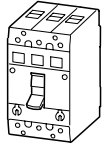


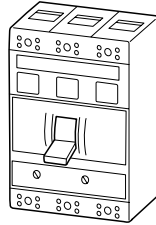
NZM Circuit-Breakers, NZM, P Switch-Disconnectors

Overview

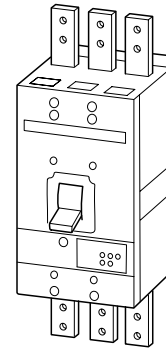
NZM7
40 to 250 A



NZM10
250 to 630 A



NZM14
800 to 1600 A



	Page		Page		Page
Technical overview	10/002	Technical overview	10/002	Technical overview	10/002
System overview	10/004	System overview	10/038	System overview	10/068
Overview of combination options	10/006	Overview of combination options	10/040	Overview of combination options	10/070
NZM circuit-breakers					
System protection, 3-pole Generator protection, 3-pole	10/008	System protection, generator protection, time selectivity, 3-pole	10/042	System protection, generator protection, time selectivity, 3-pole	10/072
Motor protection, 3-pole	10/010	Motor protection, 3-pole	10/042		
Circuit-breakers without overload release, 3-pole	10/010				
System protection, 4-pole	10/012	System protection, generator protection, time selectivity, 4-pole	10/044	System protection, generator protection, time selectivity, 4-pole	10/072
Generator protection, 4-pole	10/014				
NZM, P switch-disconnectors		NZM, P switch-disconnectors		NZM switch-disconnectors	
3-pole and 4-pole	10/015	3-pole and 4-pole	10/046	3-pole and 4-pole	10/072
Non-standard versions					
Safety switches 63 – 250 A	10/016	Circuit-breakers, switch-disconnectors for 1000 V 50 Hz	10/047		
Basic units, plug-in trip blocks					
		3-pole	10/048		
		4-pole	10/050		
Accessories		Accessories		Accessories	
Auxiliary contacts, trip- indicating auxiliary contacts	10/018	Auxiliary contacts, trip- indicating auxiliary contacts	10/052	Auxiliary contacts, trip- indicating auxiliary contacts	10/074
Differential trip indication	10/018	Differential trip indication, pre-alarm	10/052	Differential trip indication, load monitoring	10/074
Shunt releases	10/020	Shunt releases	10/053	Shunt releases	10/075
Undervoltage releases	10/022	Undervoltage releases	10/054	Undervoltage releases	10/075
Residual-current protection	10/026	Earth-fault protection, residual-current protection	10/056	Earth-fault protection	10/076
Remote operator	10/026	Remote operator	10/057	Remote operator	10/076
Plug-in adapters	10/028	Withdrawable units	10/058	Withdrawable units	10/076
Insulated enclosures	10/028	Insulated enclosures	10/060		
Operating elements	10/030	Operating elements	10/062	Operating elements	10/078
Accessories	10/034	Accessories	10/064	Accessories	10/082
Terminations	10/036	Terminations	10/066	Terminations	10/082
Selectivity tables	10/084	Selectivity tables	10/084	Selectivity tables	10/084
Tripping characteristics	10/088	Tripping characteristics	10/090	Tripping characteristics	10/093
Technical data	10/096	Technical data	10/096	Technical data	10/096
Dimensions	10/102	Dimensions	10/108	Dimensions	10/113

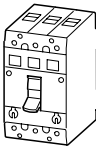
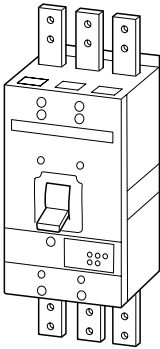
Notes

Weight → Page 15/023, Material surcharges (Al, Cu) → Page 15/002



NZM Circuit-Breakers

Technical Overview

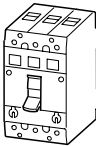
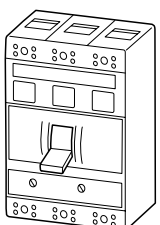
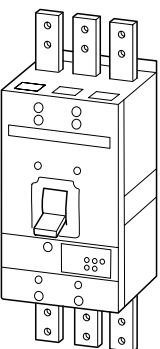
Circuit-breakers With main switch and isolating characteristics From 40–1600 A ¹⁾		Normal switching capacity (N)		Medium switching capacity (S)		High switching capacity (H)	
Rated uninterrupted current I_u Rated short-circuit breaking capacity I_{cu}		400/415 V	660/690 V	400/415 V	660/690 V	400/415 V	660/690 V
	NZM7-... System and cable protection $I_u = 40\text{--}250\text{ A}$ I_{cu} / kA → Page 10/008	35	6	65	8	100	10
	NZM7-...G Generator protection $I_u = 63\text{--}200\text{ A}$ I_{cu} / kA → Page 10/008	35	6	–		–	
	NZM7-...M Motor protection 15–90 kW $I_u = 40\text{--}200\text{ A}$ I_{cu} / kA → Page 10/010	35	6	65	8	100	10
	NZM10-.../ZM System, cable and generator protection $I_u = 250\text{--}630\text{ A}$ I_{cu} / kA → Page 10/042	45	20	65	25	100	30
	NZM10-.../ZMV System, cable and generator protection with time selectivity $I_u = 250\text{--}630\text{ A}$ I_{cu} / kA → Page 10/042	45	20	65	25	–	
	NZM10-.../ZMM Motor protection 110–315 kW $I_u = 250\text{--}630\text{ A}$ I_{cu} / kA → Page 10/044	45	20	65	25	–	
	NZM14-.../ZM(V) System, cable and generator-protection (with time selectivity) $I_u = 800\text{--}1250\text{ A}$ I_{cu} / kA $I_u = 1600\text{ A}$ I_{cu} / kA → Page 10/072	–		85/65	25	–	–
		–		–	–	100/85	45

Notes

¹⁾ For circuit-breakers $\leq 40\text{ A}$ see PKZ2 → Page 08/032

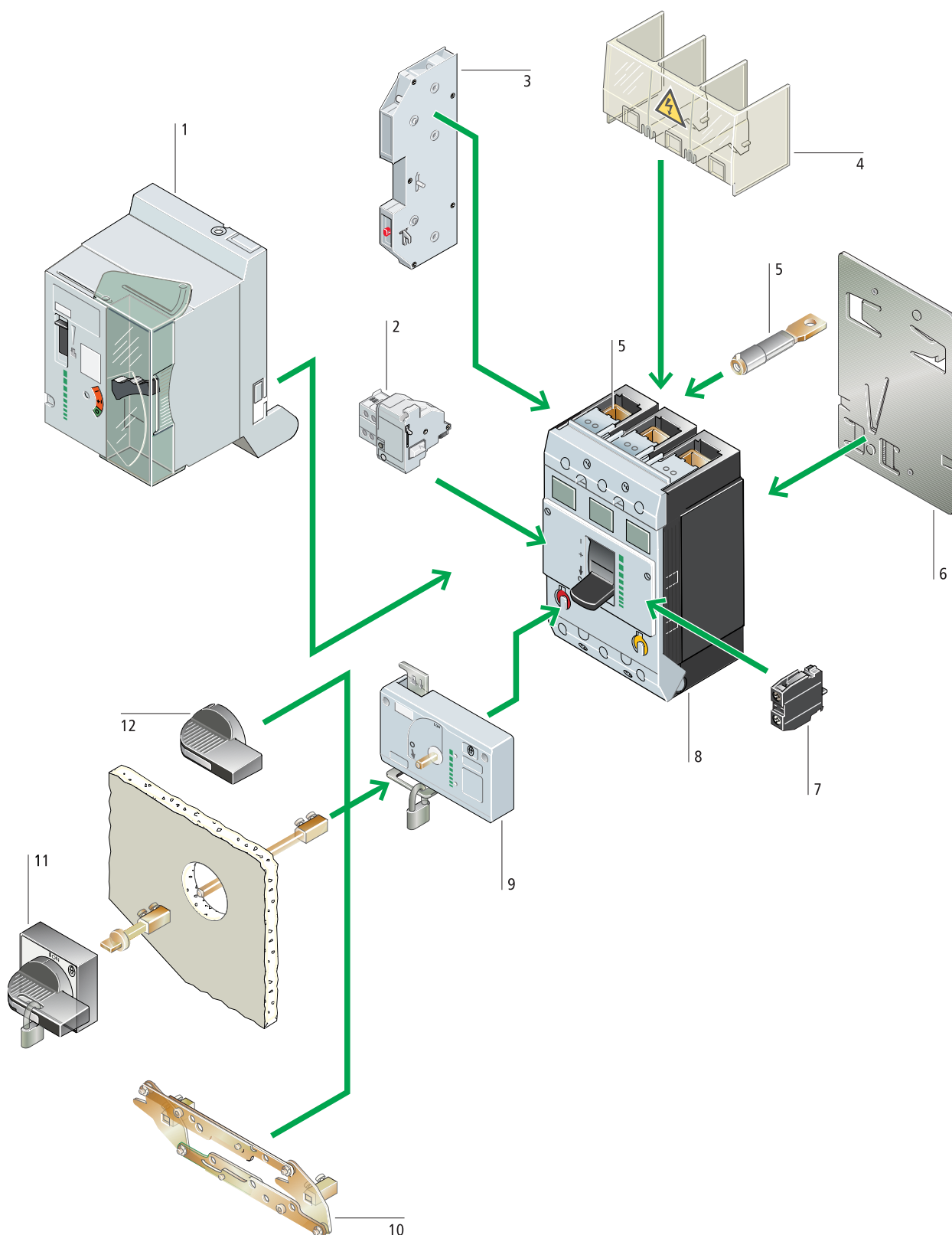
NZM, P Switch-Disconnectors

Technical Overview

Switch-disconnectors Without overload and short-circuit release With main switch and isolating characteristics From 63–1600 A Rated uninterrupted current I_u Rated short-time withstand current I_{cw}			P...	NZM...
P7, NZM7  → Page 10/015				
	P7-..., NZM7-...			
	$I_u = 63\text{--}160\text{ A}$	I_{cw} / kA	3	3
	$I_u = 200\text{--}250\text{ A}$	I_{cw} / kA	3,5	3,5
P10, NZM10  → Page 10/046				
	P10-...			
	$I_u = 400\text{--}630\text{ A}$	I_{cw} / kA	10	–
	NZM10-.../B			
	$I_u = 400\text{--}630\text{ A}$	I_{cw} / kA	–	8
NZM14  → Page 10/072				
	NZM14-...			
	$I_u = 800\text{--}1250\text{ A}$	I_{cw} / kA	–	15
	$I_u = 1600\text{ A}$	I_{cw} / kA	–	20

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

System Overview



NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

System Overview

Basic units

Circuit-breakers	8
Rated uninterrupted current up to 250 A	
Switching capacity 35, 65, 100 kA	
Adjustable releases for overload and short circuit	
Protection for systems, cables, generators, transformers and motors	
3- and 4-pole versions	
→ Page 10/008	

Switch-disconnectors	8
Rated uninterrupted current up to 250 A	
Main switches	
Main switches with Emergency-Stop function	
NZM7 switch-disconnectors can be fitted with undervoltage or shunt release for remote tripping	
3- and 4-pole versions	
→ Page 10/015	

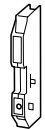
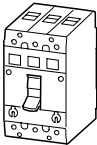
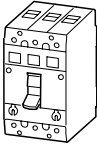
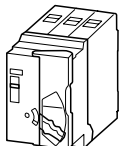
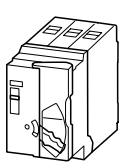
Add-on functions

NHI standard auxiliary contact	7
For indication of switching states: On/Off	
RHI trip-indicating auxiliary contact	7
For indication of switching status: Tripped	
VHI early-make auxiliary contact:	2
For interlock- and load-shedding circuits	
For early-make closing of the undervoltage release	
→ Page 10/018	
NAGM trip-indicating auxiliary contact	3
For differential fault indication	
Indication of tripping due to short circuit	
With manual reset after short circuit tripping	
→ Page 10/018	
Voltage releases	2
Shunt release	
Undervoltage releases	
• Non-delayed	
• Off-delayed	
→ Page 10/018	
Remote operator	1
Remote On/Off	
Remote reset	
For use as synchronizing switch	
Local switching by hand possible	
Switch Lockable in the Off position	
→ Page 10/026	
Rotary drive	9
Conversion of toggle switching to rotary movement	
Lockable in the Off position	
→ Page 10/030	
Rotary handle	12
When using the rotary drive	
→ Page 10/030	
Door coupling rotary handle	11
For external switching	
Lockable, integral door-/cover-interlock, degree of protection IP55	
→ Page 10/030	
Paralleling mechanism	10
For simultaneous actuation of 2 switches mounted side by side	
→ Page 10/034	

