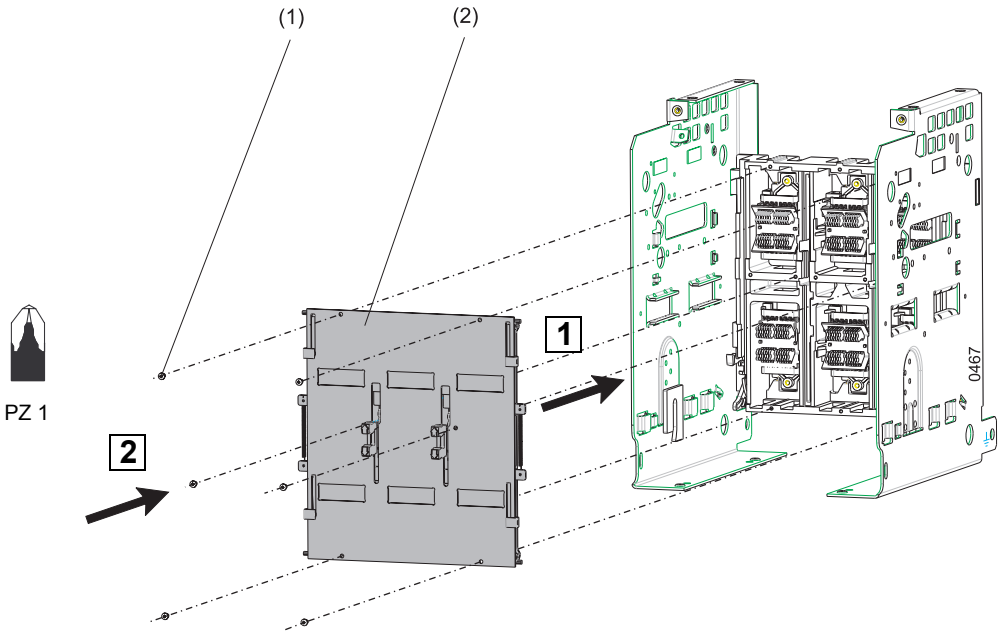
(1) Assembly for right side
(2) Assembly for left side

Inserting actuator



Fitting shutter

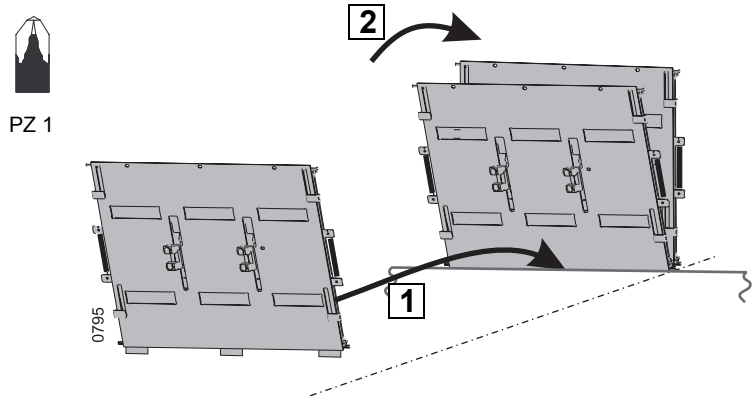
CAUTION
Tighten self-tapping screws carefully!



(1) Self-tapping screws (Number dependant upon circuit-breaker version)

(2) Shutter with strap lifters and locking straps

Only for IZM(IN).3-...

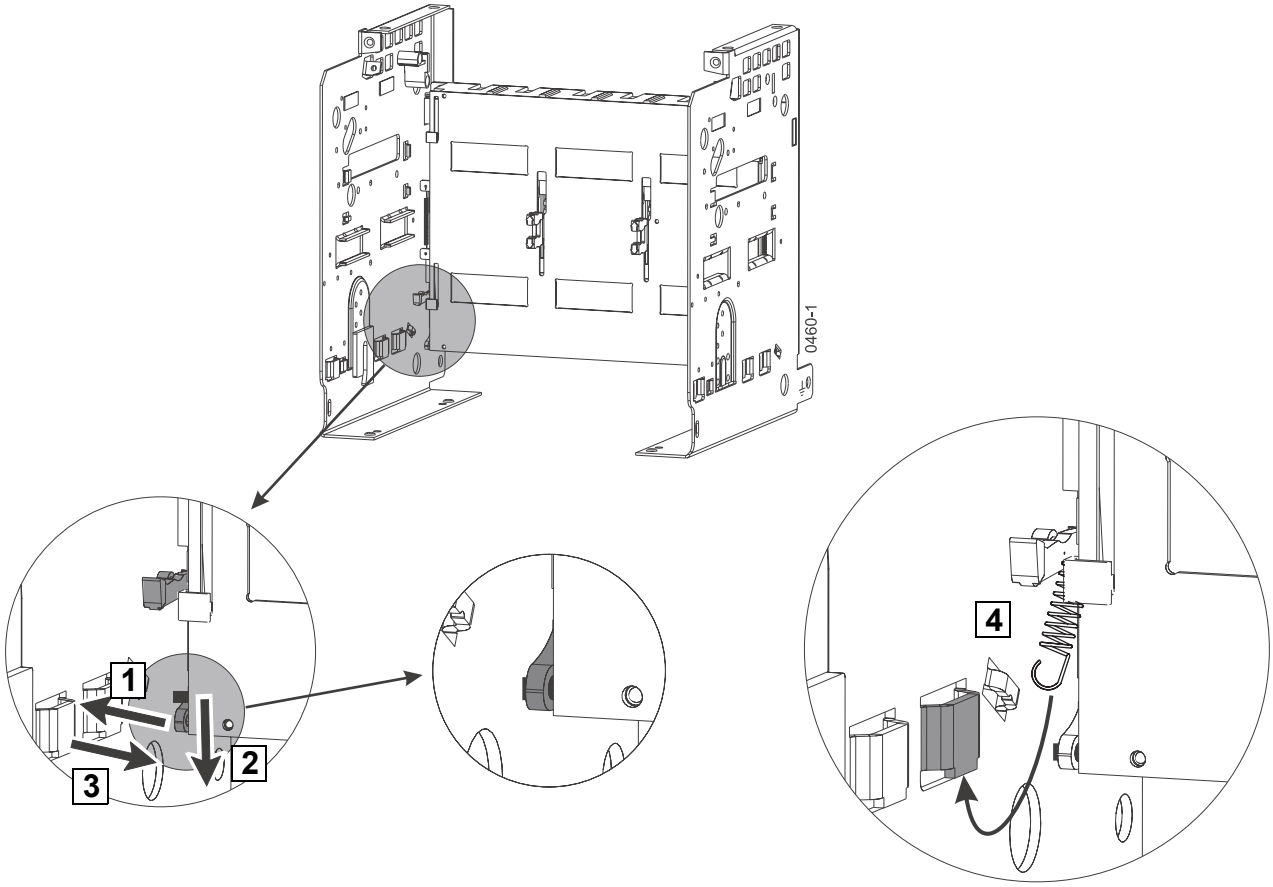


1 Set the shutter at an angle in the slot of the bottom cross-fixing
2 Push the shutter back to the back plate and fix at the top with 3 screws.