Mounting accessories

Terminations	5
Terminals for round or flat-strip conductors	
Bolt connection for busbars or cable lugs	
Rear terminals	
Built-in terminal covers	
→ Page 10/036	
Cable lug cover	4
→ Page 10/036	
Clip plate	6
For mounting on a top-hat rail	
→ Page 10/034	

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Overview of Combination Options

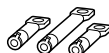
		Auxiliary contacts		Voltage releases							
Type		 EK... (NHI)	 EK... (RHI)	 NAGM- NZM7	 VHI- NZM7	 A- NZM7	 AVHI- NZM7	 U- NZM7	 UHI- NZM7	 UV- NZM7	 UVHI- NZM7
Circuit-breakers											
	NZM7...N(S)(H)	● ●	●	●	● or	● or	● or	● or	● or	● or	●
Switch-disconnectors											
	NZM7...	● ●	●	—	● or	● or	● or	● or	● or	● or	●
	P7...	● ●	—	—	●	—	—	—	—	—	—
Remotely operated circuit-breakers											
	NZM7...N(S)(H) +R-NZM7	● ●	●	●	—	●	or	●	or	●	—
Remotely operated switch-disconnector											
	NZM7... +R-NZM7	● ●	●	—	—	●	or	●	or	●	—
	P7... +R-NZM7	● ●	—	—	—	—	—	—	—	—	—

Notes

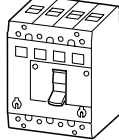
● Options for combination
○ Included as standard

The combination options are to be read line by line across the pages.
One ● means one device.

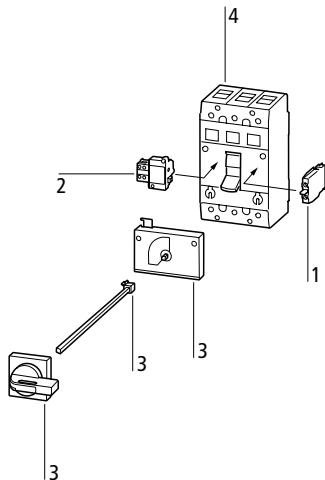
NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Overview of Combination Options

Remote operator		Rotary drive Rotary handle Door coupling rotary handle				Terminations											
						Terminals Included as standard		Bolt connection optional									
								Front	Rear								
	R- NZM7		DA(OV)- NZM7		HU(Z)- NZM7		(R)H- NZM7		HOV-NZM7		K120-NZM7		K150-NZM7		NZM7... M8		RG- NZM7
●	or	●	●	or	●	or	●	○	or	○	●	●					
●	or	●	●	or	●	or	●	○	or	○	●	●					
○		—	—		—		—	○	or	○	●	●					
○		—	—		—		—	○	or	○	●	●					

NZM7 Circuit-Breakers, 4-pole
System Protection

Rating data				Normal switching capacity 35 kA at 400 V 50/60 Hz		Price See Price List	Std. pack
Rated uninter- rupted current	Setting ranges		Type				
	Overload releases	Short-circuit releases, non-delayed	Article no.				
I_u A	I_r A		I_{rm} A				
Circuit-breakers for system protection, 4-pole							
							
With terminals							
With 100 % overload release in the neutral pole	40	25 – 40	9 – 12 × I_u	NZM74-40N 200341		1 off	
	63	40 – 63	6 – 12 × I_u	NZM74-63N 200342			
	80	63 – 80		NZM74-80N 200343			
	100	80 – 100		NZM74-100N 200344			
	125	80 – 125		NZM74-125N 200346			
	160	125 – 160		NZM74-160N 200348			
	200	160 – 200		NZM74-200N 200350			
	250	200 – 250	6 – 10 × I_u	NZM74-250N 200352			
With 60 % overload release in the neutral pole	160	125 – 160	6 – 12 × I_u	NZM74-160/100N 200349		1 off	
	200	160 – 200	6 – 12 × I_u	NZM74-200/120N 200351			
	250	200 – 250	6 – 10 × I_u	NZM74-250/160N 200355			
With M8 bolt connection and cable lug cover							
With 100 % overload release in the neutral pole	40	25 – 40	9 – 12 × I_u	NZM74-40N-M8 200427		1 off	
	63	40 – 63	6 – 12 × I_u	NZM74-63N-M8 200428			
	80	63 – 80		NZM74-80N-M8 208688			
	100	80 – 100		NZM74-100N-M8 200430			
	125	80 – 125		NZM74-125N-M8 200431			
	160	125 – 160		NZM74-160N-M8 200432			
	200	160 – 200		NZM74-200N-M8 200434			
	250	200 – 250	6 – 10 × I_u	NZM74-250N-M8 200436			
With 60 % overload release in the neutral pole	160	125 – 160	6 – 12 × I_u	NZM74-160/100N-M8 200433		1 off	
	200	160 – 200	6 – 12 × I_u	NZM74-200/120N-M8 200435			
	250	200 – 250	6 – 10 × I_u	NZM74-250/160N-M8 200437			

NZM7 Circuit-Breakers, 4-pole
System Protection

Medium switching capacity 65 kA at 400 V 50/60 Hz		High switching capacity 100 kA at 400 V 50/60 Hz		Notes	
Type	Price	Type	Price		
Article no.	See Price List	Article no.	See Price List	Std. pack	
NZM74-40S 200300		NZM74-40H 200326		1 off	
NZM74-63S 200312		NZM74-63H 200327			
NZM74-80S 200313		NZM74-80H 200328			
NZM74-100S 200314		NZM74-100H 200329			
NZM74-125S 200315		NZM74-125H 200331			
NZM74-160S 200316		NZM74-160H 200332			
NZM74-200S 200319		NZM74-200H 200334			
NZM74-250S 200291		NZM74-250H 200337			
NZM74-160/100S 200317		NZM74-160/100H 200333		1 off	
NZM74-200/120S 200322		NZM74-200/120H 200336			
NZM74-250/160S 200323		NZM74-250/160H 200338			
NZM74-40S-M8 200445		NZM74-40H-M8 200456		1 off	
NZM74-63S-M8 200446		NZM74-63H-M8 200457			
NZM74-80S-M8 200447		NZM74-80H-M8 200458			
NZM74-100S-M8 200448		NZM74-100H-M8 200459			
NZM74-125S-M8 200449		NZM74-125H-M8 200460			
NZM74-160S-M8 200450		NZM74-160H-M8 200461			
NZM74-200S-M8 200452		NZM74-200H-M8 200463			
NZM74-250S-M8 200454		NZM74-250H-M8 200465			
NZM74-160/100S-M8 200451		NZM74-160/100H-M8 200462		1 off	
NZM74-200/120S-M8 200453		NZM74-200/120H-M8 200464			
NZM74-250/160S-M8 200455		NZM74-250/160H-M8 200466			

Accessories	Page
1 Auxiliary contacts	10/018
2 Voltage releases	10/020
3 Actuators	10/030
4 Terminations	10/036

NZM7 Circuit-Breakers, 4-pole

Generator Protection

Rating data

Rated uninter-
rupted current

I_u
A

Setting ranges

Overload
releases

I_r
A



Short-circuit
releases,
non-delayed

I_{rm}
A



Normal switching capacity
35 kA at 400 V 50/60 Hz

Type

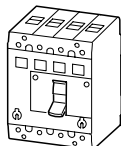
Article no.

Price

See Price List

Std. pack

Circuit-breakers for generator protection, 4-pole



With terminals

With 100 % overload release in
the neutral pole

63

40 – 63

$2 - 6 \times I_u$

NZM74-63N-G
200357

1 off

80

40 – 80

NZM74-80N-G
200360

100

80 – 100

NZM74-100N-G
200362

125

80 – 125

NZM74-125N-G
200363

160

125 – 160

NZM74-160N-G
200364

200

160 – 200

NZM74-200N-G
200368

With 60 % overload release in
the neutral pole

160

125 – 160

NZM74-160/100N-G
200366

1 off

200

160 – 200

NZM74-200/120N-G
200370

With M8 bolt connection and cable lug cover

With 100 % overload release in
the neutral pole

63

40 – 63

$2 - 6 \times I_u$

NZM74-63N-G-M8
200438

1 off

80

63 – 80

NZM74-80N-G-M8
200439

100

80 – 100

NZM74-100N-G-M8
200440

125

80 – 125

NZM74-125N-G-M8
200441

160

125 – 160

NZM74-160N-G-M8
200638

200

160 – 200

NZM74-200N-G-M8
200443

With 60 % overload release in
the neutral pole

160

125 – 160

NZM74-160/100N-G-M8
200442

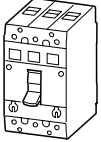
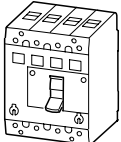
1 off

200

160 – 200

NZM74-200/120N-G-M8
200444

NZM7, P7 Switch-Disconnectors, 3- and 4-pole

Rating data			Type		Price		Notes
Rated unin- interrupted current I_u A	Short-circuit protection Maximum fuse A gG/gL		Article no.		Article no.	See Price List	
					Voltage release can be fitted for remote tripping		
Switch-disconnectors, 3-pole							
							
With terminals	63	160	P7-63 049058		NZM7-63 049064		1 off
	100	160	P7-100 049059		NZM7-100 049065		
	125	160	P7-125 049060		NZM7-125 049066		
	160	160	P7-160 049061		NZM7-160 049067		
	200	250	P7-200 049062		NZM7-200 049068		
	250	250	P7-250 049063		NZM7-250 049069		
With M8 bolt connection and cable lug cover	63	160	P7-63-M8 065871		NZM7-63-M8 065877		1 off
	100	160	P7-100-M8 065872		NZM7-100-M8 065878		
	125	160	P7-125-M8 065873		NZM7-125-M8 065879		
	160	160	P7-160-M8 065874		NZM7-160-M8 065880		
	200	250	P7-200-M8 065875		NZM7-200-M8 065881		
	250	250	P7-250-M8 065876		NZM7-250-M8 065882		
Switch-disconnectors, 4-pole							
							
With terminals	63	160	P74-63 200409		NZM74-63 200371		1 off
	100	160	P74-100 200410		NZM74-100 200372		
	125	160	P74-125 200411		NZM74-125 200373		
	160	160	P74-160 200412		NZM74-160 200374		
	200	250	P74-200 200413		NZM74-200 200375		
	250	250	P74-250 200414		NZM74-250 200376		
With M8 bolt connection and cable lug cover	63	160	P74-63-M8 200416		NZM74-63-M8 200421		1 off
	100	160	P74-100-M8 200417		NZM74-100-M8 200422		
	125	160	P74-125-M8 200415		NZM74-125-M8 200423		
	160	160	P74-160-M8 200418		NZM74-160-M8 200424		
	200	250	P74-200-M8 200419		NZM74-200-M8 200425		
	250	250	P74-250-M8 200420		NZM74-250-M8 200426		

Main switch characteristics to IEC/EN 60 204-1
Isolating characteristics to IEC/EN 60 947-3
Protection against accidental contact to IEC 536 NZM7 switch-disconnectors can be tripped remotely by using U-/A-NZM7 voltage releases.
RHI trip-indicating auxiliary contacts can be used to indicate the switching status.

Accessories	Page
1 Auxiliary contacts	10/018
2 Voltage releases	10/020
3 Actuators	10/030
4 Terminals	10/036

P7 Switch-Disconnectors, 3-pole

					Safety switches For use as Emergency-Stop devices to IEC/EN 60 204-1 With red-yellow door coupling rotary handle Lockable in the Off position With cover interlock Degree of protection: IP55	
Circuit symbol	Contact sequence	Rated uninterrupted current	Max. three-phase motor rating		Type	Price
			AC-23		Article no.	See Price List
		I_u	220 V	380 V	500 V	660 V
		A	230 V	400 V		690 V
			240 V	440 V		
			kW	kW	kW	kW

Safety switches						
	63	15	30	37	55	P7-63/CI-RT-SI/LAM 225514
	100	30	45	55	90	P7-100/CI-RT-SI/LAM 225515
	160	45	75	110	132	P7-160/CI-RT-SI/LAM 225516
	200	55	90	132	160	P7-200/CI-RT-SI/LAM 225517
	250	70	110	160	215	P7-250/CI-RT-SI/LAM 225518

Engineering notes

Maintenance and safety switches have the same electrical function. They are designed to isolate electrical installations (loads) safely from the mains while maintenance work or repairs are being carried out, thereby ensuring that no hazard arises to personnel, machinery or product.