Note

For the next step – latching the shutter in the actuator – it may be advantageous to fit the lower screws after latching.

Latching shutter in actuator and fitting spring



Note

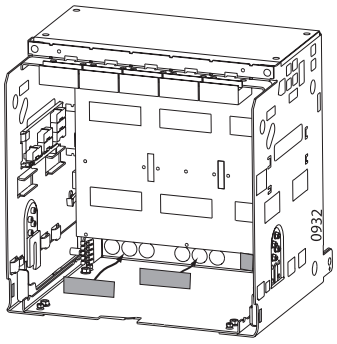
Assure proper operation
by moving each locking strap independently.

Then:

– Insert the circuit-breaker in the withdrawable unit and rack into connected position (→ page 6 – 1)

Close access holes

Access holes for the front connection of mains conductors can be covered with suitable adhesive pads.

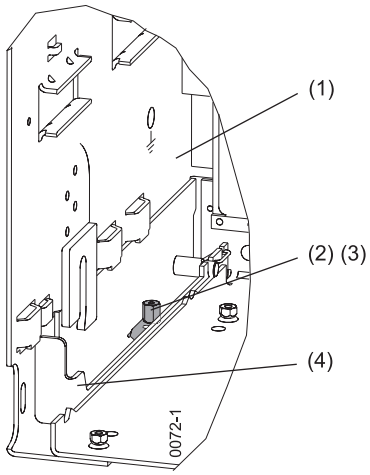


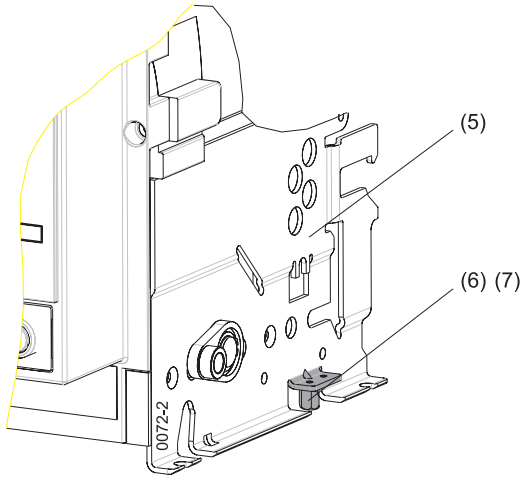
19.2 Coding circuit-breaker - withdrawable unit

19.2.1 Rated current coding

Circuit-breakers and withdrawable units are equipped with a current coding as standard.

This coding ensures that only those circuit-breakers can be inserted in the withdrawable unit whose contact blades fit into the laminated contacts of the withdrawable unit.



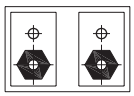
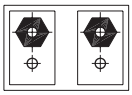
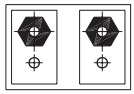
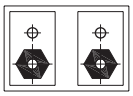
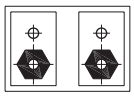
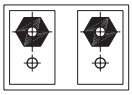
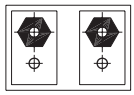
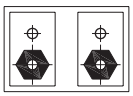
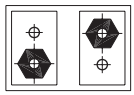
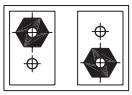
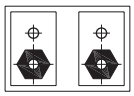
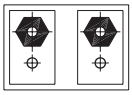
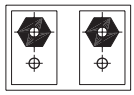
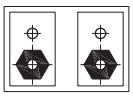
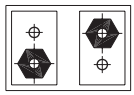
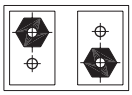


(1) Withdrawable unit, left inner side; right inner side analog
(2) Coding bolts on the guide rails in the withdrawable unit
(3) Self-tapping screw M5x12
(4) Guide rail
(5) Withdrawable circuit-breaker, right side; left side analog
(6) Coding bolt on the withdrawable circuit-breaker
(7) Self-tapping screw M4x16

When the withdrawable unit is ordered complete with circuit-breaker, the rated current coding is already set in the factory. If a fixed-mounted circuit-breaker has to be converted into a withdrawable circuit-breaker, the rated current coding must be retrofitted.

Retrofitting the rated current coding

Mount the coding bolts at the circuit-breaker feet and at the guide rails according to the following scheme:

Frame size	Rated current	Coding			
		Circuit-breaker		Withdrawable unit	
		Left	Right	Left	Right
IZM(IN).1-...	1000 A				
	1600 A				
IZM(IN).2-...	2000 A				
	2500 A				
	3200 A				
IZM(IN).3-...	4000 A				
	5000 A				
	6300 A				

19.2.2 Option-related coding

Circuit-breakers and withdrawable units can be retrofitted with a version-related coding.

In this way, the circuit-breaker and the withdrawable unit can be assigned to each other unmistakably considering different equipement. If the circuit-breaker and the withdrawable unit have a different coding, it will not be possible to rack in the circuit-breaker.

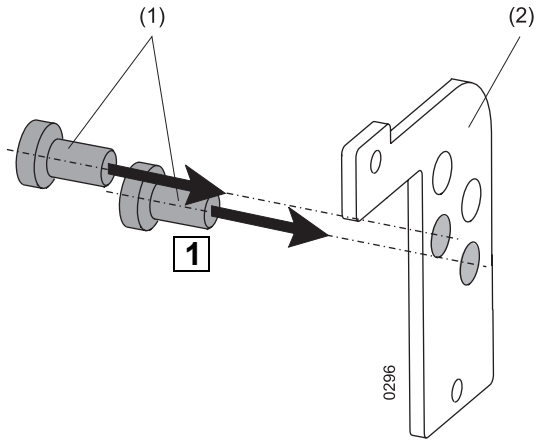
There are 36 selectable coding possibilities.

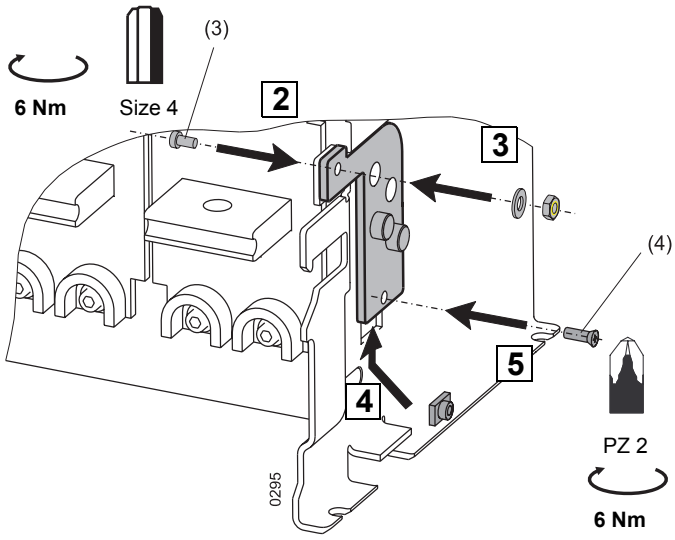
Before installation:

– Switching off and discharging the spring(→ page 24 – 2)

– Remove the circuit-breaker from the withdrawable unit (→ page 24 – 3)

Fitting coding onto circuit-breaker





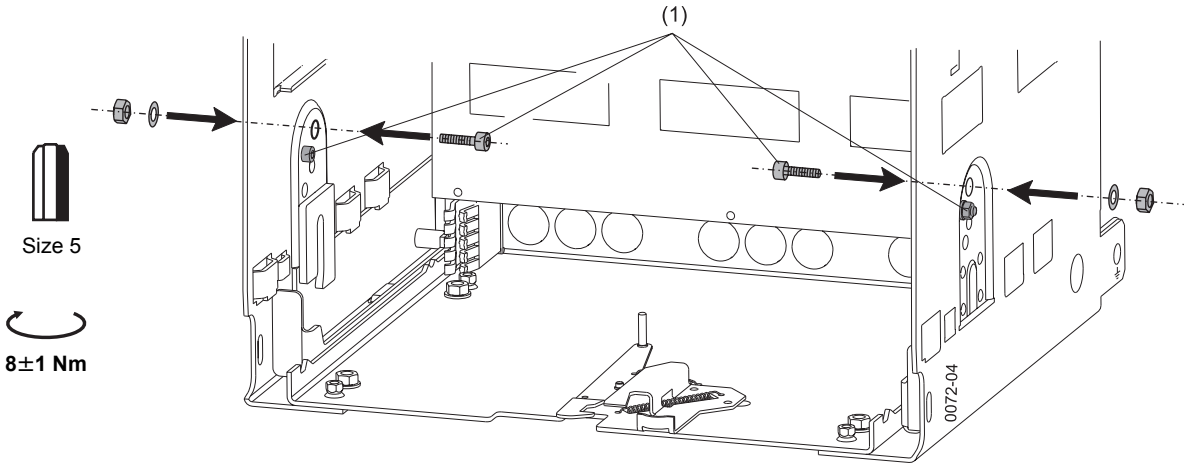
(1) Coding pins
(2) Coding plate
(3) Hexagon socket bolt M5 with strain washer and nut
(4) Countersunk-head bolt M5 with square nut

For IZM(IN).3-...:

– Mount coding plate in horizontally mirrored position

– For fixing only the two bolts are required without nuts and washers.

Fitting coding on withdrawable unit

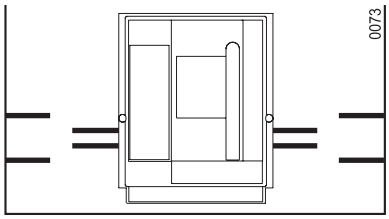


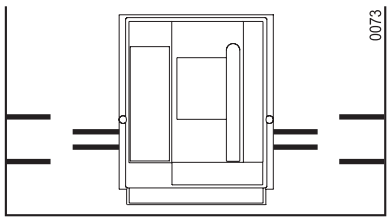
(1) Max. 4 hexagon socket bolts M6 with strain washer and nut as coding element

Then:

– Insert the circuit-breaker in the withdrawable unit and rack into connected position (→ page 6 – 1)

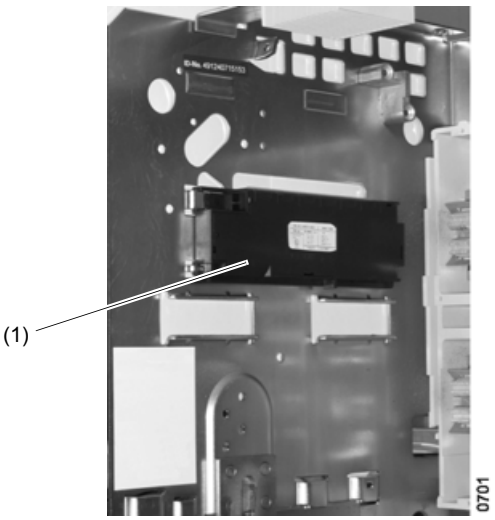
Coding variants

No.	 ● = with coding element ○ = without coding element	Used for:
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		

No.	 ● = with coding element ○ = without coding element		Used for:
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			

19.3 Position signalling switch for withdrawable unit

Position signalling switches can be retrofitted at the withdrawable unit. With their help, the circuit-breaker position in the withdrawable unit can be evaluated on the customer's side.



(1) Position signalling switch module

There are three options available.