The safety switch is an additional, enclosed main switch = isolator for an individual electrical load, and can be fitted directly next to the motor or the electrical load, ensuring that work on them can be carried out safely, provided the 5 safety rules to VDE 0105 are observed. This is of special importance if there is any possibility whatsoever of the main switch being wrongly identified.

Application

By securing the switch in the Off position with his own padlock (up to three can be fitted), the fitter/electrician can protect himself against the possibility of any other person switching On the machine without authority. Maintenance switches are merely additional, enclosed main switches with a padlocking facility.

Features

Safety switches are housed in insulated enclosures as standard and bear the inscription 'Safety Switch' on a bright orange label. Labels in other languages are available.

Switches to be used for Emergency-Stop switching have a special red handle and a yellow locking collar in accordance with STOP category 0 to IEC/EN 60 204.

If the switch is not admissible for use as an Emergency-Stop switch, both parts are grey.

The cover and handle are interlocked when a padlock is in place.

Selection:

Switches must be selected according to the following criteria:

- 1) The motor switching capacity, where the switch is fitted in such a way that the operator may use it for operational On and Off switching.
- 2) The motor rating applies for 3 poles as standard. Where the motor rating is divided between 6 poles, such as for star-delta starting, the 1.73 fold rating can be controlled with a 6-pole switch.

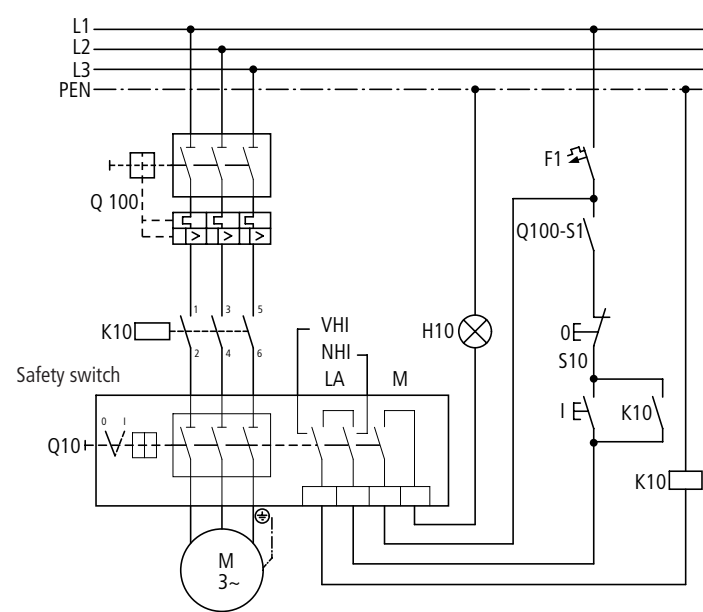
- 3) The uninterrupted current, where the switch has a load-shedding contact (LA). The load-shedding contact is an auxiliary contact, which is closed in the On position and opens early when switching Off, so that a contactor in the circuit takes over the switching capacity, and the maintenance/safety switch operates at zero load. When switching On, the LA closes later than or at the same time as the main contacts. This is achieved by the series connection of an early-make auxiliary contact (VH) and a standard auxiliary contact (NH).
- 4) The uninterrupted current, provided that the switch is safely prevented from switching under load.
- 5) This can be achieved for example, by padlocking the handle (which may need to be changed accordingly) in the On position. This is not admissible for switches with a red/yellow handle.

P7 Switch-Disconnectors, 3-pole

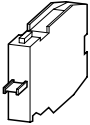
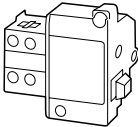
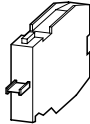
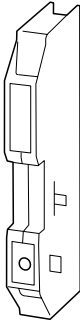
Safety switches			Without Emergency-Stop function	
With grey door coupling rotary handle			Lockable in the Off position	
With cover interlock			Degree of protection: IP55	
Type	Price	Enclosures, including insulated enclosures	Notes	
Article no.	See Price List	Std. pack	Terminal for retrofitting of 5th conductor (neutral conductor)	
P7-63/CI-SI/LAM 225519		1 off	CI23-150 + 2 × FL2-3	K25/1
P7-100/CI-SI/LAM 225520			CI23-150 + 2 × FL2-3	K25/1
P7-160/CI-SI/LAM 225521			KST34-150 + KS3	K95/1N/BR
P7-200/CI-SI/LAM 225522			KST34-150 + KS3	K95/1N/BR
P7-250/CI-SI/LAM 225523			CI45-200+ 2 × KS4	K150/1/BR

Enclosures for separate mounting, with cable entry.
Include fixing straps for wall mounting.
Only for switches with terminals.
Degree of protection IP55.
Not in combination with remote operator.

Safety switches with load shedding and indication (example)



NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Auxiliary Contacts, Trip-Indicating Auxiliary Contacts

Contact sequence	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
NHI standard auxiliary contacts Switching with the main contacts Used for indicating and interlocking tasks			
 1.13 1.14	+EK10 051082		1 off
 1.11 1.12	+EK01 051083		1 off
VHI early-make auxiliary contacts For interlock and load-shedding circuits			
 3.13 3.33 3.14 3.34	+VHI-NZM7 051085		1 off
RHI trip-indicating auxiliary contacts For general trip indication			
 4.13 4.14	+EK10 051082		1 off
 4.11 4.12	+EK01 051083		1 off
NAGM trip-indicating auxiliary contact With short-circuit indicator and standard auxiliary contact. Enables differential fault indication: RHI: tripping by voltage release, overload or short circuit AGM: tripping by short circuit NHI: Position of the main contacts			
 4.23 4.43 4.31 1.33 4.24 4.44 4.32 1.34 RHI AGM AGM NHI	+NAGM-NZM7 051087		1 off

Notes

Auxiliary contacts and voltage releases can be combined as follows:

NHI 2 × EK...	RHI 1 × EK...	VHI	A	AVHI	U	U(V)HI
●	●	●	—	—	—	—
●	●	—	●	—	—	—
●	●	—	—	●	—	—
●	●	—	—	—	●	—
●	●	—	—	—	—	●

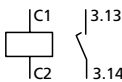
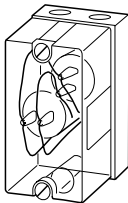
Combination options are indicated by the following symbols in any one line:

● Can be combined — Cannot be combined

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Auxiliary Contacts, Trip-Indicating Auxiliary Contacts

Type Article no. When ordered separately	Price See Price List	Std. pack	
EK10 027039			
20 off			
Two EK... standard auxiliary contacts can be clipped into the circuit-breaker or switch-disconnector.			
EK01 031785			
20 off			
VHI-NZM7 051084			
1 off			
Cannot be used in conjunction with R-NZM7 remote operators.			
EK10 027039			
20 off			
One RHI can be retrofitted as make or break contact. For circuit-breakers and switch-disconnectors.			
EK01 031785			
20 off			
—			
Circuit-breaker manual reset after short-circuit tripping: After a short circuit, the red short-circuit indicator on the unit must be reset by hand before the circuit-breaker is switched on again.			

NZM7 Circuit-Breakers, Switch-Disconnectors
Shunt Releases

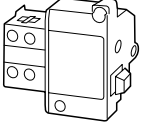
Contact sequence	Rated control voltage U_s	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack	
	V				
Shunt releases					
For fitting into NZM circuit-breakers and NZM switch-disconnectors For immediate disconnection of NZM circuit-breakers and NZM switch-disconnectors after voltage is applied					
					
Without early-make auxiliary contacts		AC/DC	12 24 48 60 110 – 120 125 – 130 208 – 215 220 – 240 380 – 415 440 – 480 500	+A-NZM7(12V) 027640 +A-NZM7(24V) 027641 +A-NZM7(48V) 027642 +A-NZM7(60V) 027643 +A-NZM7(110-120V) 027644 +A-NZM7(125-130V) 027304 +A-NZM7(208-215V) 027305 +A-NZM7(220-240V) 026469 +A-NZM7(380-415V) 027306 +A-NZM7(440-480V) 027307 +A-NZM7(500V) 027308	1 off
With early-make auxiliary contacts		AC/DC	12 24 48 60 110 – 120 125 – 130 208 – 215 220 – 240 380 – 415 440 – 480 500	+AVHI-NZM7(12V) 028897 +AVHI-NZM7(24V) 028898 +AVHI-NZM7(48V) 028899 +AVHI-NZM7(60V) 028900 +AVHI-NZM7(110-120V) 028901 +AVHI-NZM7(125-130V) 028902 +AVHI-NZM7(208-215V) 028903 +AVHI-NZM7(220-240V) 026470 +AVHI-NZM7(380-415V) 028904 +AVHI-NZM7(440-480V) 028905 +AVHI-NZM7(500V) 028906	1 off
Capacitor unit					
In conjunction with 230 V shunt release					
					

NZM7 Circuit-Breakers, Switch-Disconnectors
Shunt Releases

Type Article no. When ordered separately	Price See Price List	Std. pack	
A-NZM7(12V) 027360		1 off	With continuous rating. For fitting into NZM circuit-breakers and NZM switch-disconnectors. Universal version 0 – 400 Hz AC/DC.
A-NZM7(24V) 027361			
A-NZM7(48V) 027362			
A-NZM7(60V) 027363			
A-NZM7(110-120V) 027364			
A-NZM7(125-130V) 028831			
A-NZM7(208-215V) 028832			
A-NZM7(220-240V) 026471			
A-NZM7(380-415V) 028833			
A-NZM7(440-480V) 028834			
A-NZM7(500V) 028835			
AVHI-NZM7(12V) 028836		1 off	With continuous rating. For fitting into NZM circuit-breakers and NZM switch-disconnectors. Universal version 0 – 400 Hz AC/DC. Shunt release and auxiliary contact work independently of one another. The early-make function of the VHI is not effective in conjunction with R-NZM7.
AVHI-NZM7(24V) 028837			
AVHI-NZM7(48V) 028838			
AVHI-NZM7(60V) 028839			
AVHI-NZM7(110-120V) 028840			
AVHI-NZM7(125-130V) 028841			
AVHI-NZM7(208-215V) 028842			
AVHI-NZM7(220-240V) 028843			
AVHI-NZM7(380-415V) 028844			
AVHI-NZM7(440-480V) 028845			
AVHI-NZM7(500V) 028846			
CM-NZMI 074946		1 off	Makes it possible to use the circuit-breaker safely as a mesh network switch in the range 0 – 110 % U_n with a constant disconnection time of 40 ms. In the absence of the mains voltage the built-in capacitor supplies the energy to operate the shunt release for at least 12 h . Fitted in CI-B enclosure.

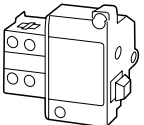
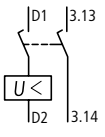
NZM7 Circuit-Breakers, Switch-Disconnectors

Undervoltage Releases

	Rated control voltage U_s	Type suffix Article no. When ordered with basic unit	Price See Price List	Type Article no. When ordered separately	Price See Price List	Std. pack
	V					
Undervoltage releases, non-delayed						
For fitting into NZM circuit-breakers and NZM switch-disconnectors. Trips when the control voltage falls to below 70 – 35 % U_s Suitable for Emergency-Stop schemes Without early-make auxiliary contacts						
						
	AC	24	+U-NZM7(24VAC) 027309	U-NZM7(24VAC) 028847		1 off
		48	+U-NZM7(48VAC) 027310	U-NZM7(48VAC) 028848		
		60	+U-NZM7(60VAC) 027311	U-NZM7(60VAC) 028849		
		110 – 120	+U-NZM7(110-120VAC) 027312	U-NZM7(110-120VAC) 028850		
		125 – 130	+U-NZM7(125-130VAC) 027313	U-NZM7(125-130VAC) 028851		
		208 – 215	+U-NZM7(208-215VAC) 027314	U-NZM7(208-215VAC) 028852		
		220 – 240	+U-NZM7(220-240VAC) 027315	U-NZM7(220-240VAC) 027608		
		380 – 415	+U-NZM7(380-415VAC) 027316	U-NZM7(380-415VAC) 065565		
		440 – 480	+U-NZM7(440-480VAC) 027317	U-NZM7(440-480VAC) 028854		
		500	+U-NZM7(500VAC) 027318	U-NZM7(500VAC) 028855		
	DC	24	+U-NZM7(24VDC) 027599	U-NZM7(24VDC) 027607		1 off
		48	+U-NZM7(48VDC) 027342	U-NZM7(48VDC) 028879		
		60	+U-NZM7(60VDC) 027343	U-NZM7(60VDC) 028880		
		110 – 120	+U-NZM7(110-120VDC) 027344	U-NZM7(110-120VDC) 028881		
		125 – 130	+U-NZM7(125-130VDC) 027345	U-NZM7(125-130VDC) 028882		
		208 – 215	+U-NZM7(208-215VDC) 027346	U-NZM7(208-215VDC) 028883		
		220 – 240	+U-NZM7(220-240VDC) 027347	U-NZM7(220-240VDC) 028884		
		380 – 415	+U-NZM7(380-415VDC) 027348	U-NZM7(380-415VDC) 028885		
		440 – 480	+U-NZM7(440-480VDC) 027349	U-NZM7(440-480VDC) 028886		
		500	+U-NZM7(500VDC) 027350	U-NZM7(500VDC) 028887		

NZM7 Circuit-Breakers, Switch-Disconnectors

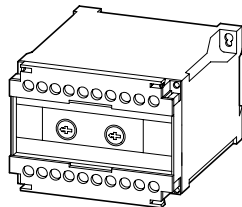
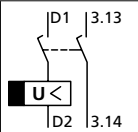
Undervoltage Releases

Circuit symbol	Rated control voltage U_s	Type suffix Article no. When ordered with basic unit	Price See Price List	Type Article no. When ordered separately	Price See Price List	Std. pack
	V					
Undervoltage releases, non-delayed						
With early-make auxiliary contacts ¹⁾						
 	AC	24	+UHI-NZM7(24VAC) 027319	UHI-NZM7(24VAC) 028856		1 off
		48	+UHI-NZM7(48VAC) 027320	UHI-NZM7(48VAC) 028857		
		60	+UHI-NZM7(60VAC) 027321	UHI-NZM7(60VAC) 028858		
		110 – 120	+UHI-NZM7(110-120VAC) 027322	UHI-NZM7(110-120VAC) 028859		
		125 – 130	+UHI-NZM7(125-130VAC) 027323	UHI-NZM7(125-130VAC) 028860		
		208 – 215	+UHI-NZM7(208-215VAC) 027324	UHI-NZM7(208-215VAC) 028861		
		220 – 240	+UHI-NZM7(220-240VAC) 027602	UHI-NZM7(220-240VAC) 027610		
		380 – 415	+UHI-NZM7(380-415VAC) 027325	UHI-NZM7(380-415VAC) 028862		
		440 – 480	+UHI-NZM7(440-480VAC) 027326	UHI-NZM7(440-480VAC) 028863		
		500	+UHI-NZM7(500VAC) 027327	UHI-NZM7(500VAC) 028864		
	DC	24	+UHI-NZM7(24VDC) 027601	UHI-NZM7(24VDC) 027609		1 off
		48	+UHI-NZM7(48VDC) 027351	UHI-NZM7(48VDC) 028888		
		60	+UHI-NZM7(60VDC) 027352	UHI-NZM7(60VDC) 028889		
		110 – 120	+UHI-NZM7(110-120VDC) 027353	UHI-NZM7(110-120VDC) 028890		
		125 – 130	+UHI-NZM7(125-130VDC) 027354	UHI-NZM7(125-130VDC) 028891		
		208 – 215	+UHI-NZM7(208-215VDC) 027355	UHI-NZM7(208-215VDC) 028892		
		220 – 240	+UHI-NZM7(220-240VDC) 027356	UHI-NZM7(220-240VDC) 028893		
		380 – 415	+UHI-NZM7(380-415VDC) 027357	UHI-NZM7(380-415VDC) 028894		
		440 – 480	+UHI-NZM7(440-480VDC) 027358	UHI-NZM7(440-480VDC) 028895		
		500	+UHI-NZM7(500VDC) 027359	UHI-NZM7(500VDC) 028896		

Notes

¹⁾ Cannot be used in conjunction with R-NZM7 remote operators.

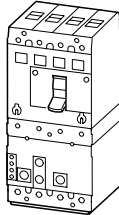
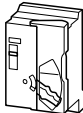
NZM7 Circuit-Breakers, Switch-Disconnectors
Undervoltage Releases

Circuit symbol		Rated control voltage U_s	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
		V			
Undervoltage releases, off-delayed					
Combination of separate drop-out delay unit and built-in undervoltage release					
Adjustable delay time					
Without early-make auxiliary contacts					
Delay time 0.06 – 16 s		AC	220 – 240 380 – 440 550 – 480	+UVU-NZM7 215194	1 off
					
With early-make auxiliary contacts					
Delay time 0.06 – 16 s		AC	220 – 240 380 – 440 550 – 480	+UVUHI-NZM7 225327	1 off
Supplementary release coil					
					
For UVU(HI)-NZM7 delayed undervoltage releases					
Without early-make auxiliary contacts			+UV 200-NZM7-OAVE 207564		1 off
With early-make auxiliary contacts			+UVHI 200-NZM7-OAVE 207566		1 off

NZM7 Circuit-Breakers, Switch-Disconnectors
Undervoltage Releases

Type Article no. When ordered separately	Price See Price List	Std. pack
UVU-NZM7 215193		1 off For other control voltages use 50 VA control transformer. Fixing: top-hat rail or screws
UVUHI-NZM7 225326		1 off Combination of separate drop-out delay unit, under-voltage release and early-make auxiliary contacts. Undervoltage release and second auxiliary contact operate separately of one another. Cannot be used together with the R-NZM7 remote operators. For other control voltages use 50 VA control transformer.
UV 200-NZM7-OAVE 207565		1 off Supplementary release coil, for cases where the electrical drop-out delay unit of the UVU-NZM is already fitted.
UVHI 200-NZM7-OAVE 207567		1 off

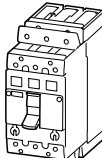
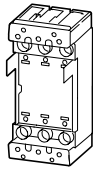
NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Residual-Current Protection, Remote Operators

		Rated control voltage U_s	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
		V			
Residual-current protection modules  pulse-current sensitive					
					
For 4-pole NZM circuit-breakers and switch-disconnectors up to 200 A Not dependent on mains and control voltages $U_N = 380\text{--}690\text{ V } 50/60\text{ Hz}$					
Rated fault current $I_{\Delta n} = 0.03\text{ A}$			+FIP30-NZM74 200491		1 off
Rated fault current $I_{\Delta n} = 0.1 - 0.3 - 1.0 - 3\text{ A}$ Delay time $t_v = 60 - 150 - 300 - 450\text{ ms}$			+FIPV-NZM74 200490		1 off
Remote operators					
For remote switching of NZM7 circuit-breakers and NZM7/P7 switch-disconnectors Switching times: On 100 ms, Off 100 ms, Local switching by hand possible					
		AC/DC	110 – 120	+R-NZM7(110-120V) 027634	1 off
		AC/DC	220 – 240	+R-NZM7(220-240V) 026473	
		AC	380 – 415	+R-NZM7(380-415VAC) 027638	
		DC	24	+R-NZM7(24V) 027632	
		DC	48 – 60	+R-NZM7(48-60V) 027633	
Cover for the 4th pole					
Additional cover for mounting the R-NZM7 on 4-pole switches Supplied as standard when remote operator ordered together with switch					
			–		

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Residual-Current Protection, Remote Operators

Type	Price	
Article no. When ordered separately	See Price List	Std. pack

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Plug-In Adapters, Insulated Enclosures

	For use with Switch- disconnectors up to	Circuit-breakers up to	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
	A	A			
Plug-in adapter elements					
For 3-pole NZM7 circuit-breakers and switch-disconnectors up to 200 A					
Complete plug-in adapters can only be supplied with switch					
	With terminals		+AS 3-NZM7 200484		1 off
	With M8 bolt connection		+AS 3-NZM7-M8 207059		1 off
	Plug, can be supplied fitted to switch only		+ASW 3-NZM7 200485		1 off
Socket					
	With terminals		–		
	With M8 bolt connection		–		
Control circuit connector for plug-in adapters					
					
For VHI/EK... auxiliary contacts/trip-indicating auxiliary contacts, A(VHI)/U(V)(HI) shunt releases/undervoltage releases			+HS-NZM7 200487		1 off
For NAGM annunciation unit			+HS-NAGM-NZM7 200488		
For R remote operator			+HS-R(S)-NZM7 200489		
Insulated enclosures					
For 3- and 4-pole switches					
With black door coupling rotary handle, rotary drive and extension shaft	63	63	+CI-NZM7-63¹⁾ 065897		1 off
	160	125	+CI-NZM7-160 065901		
	250	250	+CI-NZM7-250 065905		
With red-yellow door coupling rotary handle Enables the switch to be used as Emergency-Stop device to IEC/EN 60 204-1	63	63	+CI-RT-NZM7-63¹⁾ 065899		
	160	125	+CI-RT-NZM7-160 065903		
	250	250	+CI-RT-NZM7-250 065907		
Additional terminal					
For passing the neutral conductor through					
	63	63	–		
	100	100	–		
	160	160	–		
	250	250	–		

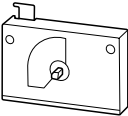
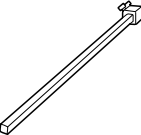
Notes ¹⁾ Only for 3-pole circuit-breakers/switch-disconnectors. For 4-pole switches use CI-...-160.

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Plug-In Adapters, Insulated Enclosures

Type Article no. When ordered separately	Price See Price List	Std. pack	Enclosures, including insulated enclosures	Terminal for retrofitting of 5th conductor (neutral conductor)	
				Plug-in adapter not suitable for use with P7 switch-disconnectors. HS...NZM7 control circuit connector must be ordered separately.	
—					
—					
—					
ASS-NZM7 200486		1 off			
ASS-NZM7-M8 207060		1 off			
—				Consists of plug and socket. The socket is fitted separately in the control panel.	
—					
—					
CI-NZM7-63 ¹⁾ 065898		1 off	CI23-150 + 2 × FL2-3	K25/1 ²⁾	Enclosures for separate mounting with cable entry. Including fixing straps for wall mounting. Only for switches with terminals. Degree of protection IP55. Not in combination with remote operator.
CI-NZM7-160 065902			KST34-150 + KS3	K95/1 N/BR	
CI-NZM7-250 065906			CI45-200 + 2 × KS4	K150/1/BR	
CI-RT-NZM7-63 ¹⁾ 065900			CI23-150 + 2 × FL2-3	K25/1 ²⁾	
CI-RT-NZM7-160 065904			KST34-150 + KS3	K95/1 N/BR	
CI-RT-NZM7-250 065908			CI45-200 + 2 × KS4	K150/1/BR	
K25/1 096200		10 off			
K50/1 098573		10 off			
K95/1N/BR 012336		1 off			
K150/1/BR 014709		1 off			

²⁾ Cannot be used in combination with NAGM.

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Operating Elements

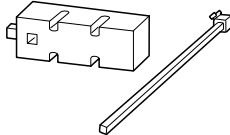
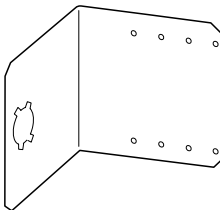
	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
Insulating surround For use where the toggle switch protrudes from the enclosure Degree of protection IP40 			
	+RT-NZM7 051093		1 off
Rotary drive Converts On and Off switching from a toggle movement to a rotary movement 			
Without padlocking feature	+DAOV-NZM7 051328		1 off
With additional padlocking feature	+DA-NZM7 051097		1 off
Rotary handles for surface mounting switches Black Rotary drive required 	+HU-NZM7 051487		1 off
Door coupling rotary handle for rear mounting switches Degree of protection IP55 ¹⁾ With padlocking feature Rotary drive required Black 	+H-NZM7 051712		1 off
Red-yellow Enables the switch to be used as Emergency-Stop device to IEC/EN 60 204-1	+RH-NZM7 052141		
Black, without padlocking feature 	+HOV-NZM7 051714		
Extension shaft Can be cut to required length 			
For mounting depth: 175 – 400 mm	+A400-NZM7 052741		1 off
For mounting depth: 260 – 600 mm	+A600-NZM7 052927		1 off

Notes ¹⁾ When mounted vertically, degree of protection IP65.