Option 1:

– S30: Signalling switch for disconnected position
– S31 Signalling switch for test position
– S34 Signalling switch for connected position

Option 2:

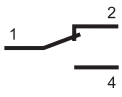
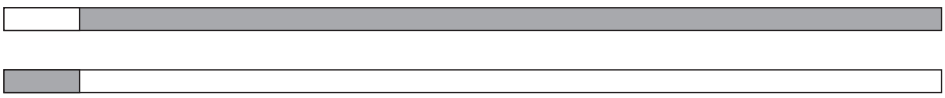
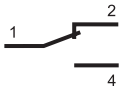
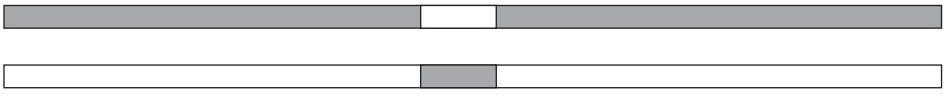
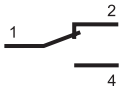
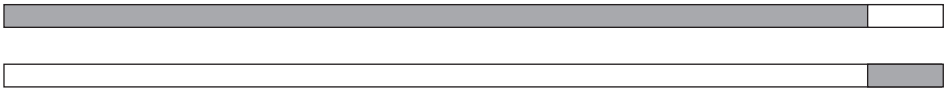
– S30: Signalling switch for disconnected position
– S31/S32 Signalling switch for test position
– S33/S34/S35: Signalling switches for connected position

Connections

A row of spring terminals for rated cross section
1 x 0.5 mm^2 to 1 x 2.5 mm^2.

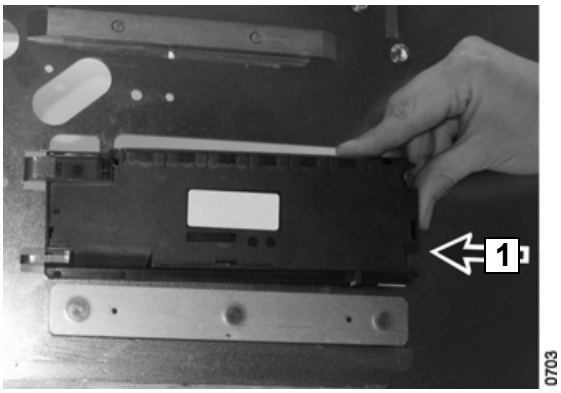
Position signalling switch module	Part no.
Option 1:	(+)IZM-XHIAV1
Option 2:	(+)IZM-XHIAV2

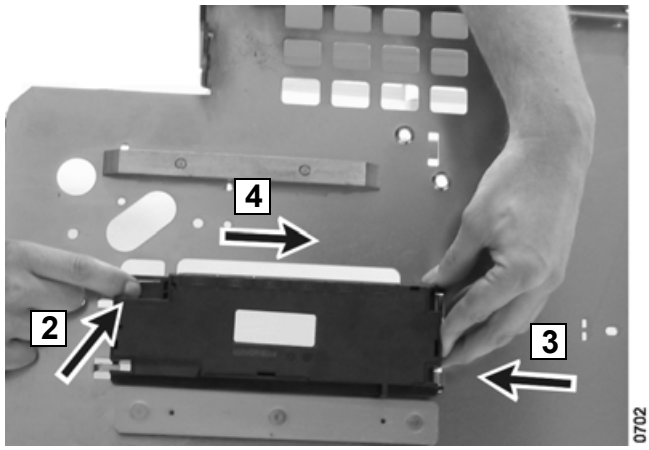
Circuit-breaker position and contacts

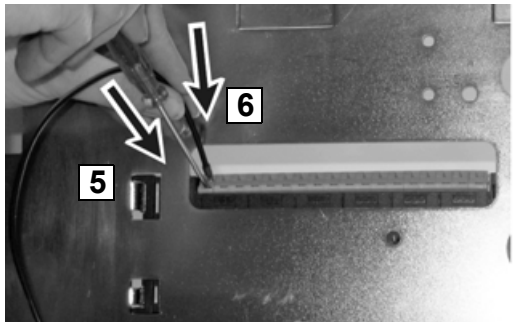
Signalling switch	Contacts	Circuit-breaker position		
		Disconnected position	Test position	Connected position
S30				
S31/S32				
S33/S34/S35				

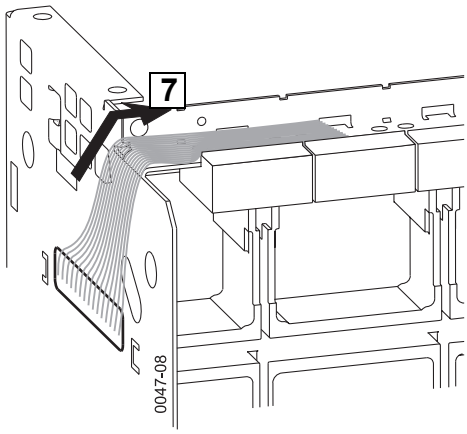
– Contact opened
– Contact closed

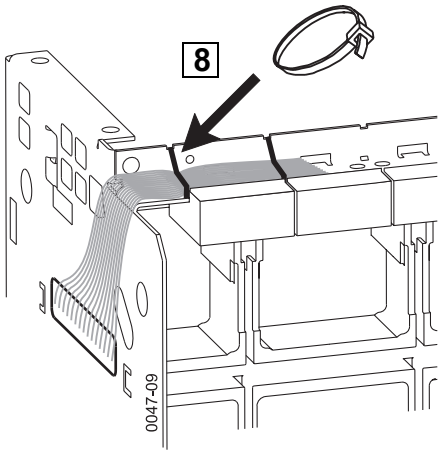
Mounting









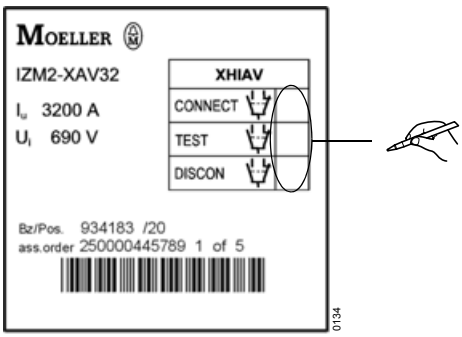


Then:

– Insert the circuit-breaker in the withdrawable unit and rack into connected position (→ page 6 – 1)