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Operating Elements

Type Article no. When ordered separately	Price See Price List	Std. pack
RT-NZM7 051092		1 off Screw-fixed at the rear Can be inscribed
DAOV-NZM7 051327		1 off
DA-NZM7 051096		1 off Off position lockable using up to 3 padlocks (hasp thickness 4 – 8 mm)
HU-NZM7 051329		1 off
H-NZM7 051711		1 off Lockable in the On or Off position, using up to 3 padlocks (hasp thickness 4 – 8 mm) Handle position maintained when the door or cover are being opened. For horizontal, fitting of the switch. Special drive dog required, please enquire.
RH-NZM7 052089		
HOV-NZM7 051713		Handle position maintained when the door or cover are being opened. For horizontal, fitting of the switch. Special drive dog required, please enquire.
A400-NZM7 052572		1 off
A600-NZM7 053373		1 off

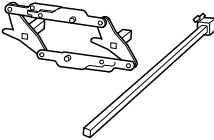
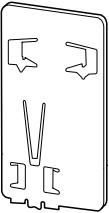
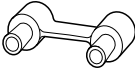
NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Operating Elements

	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
Side-wall operators For actuating the switch from the side of the control panel For changing the rotary movement by 90° Fitted on top of DA(OV) rotary drive Extension shaft (280 mm) with special coupling supplied as standard			
For operation on the left 	+SWA-NZM7-L 054520		1 off
For operation on the right	+SWA-NZM7-R 054522		
Mounting brackets For switches with side-wall operator Enables switches to be fitted directly to the control panel side wall 			
	+MSWA-NZM7 054524		1 off
Main switch assembly kits			
With black door coupling rotary handle	+V-NZM7-SW 065590		1 off
With red-yellow door coupling rotary handle Enables the switch to be used as Emergency-Stop device to IEC/EN 60 204-1	+V-NZM7 061543		1 off
Main switch assembly kit for side wall installation			
With black rotary handle			
For operation on the left	+EA-NZM-7-L 205049		1 off
For operation on the right	+EA-NZM-7-R 205051		1 off
With red-yellow door coupling rotary handle Enables the switch to be used as Emergency-Stop device to IEC/EN 60 204-1			
For operation on the left	+EA-RT-NZM-7-L 205053		1 off
For operation on the right	+EA-RT-NZM-7-R 205055		1 off
External warning plate Inscription: "Main Switch – Open only in the Off position"			
German	+ZFS 61-NZM7 051088		1 off
English	+ZFS 62-NZM7 065937		
French	+ZFS 63-NZM7 065938		
See Opposite page for other languages	+ZFS...NZM7 999979		
Blank (for engraving or printing)	+ZFS 60-NZM7 065895		
Lightning symbol For main switches			
	—		

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Operating Elements

Type Article no. When ordered separately	Price See Price List	Std. pack	
SWA-NZM7-L 054519		1 off	
SWA-NZM7-R 054521		1 off	
MSWA-NZM7 054523		1 off	
V-NZM7-SW 065589		1 off	Equipment supplied: • Door coupling rotary handle • DAOV rotary drive • Extension shaft for 400 mm mounting depth • External warning plate • Black lightning symbol
V-NZM7 061453		1 off	
EA-NZM-7-L 205050		1 off	Equipment supplied: • Door coupling rotary handle • DAOV rotary drive • Side-wall operator with extension shaft • Mounting bracket • External warning plate • Black lightning symbol
EA-NZM-7-R 205052		1 off	
EA-RT-NZM-7-L 205054		1 off	
EA-RT-NZM-7-R 205056		1 off	
ZFS 61-NZM7 051089		1 off	External warning plates are available in the following languages: 64 Bulgarian 73 Romanian 65 Danish 74 Russian 66 Finnish 75 Swedish 67 Dutch 76 Serbo-Croat 68 Italian 77 Spanish 69 Greek 78 Czech 70 Norwegian 79 Turkish 71 Polish 80 Hungarian 72 Portuguese 81 Afrikaans To obtain the reference for ordering, insert the language code number into the type reference required Ordering example External warning plate in Finnish: ZFS 66-NZM7
ZFS 62-NZM7 065957			
ZFS 63-NZM7 065958			
ZFS...NZM7 999978			
ZFS 60-NZM7 065896			
BPF-NZM7 217294		1 off	Included as standard in main switch assembly kit

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Accessories

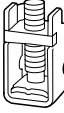
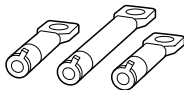
	Type suffix Article no. When ordered with basic unit	Price See Price List	Std. pack
Paralleling mechanism For simultaneous operation of two P switch-disconnectors mounted side by side, using a rotary drive. With extension shaft for 400 mm mounting depth. 	—		
Mechanical interlock For interlocking two circuit-breakers or switch-disconnectors with rotary drive of the same mounting depth against one another.			
3-pole	—		
4-pole	—		
Clip plates For mounting the switch on a top-hat rail to EN 50 022 	+C-NZM7 054526		1 off
Spacers For matching the mounting depth of NZM7 switches up to 160 A to NZM7 switches ≥ 200 A or to NZM10 size switches Standard pack: 1 set = 2 off 	+ABH-NZM7 054528		1 off

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors
Accessories

Type Article no. When ordered separately	Price See Price List	Std. pack	
K2-P7 054517		1 off	Use paralleling mechanism for P switch-disconnector only. Not suitable for main switch applications.
KV 2-NZM7 200468		1 off	For switches of differing mounting depths (≤ 160 A and ≥ 200 A), use ABH-NZM7 spacer.
KV 2-NZM74 200469		1 off	
C-NZM7 054525		1 off	Clip plate not suitable for switches with R-NZM7 remote operator.
ABH-NZM7 054527		1 off	Enables switches of differing mounting depths to be aligned flush with one another at the front. Required, for example, to compensate 17.5 mm depth where a mechanical interlock is fitted. Do not use in conjunction with RG-NZM7 rear terminals.

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

Terminations

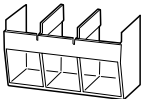
		Type suffix Article no. When ordered with basic unit	Price See Price List	Type Article no. When ordered separately	Price See Price List	Std. pack
Terminals Box terminals for copper conductors When ordered with basic unit, supplied as a set: 1 set = 3 or 4 terminals, as appropriate When ordered separately, supplied singly Terminal cover removable Conductors can be laid in from the front 1 conductor: 2.5 – 120 mm ² ¹⁾ 2 conductors: 2.5 – 35 mm ² ¹⁾ K185: Solid/stranded 1 conductor: 2.5 – 185 mm ² 2 conductors: 2.5 – 70 mm ² Flexible 1 conductor: 2.5 – 150 mm ² ¹⁾ 2 conductors: 2.5 – 70 mm ² ¹⁾						
For 3-pole switches						
	Up to 160 A	+K120-NZM7-O 057475		K120-NZM7 054529		1 off
		+K120-NZM7-U 055754		–		
	200 A	+K150-NZM7-O 028909		K150-NZM7 028908		
		+K150-NZM7-U 058772		–		
	250 A	+K185-NZM7-O 215428		K185-NZM7 215427		
		+K185-NZM7-U 215429		–		
For 4-pole switches						
	Up to 200 A	+K150-NZM74-O 200478		–		
		+K150-NZM74-U 200479		–		
	250 A	+K185-NZM74-O 219236		–		
		+K185-NZM74-U 219237		–		
Rear terminal bolts For connection of cable lugs or flat copper strip With M8 internal thread When ordered with basic unit, supplied as a set: One set consists of • 2 short terminal bolts • 1 long terminal bolt (3-pole) or 2 long terminal bolts (4-pole)						
for 3-pole switches						
	From 160 A	+RG160-NZM7-O 065577		RG160-NZM7 202935		1 off
		+RG160-NZM7-U 065576		–		
	From 200 A	+RG250-NZM7-O 065579		RG250-NZM7 202936		
		+RG250-NZM7-U 065578		–		
For 4-pole switches						
		+RG250-NZM74-O 201318		RG250-NZM74 202937		
		+RG250-NZM74-U 201319		–		

Notes

- ¹⁾ Use ferrules with flexible cable
 -O = For fitting at the top
 -U = For fitting at the bottom

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

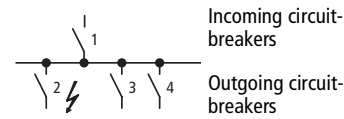
Terminations

	Type suffix Article no. When ordered with basic unit	Price See Price List	Type Article no. When ordered separately	Price See Price List	Std. pack
Conversion kit					
For conversion of terminal into bolt connection, on circuit-breakers and switch-disconnectors.					
For 3-pole switches					
Up to 160 A	–		M8-160-NZM7 211340		1 off
From 200 A	–		M8-250-NZM7 211341		
For 4-pole switches	–		M8-NZM74 211342		
Control circuit terminals					
Can be clipped onto the upper and/or lower switch terminals retrospectively, 1 conductor: 0.75 – 4 mm², 2 conductors: 0.75 – 2.5 mm² flexible, stranded ¹⁾ When ordered with the basic unit, supplied as a set: 1 set = 2 terminals When ordered separately: supplied singly					
For 3-pole switches up to 160 A	+ST160-NZM7-O 065581		ST160-NZM7 037094		1 off
	+ST160-NZM7-U 065580		–		
For 3-pole switches from 200 A and for all 4-pole switches	+ST250-NZM7-O 065582		ST250-NZM7 037096		
	+ST250-NZM7-U 065583		–		
For terminal bolts	+STM8-NZM7-O 065587		STM8-NZM7 065588		
	+STM8-NZM7-U 065586		–		
Cable lugs					
Slim-line version for front terminal bolts					
For terminal capacity up to					
	95 mm²	–	KS95-NZM7 059775		1 off
	120 mm²	–	KS120-NZM7 059776		
	150 mm²	–	KS150-NZM7 059777		
One-piece cable lug cover					
For protection against accidental contact with cable lug or copper busbar connections Finger-proof to IEC 536					
					
	For 3-pole switches				
	Up to 160 A	+KA160-NZM7 060277		KA160-NZM7 060276	
From 200 A	+KA250-NZM7 061431		KA250-NZM7 061371		
For 4-pole switches	+KA250-NZM74 200781		KA250-NZM74 200780		

Notes

- ¹⁾ Use ferrules with flexible cable
 -O = For fitting at the top
 -U = For fitting at the bottom

NZM Circuit-Breakers, Selectivity Table, 400 V AC



Selectivity

between circuit-breakers enables the isolation of faulty system **sections**. Incoming breaker 1 and outgoing breaker 2 operate selectively if, in the event of a short

circuit at position 2 **only** outgoing breaker 2 trips out. System sections 3 and 4 remain operational.

			Incoming circuit-breakers									
			NZM7-...N(S)(H)									
			I_u [A]	40	63	80	100	125	160	200	250	
			I_m [A]	380	760	960	1200	1500	1800	2400	2500	
			I_{cu} [kA]	35(65)(100)	35(65)(100)	35(65)(100)	35(65)(100)	35(65)(100)	35(65)(100)	35(65)(100)	35(65)(100)	
Outgoing circuit-breakers	I_u [A]	I_{cu} [kA]	Prospective short-circuit current (kA). Set overload and short-circuit releases of the incoming breaker to maximum value.									
FAZ-...B(C)	0.5 – 4	15	1.2	T	T	T	T	T	T	T	T	
	6	15	1.2	6	10	T	T	T	T	T	T	
	10	15	1.2	6	10	T	T	T	T	T	T	
	13 – 16	15	1	4.5	10	10	T	T	T	T	T	
	20 – 25	15	0.8	3	7.5	7.5	T	T	T	T	T	
	32	15	–	2	4.5	7.5	10	10	T	T	T	
	40 – 63	15	–	–	4.5	6	6	10	T	T	T	
PKZM0	0.16	100	T	T	T	T	T	T	T	T	T	
	0.25	100	T	T	T	T	T	T	T	T	T	
	0.4	100	T	T	T	T	T	T	T	T	T	
	0.63	100	T	T	T	T	T	T	T	T	T	
	1	100	T	T	T	T	T	T	T	T	T	
	1.6	100	T	T	T	T	T	T	T	T	T	
	2.5	100	T	T	T	T	T	T	T	T	T	
	4	100	3	T	T	T	T	T	T	T	T	
	6.3	100	1.2	T	T	T	T	T	T	T	T	
	10	100	1	T	T	T	T	T	T	T	T	
	16	16	0.8	7.5	T	T	T	T	T	T	T	
	20	16	–	4.5	T	T	T	T	T	T	T	
	25	16	–	3	10	T	T	T	T	T	T	
PKZ2	0.6	100	T	T	T	T	T	T	T	T	T	
	1	100	T	T	T	T	T	T	T	T	T	
	1.6	100	T	T	T	T	T	T	T	T	T	
	2.4	100	2.5	T	T	T	T	T	T	T	T	
	4	100	0.7	6	T	T	T	T	T	T	T	
	6	100	0.5	1.5	3	3	T	T	T	T	T	
	10	100	0.5	1.2	2	2	6	7.5	T	T	T	
	16	100	0.4	1	1.5	2	3	3	6	6	6	
	25	30	–	1	1.5	2	3	3	6	6	6	
	32	30	–	1	1.2	1.5	3	3	4.5	4.5	4.5	
	40	30	–	0.8	1.2	1.5	3	3	4.5	4.5	4.5	
PKZ2.../CL.../S	25	100	–	1	1.5	2	3	3	6	6	6	
	32	100	–	1	1.2	1.5	3	3	4.5	4.5	4.5	
	40	100	–	0.8	1.2	1.5	3	3	4.5	4.5	4.5	
NZM7-...N(S)(H)	40	35(65)(100)	–	–	1.2	1.2	1.5	2	3	3	3	
	63	35(65)(100)	–	–	–	–	1.5	2	2	2	2	
	80	35(65)(100)	–	–	–	–	–	2	2	2	2	
	100	35(65)(100)	–	–	–	–	–	–	2	2	2	
	125	35(65)(100)	–	–	–	–	–	–	–	–	–	
	160	35(65)(100)	–	–	–	–	–	–	–	–	–	
	200	35(65)(100)	–	–	–	–	–	–	–	–	–	
	250	35(65)(100)	–	–	–	–	–	–	–	–	–	
NZM10	400	45(65)(100)	–	–	–	–	–	–	–	–	–	

Notes	T: Full selectivity
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NZM Circuit-Breakers, Selectivity Table, 400 V AC

Selection:

Incoming circuit-breaker $\triangleq$ NZM standard circuit-breaker, then the selectivity limits apply as given. Incoming circuit-breaker $\triangleq$ NZMS, NZMH breaker, then the high-capacity current limiting breaker

enables a higher selectivity limit to be achieved. The values in brackets apply in this case. Where an NZM standard circuit-breaker is used as **outgoing circuit-breaker**, the selectivity limit

is reduced to the response current of the short-circuit release in the **incoming circuit-breaker**.

I_u : Rated uninterrupted current (A)

I_{rm} : Setting of short-circuit release (A)

Incoming circuit-breakers			Incoming circuit-breakers			Incoming circuit-breakers			
NZM10-...N(S)(H)/ZM			NZM10-...N(S)/ZMV			NZM14			
250	400	630	250	400	630	800	1000	1250	1600
3000	4800	7560	6000	9000	9000	9600	12000	15000	19200
45(65)(100)	45(65)(100)	45(65)(100)	45(65)(100)	45(65)(100)	45(65)(100)	85	85	85	100
Prospective short-circuit current (kA). Set overload and short-circuit releases of the incoming breaker to maximum value.									
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
25	T	T	T	T	T	T	T	T	T
10	T	T	T	T	T	T	T	T	T
6	T	T	T	T	T	T	T	T	T
5	13.6	T	T	T	T	T	T	T	T
4.2	10	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
T	T	T	T	T	T	T	T	T	T
6	T	T	T	T	T	T	T	T	T
6	T	T	T	T	T	30	30	T	T
4	T	T	T	T	T	20	T	T	T
4	T	T	T	T	T	20	T	T	T
3	T	T	T	T	T	20	T	T	T
4	T	T	T	T	T	T	T	T	T
4	T	T	T	T	T	T	T	T	T
3	T	T	T	T	T	T	T	T	T
2.5	7.5	20	7.5	20	20	T(T)(65)	T	T	T
2.5	6	15	6	15	15	T(T)(65)	T	T	T
2.5	6	15	6	15	15	T(50)(50)	T	T	T
2.5	6	15	6	15	15	T(50)(50)	T	T	T
2.5	6	15	6	15	15	T(50)(50)	T	T	T
2.5	6	10	6	10	10	T(50)(50)	T	T	T
–	6	10	6	10	10	T(50)(50)	T(T)(65)	T	T
–	6	10	6	10	10	T(40)(40)	T(T)(65)	T	T
–	–	7.5	6	9	8	9.6	12	15	19.2

NZM Circuit-Breakers

Cable Protection

Protection of PVC-insulated cables against thermal overload in short-circuit conditions.

In accordance with the IEE Wiring Regulations, cables and conductors must be protected against overloads and short circuits.
In NZM, NZMS and NZMH circuit-breakers, overload protection is provided by adjustable, inverse time-delayed overload releases.

Short-circuit protection is provided by adjustable short-circuit releases that open the main contacts in less than 25 ms.
The short total operating delay restricts the temperature rise in the conductors to a minimum.

Tables 1 and 2 show the minimum cross-sections reliably protected by NZM(S, H) circuit-breakers in the event of a short circuit.
(operational voltage $U_N = 380 - 500$ V)

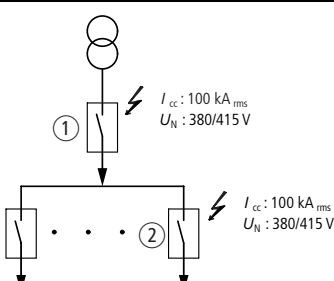
Table 1: Standard and current-limiting circuit-breakers

NZM7-40(-100)N(S)(H)	10
NZM7-125(-250)N(S)(H)	16
NZM10-250(-630)N/ZM250(-630)	
NZM10-250(-630)S/ZM250(-630)	
NZM10-250(-630)H/ZM250(-630)	25
NZM14-800S	
NZM14-1000S	
NZM14-1250S	
NZM14-1600H	95
Minimum protected cross-section (mm ² Cu)	

Table 2: Selectively operating circuit-breakers

Suggestion for progression times	t_v (ms)	
NZM10-400N(S)/ZMV-250	50	35
NZM10-400N(S)/ZMV-400	50	35
NZM10-630N(S)/ZMV-630	50	35
NZM14-800S	100	
NZM14-1000S	100	
NZM14-1250S	100	
NZM14-1600H	100	95
		Minimum protected cross-section (mm ² Cu)

Table 3

NZMH and NZM circuit-breakers connected in series		NZM7-63A	NZM7-80H	NZM7-125H	NZM7-160H	NZM7-200H	NZM7-250H	NZM10-400H/ZM	NZM10-630H/ZM
	NZM7-40N	●	●	●	●	●	●	●	●
	NZM7-63N	—	●	●	●	●	●	●	●
	NZM7-80N	—	—	●	●	●	●	●	●
	NZM7-100N	—	—	●	●	●	●	●	●
	NZM7-125N	—	—	—	●	●	●	●	●
	NZM7-160N	—	—	—	—	●	●	●	●
	NZM7-200N	—	—	—	—	—	●	●	●
	NZM7-250N	—	—	—	—	—	—	●	●

Where the prospective fault current at the point of installation of circuit-breakers is very high, it is conventional to use NZMH current-limiting circuit-breakers having a switching capacity of 100 kA_{rms}. An economic alternative to this is to fit one NZMH current-limiting circuit-breaker upstream of the point

in the network where the fault level is too great for the switching capacity of downstream NZM standard circuit-breakers.

Table 3 shows which NZMH current-limiting circuit-breakers will, when used in combination with downstream NZM standard circuit-breakers, provide positive protection network points having prospective fault levels of 100 kA_{rms}.

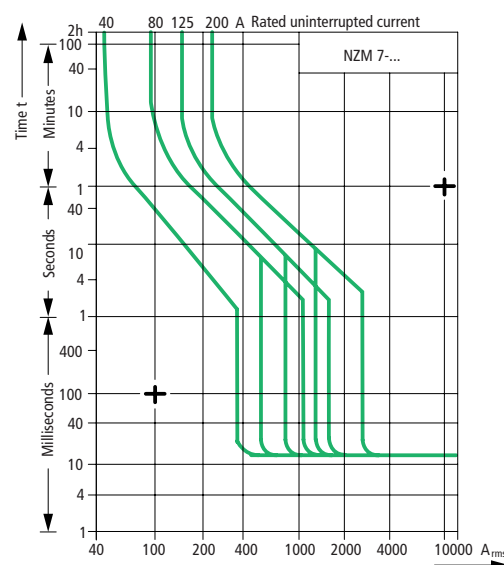
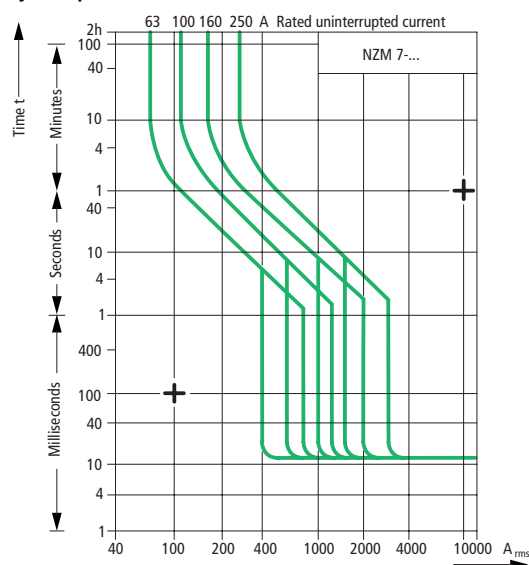
The selectivity limit is determined by the response current of the short-circuit release in the upstream circuit-breaker ①. In many applications, this is sufficient.

Notes

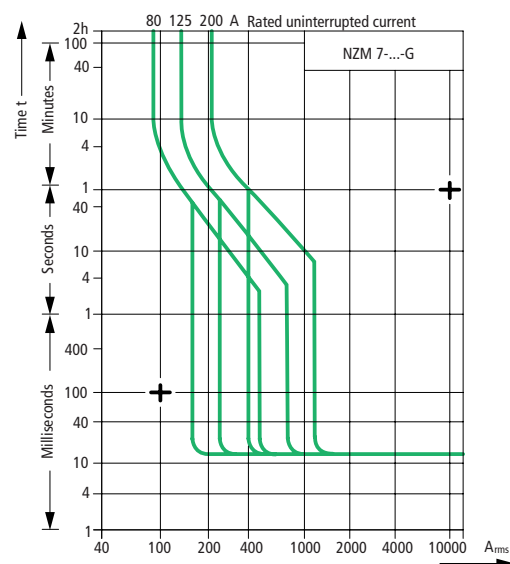
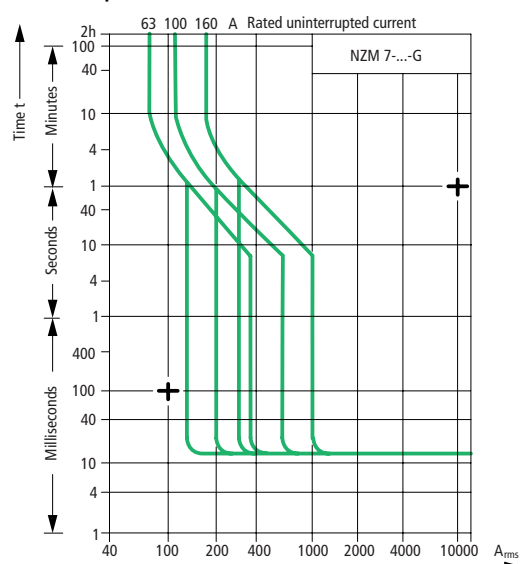
NZM7 Circuit-Breakers