Updating the withdrawable unit label

Use an indelible ink pen

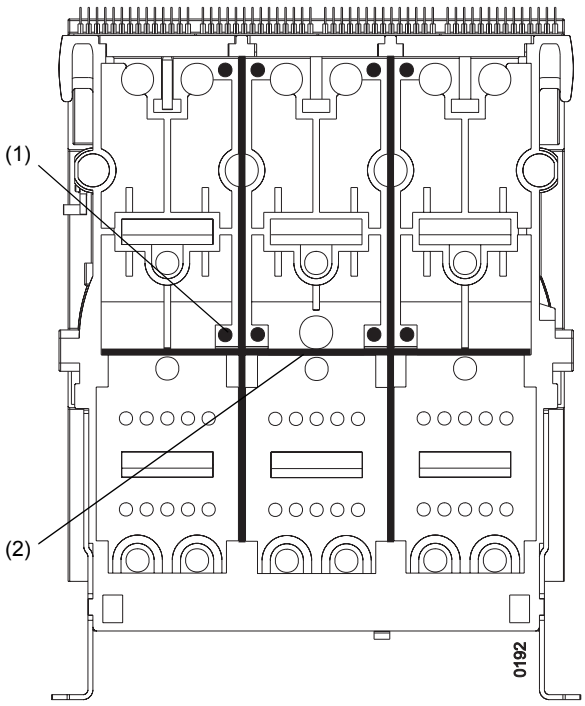


20 Phase barriers

The panel manufacturer can provide phase barriers made of insulating material as a short-circuit barrier. The necessary guide slots and fixing points are provided on the rear wall of the fixed-mounted circuit-breakers and the withdrawable unit.

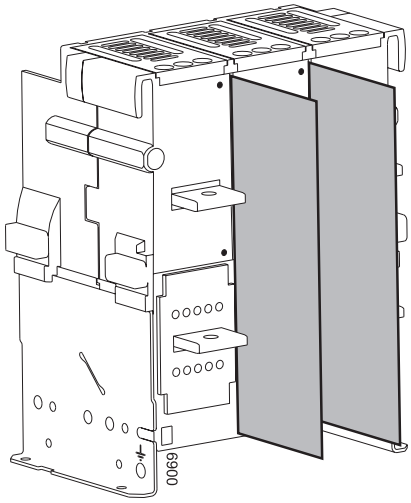
Usable material:

e.g. G-Etronax PM GPO3 from the company Elektro-Isola A/S, Danmark.

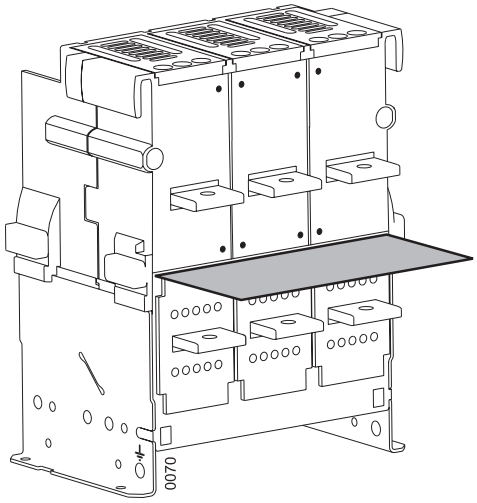


(1) 8 mounting holes for self-tapping screw ∅ 4.2 mm, screw-in depth max. 16 mm
(2) Guide slot 4 mm wide

Vertical



Horizontal



21 Arc chute covers

The arc chute cover is an optional accessory for the withdrawable units.

It is provided to protect panel parts located directly over the circuit-breaker.

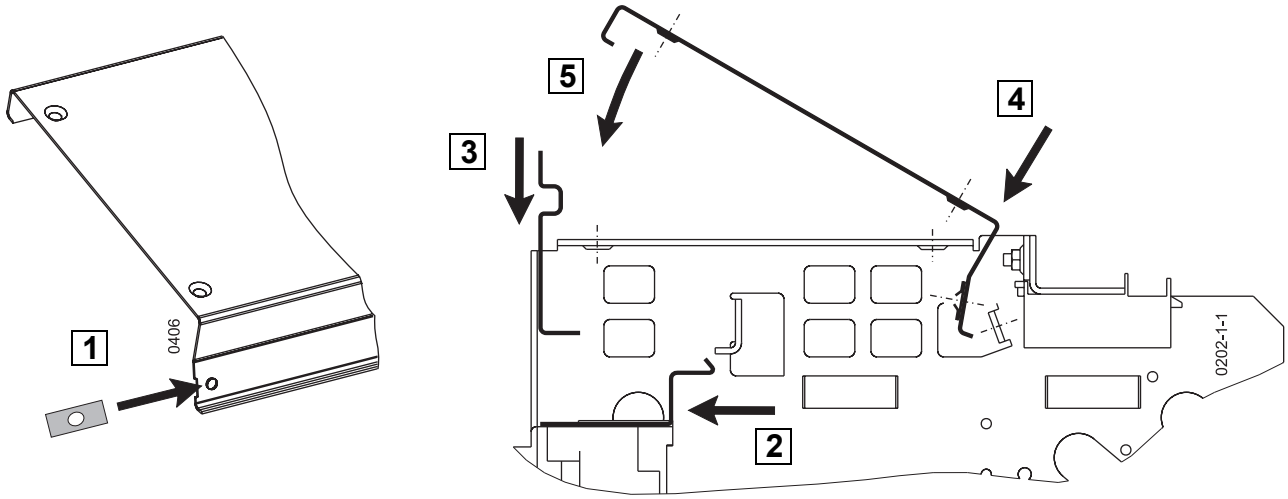
	No. of poles	Frame size	Part no.
Arc chute cover for Withdrawable unit	3	IZM(IN).1-...	(+)IZM1-XLKA-AV
		IZM(IN).2-...	(+)IZM2-XLKA-AV
		IZM(IN).3-...	(+)IZM3-XLKA-AV
	4	IZM(IN).1-...	(+)IZM1-XLKA4-AV
		IZM(IN).2-...	(+)IZM2-XLKA4-AV
		IZM(IN).3-...	(+)IZM3-XLKA4-AV