Tripping Characteristics

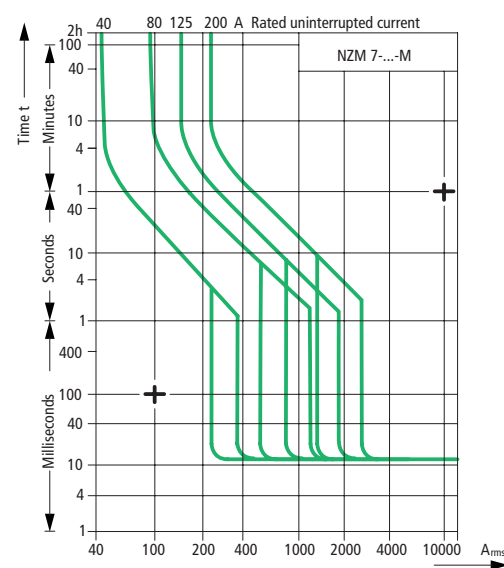
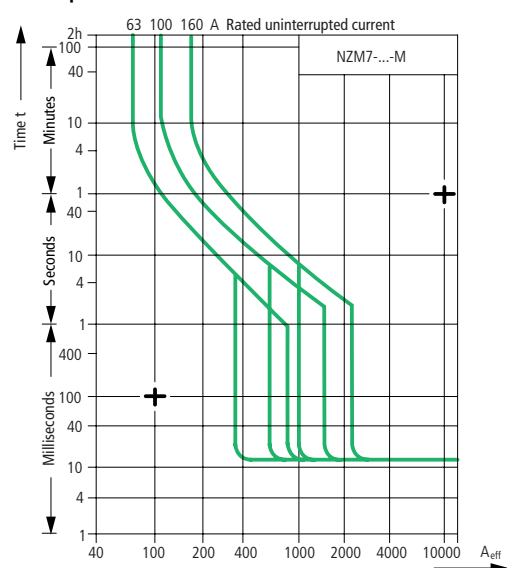
System protection



Generator protection



Motor protection

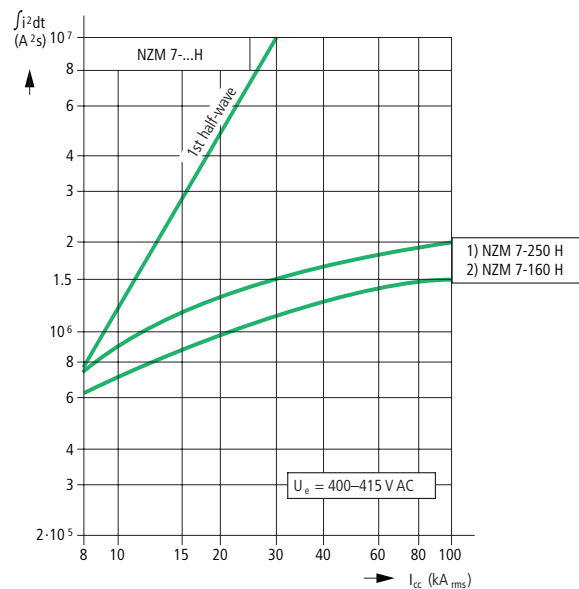
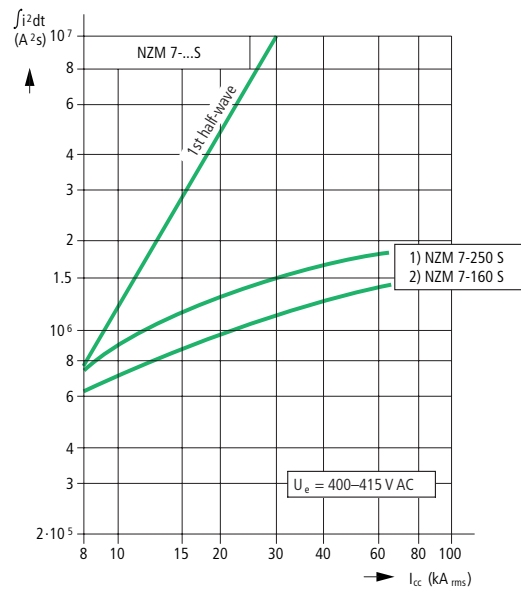
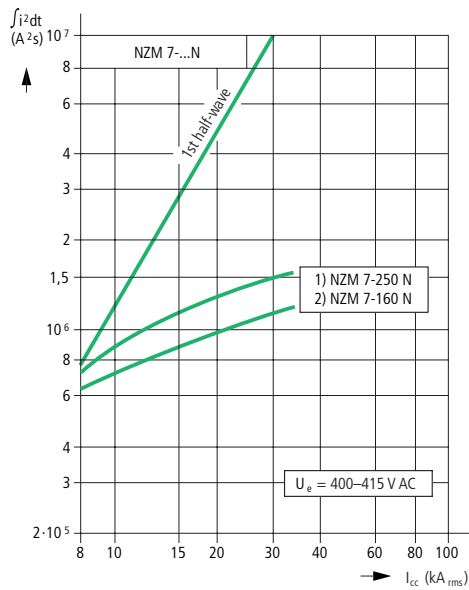
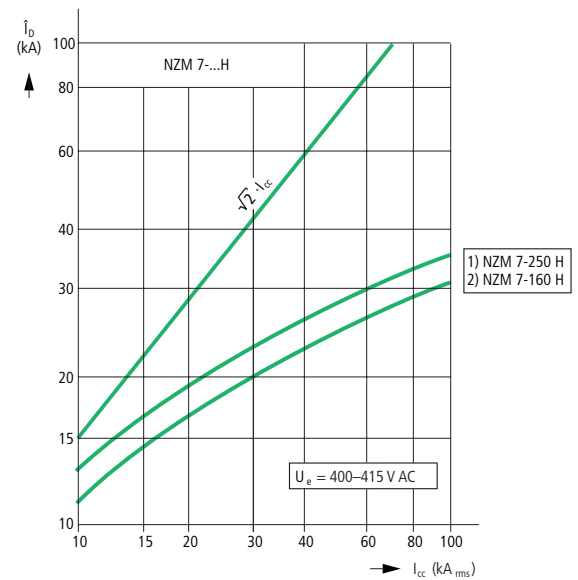
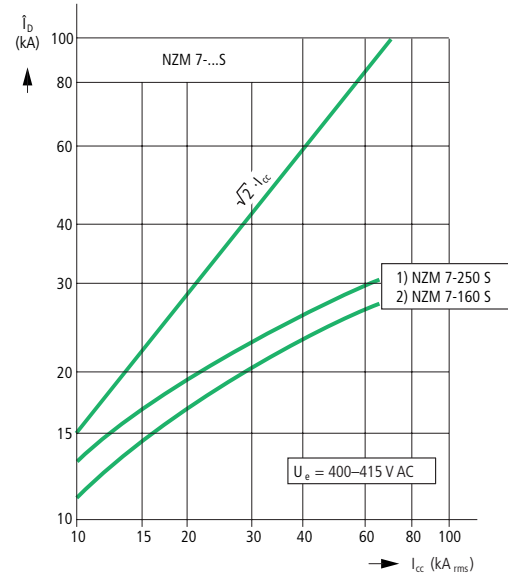
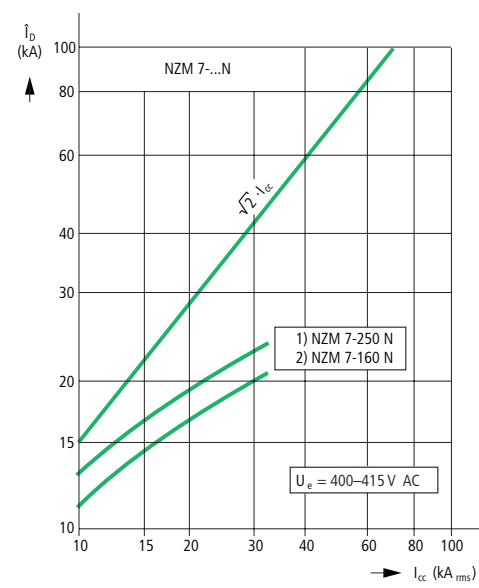


The tripping characteristics show the tripping time of the breakers in relation to the response current.

They show mean values of the tolerance bands at an ambient temperature of 20 °C, starting from cold.

NZM7 Circuit-Breakers

Let-Through Characteristics

Let-through energy I^2t Let-through current $\hat{I}_D$ 

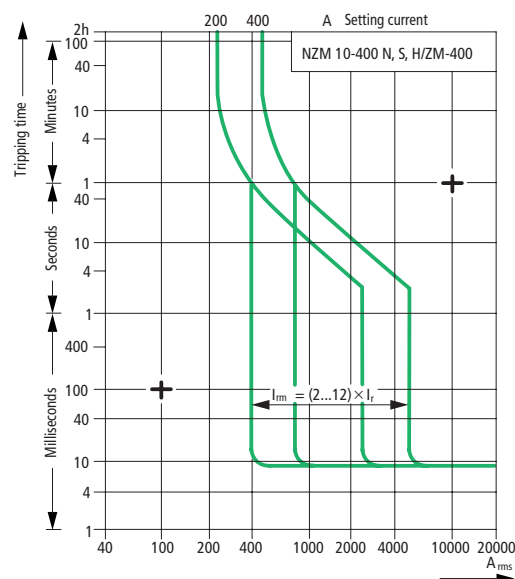
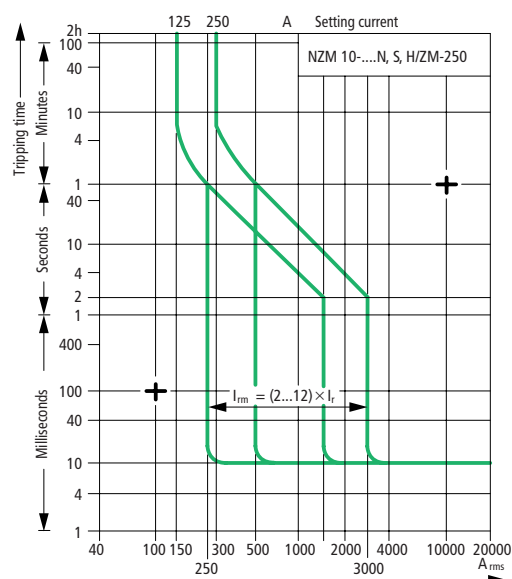
Notes

- 1) NZM7 up to 250 A
- 2) NZM7 from 40 to 160 A

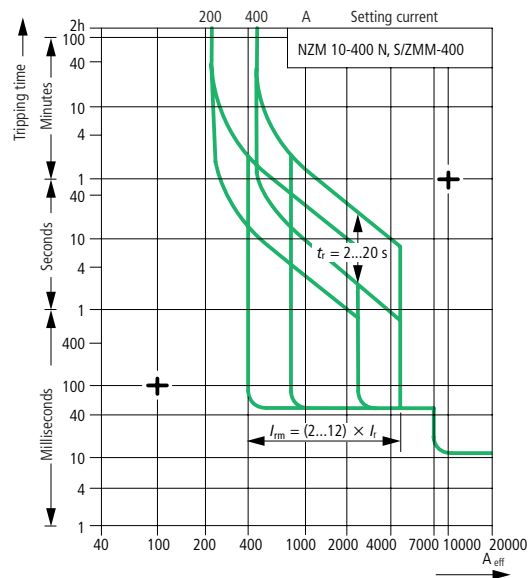
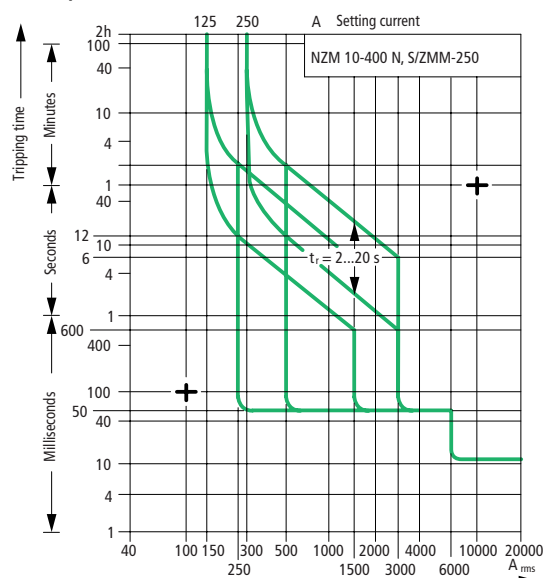
NZM10 Circuit-Breakers