21.1 Retrofitting

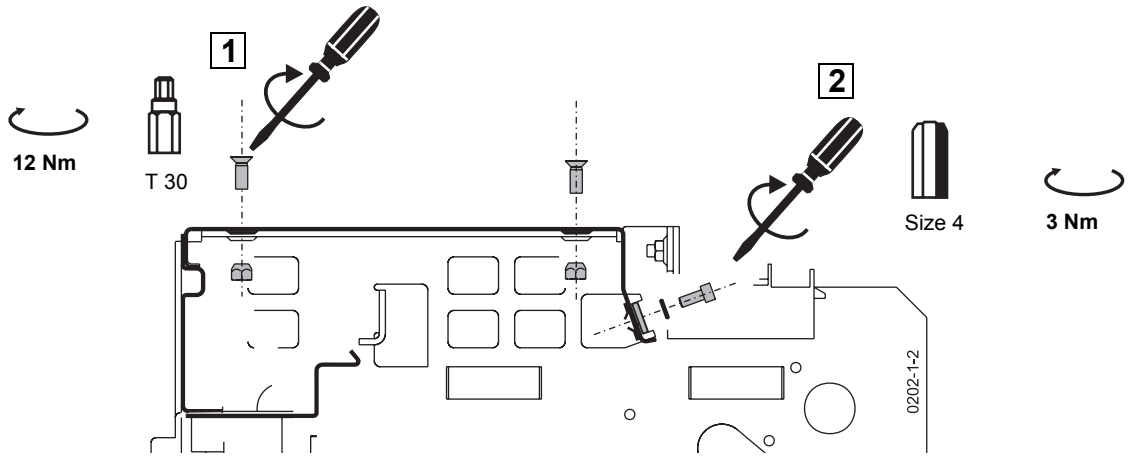
	Danger
 	**Dangerous voltage.** **Can cause death or serious personal injury as well as damage to device and equipment.** Before working on the device be sure to switch off the switchboard and earth the device. Switch off circuit-breaker and remove from withdrawable unit.

– Switching off and discharging the spring (→ page 24 – 2)
– Remove the circuit-breaker from the withdrawable unit (→ page 24 – 3)

IZM(IN).1-... and IZM(IN).2-...

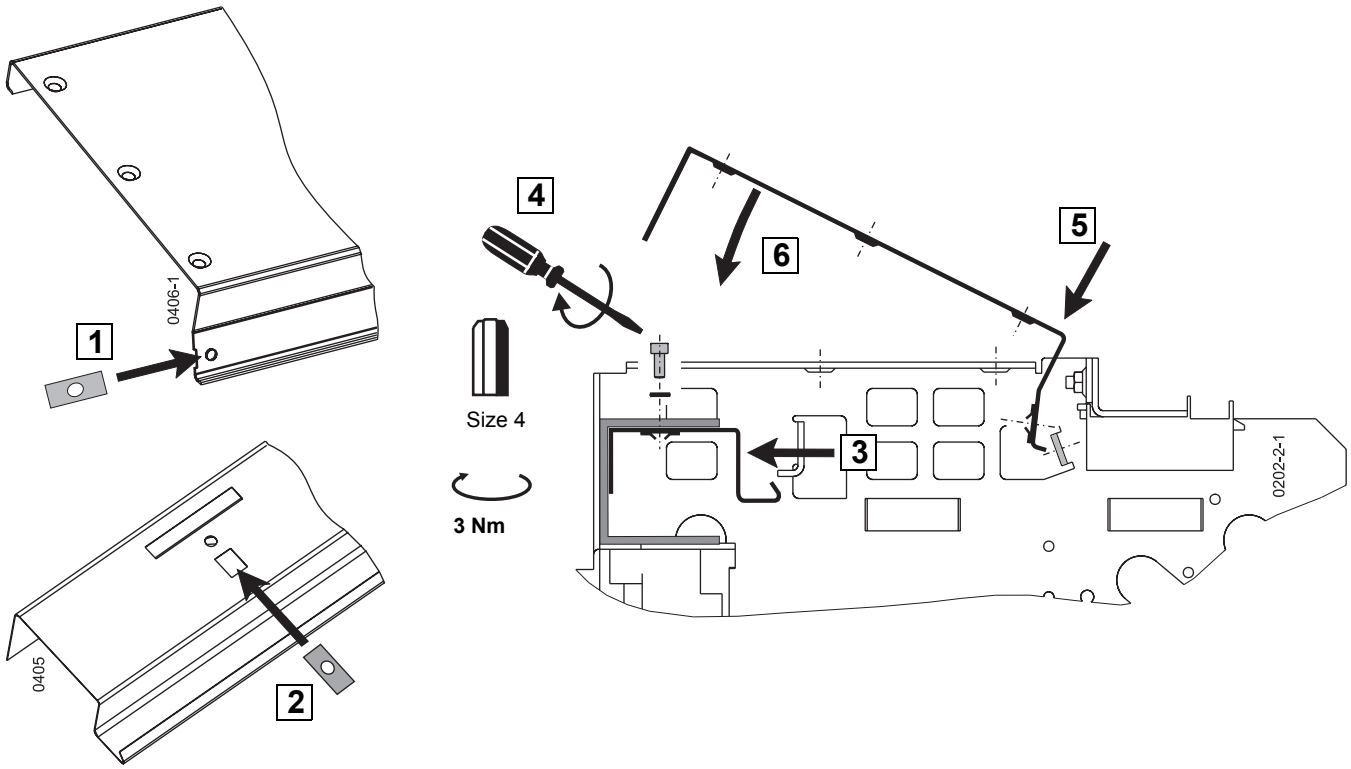


1 Slip one quick nut each over the right-side and left-side fixing holes of the cover
2 Insert partition
3 Insert “rear cover”
4 Insert “top cover” behind the fixing straps of the side walls and
5 Lay onto withdrawable unit