Tripping Characteristics

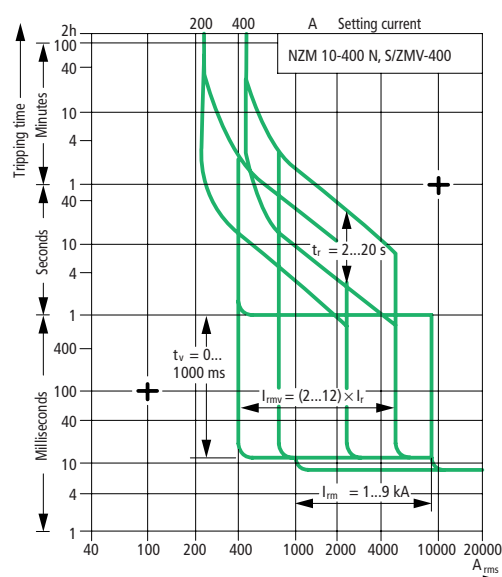
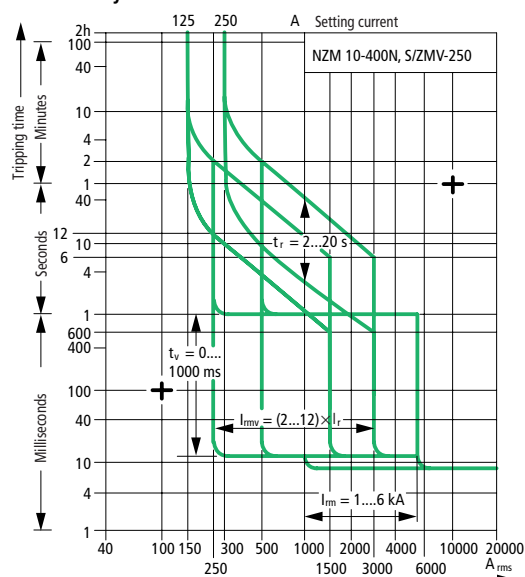
System protection, generator protection



Motor protection



Time selectivity



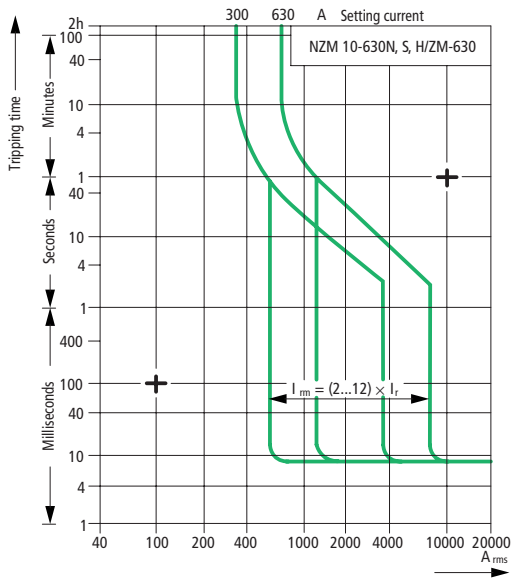
The tripping characteristics show the tripping time of the breakers in relation to the response current.

They show mean values of the tolerance bands at an ambient temperature of 20 °C, starting from cold.

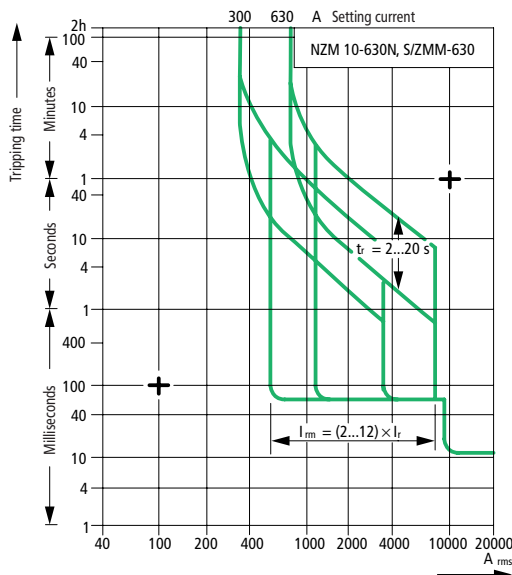
NZM10 Circuit-Breakers

Tripping Characteristics

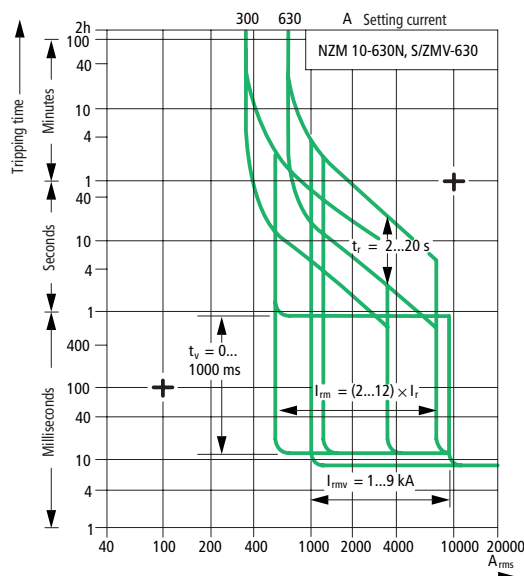
System protection, generator protection



Motor protection



Time selectivity

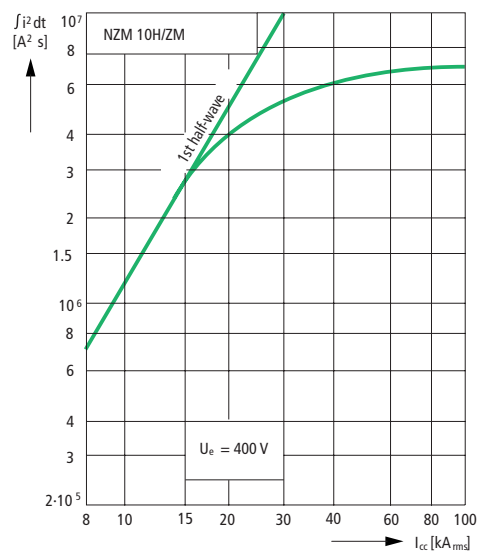
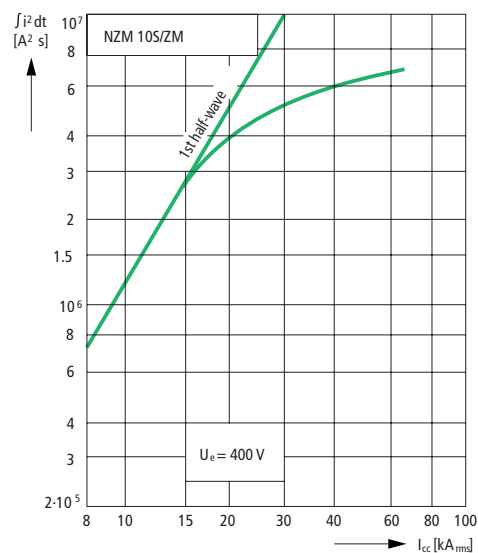
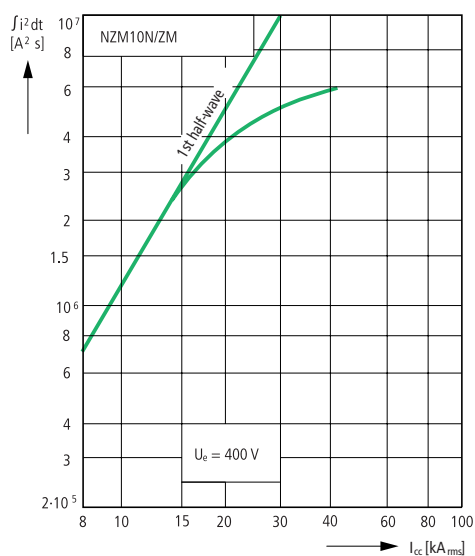
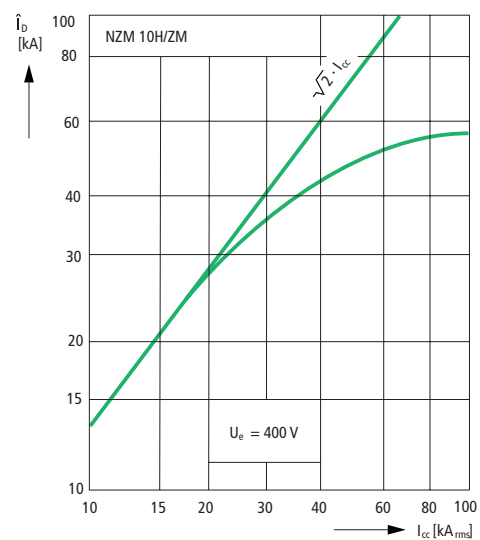
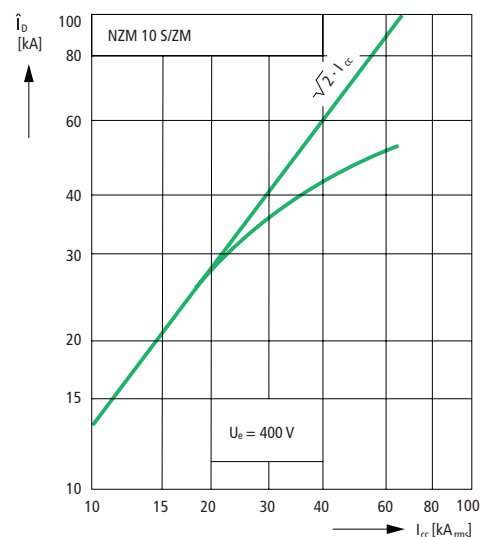
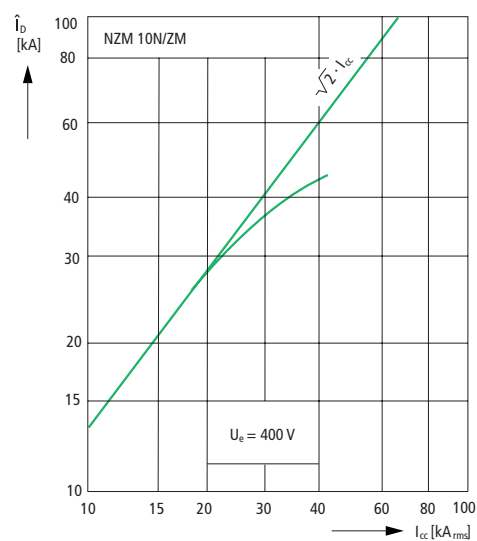


The tripping characteristics show the tripping time of the breakers in relation to the response current.

They show mean values of the tolerance bands at an ambient temperature of 20 °C, starting from cold.

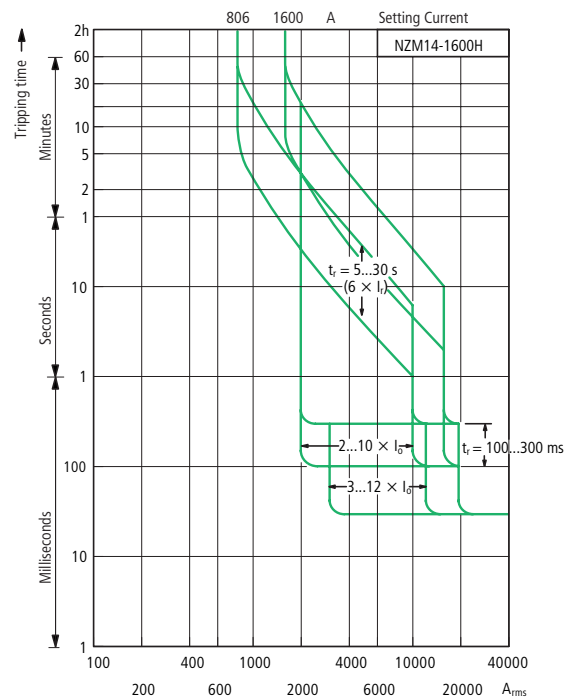