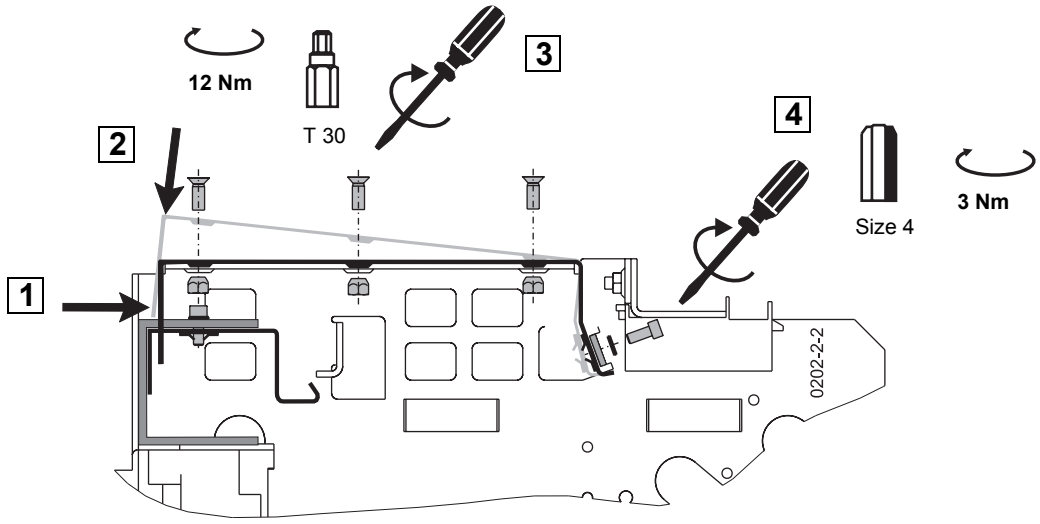


1 Fix “top cover” with: 4x M6x16 with cone-nut
2 2× M5x12 with strain washer

IZM(IN).3-...



1 Slip one quick nut each over the right-side and left-side fixing holes of the cover
2 Insert quick nuts in partition
3 Lay partition into cross member
4 Fix partition: 2x M5x12 with strain washer
5 Insert cover behind fixing straps of side walls and
6 Set down



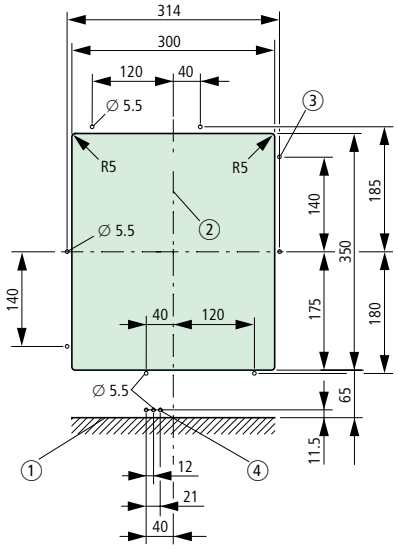
1 Press rear cover retainers into the slots of the cross member
2 Press cover down
3 Fix cover: 6x M6x16 with cone nut
4 2x M5x12 with strain washer

22 Door sealing frame IP41

	Part no.
Door seal	IZM-XRT

Dimension drawing of door cut-out

Front view of the panel door

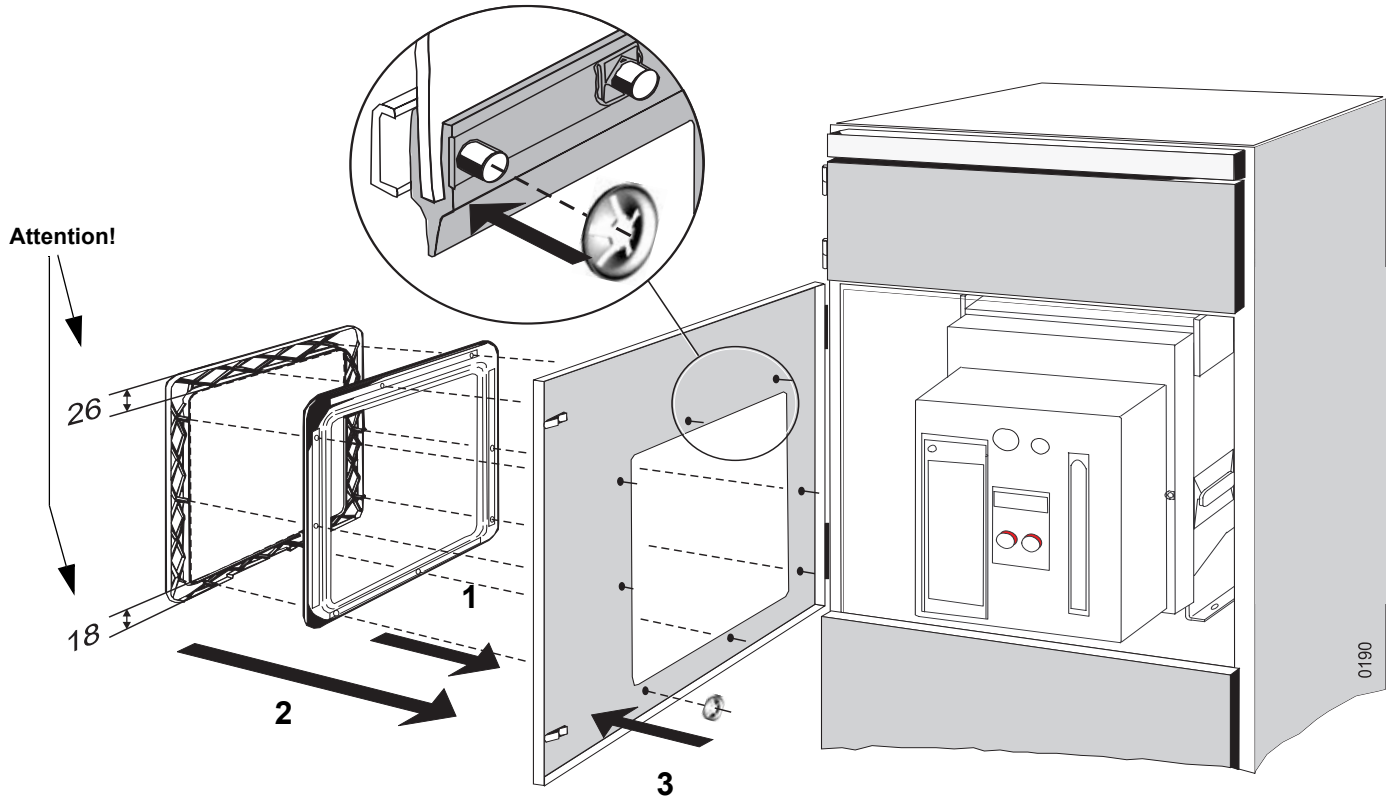


① Mounting surface of circuit-breaker or of withdrawable unit
② Centre of front panel
③ 8 × mounting bores for door sealing frame
④ 3 × mounting bores for optional door lock

Note

Cannot be combined with XDT.

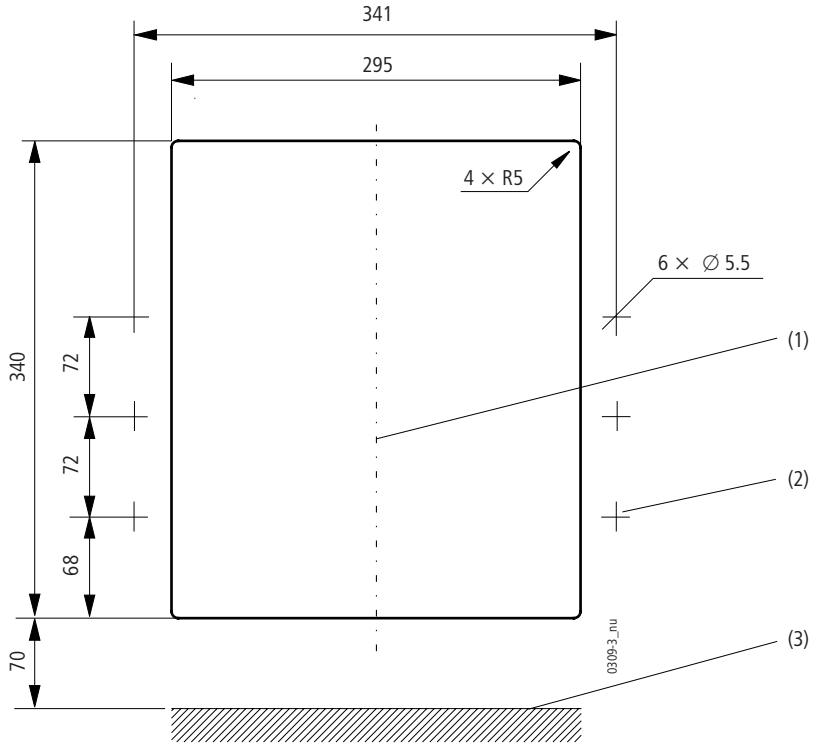
Inserting the sealing frame



23 Shrouding cover IP55

	Part no.
Protective cover	IZM-XDT

Dimension drawing for door cut-out and mounting holes

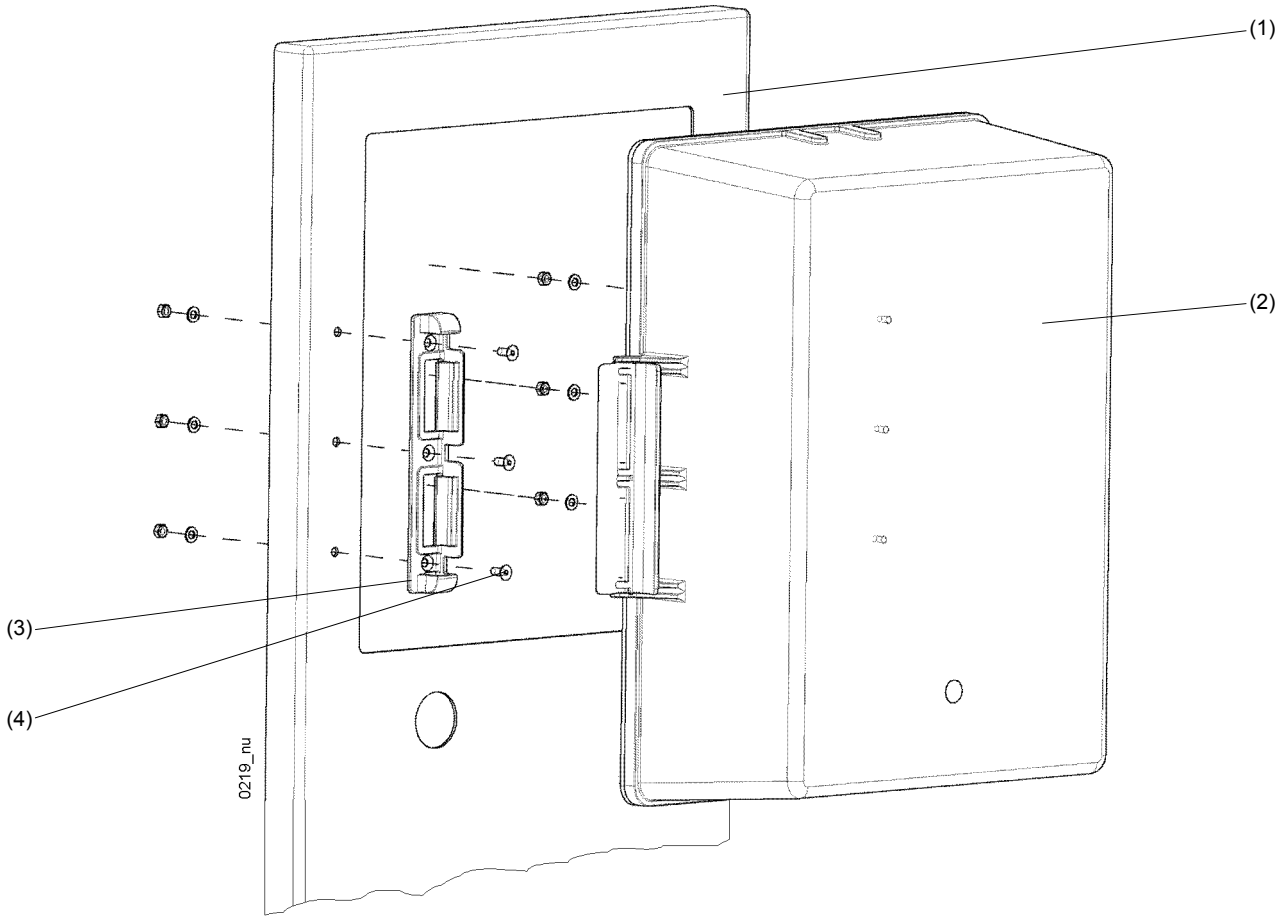


(1) Centre of front panel
(2) 6 drill holes for mounting hinges
(3) Mounting surface of circuit-breaker or of withdrawable unit

Note

Cannot be combined with XRT.

Mounting shrouding cover



(1) Cubicle door with door cut-out
(2) Protective cover
(3) 6 × Allen screws M5 with washers and safety nuts
(4) Hinge with (right and left) opening function

Installation of the right side hinge in the same fashion.

Handling: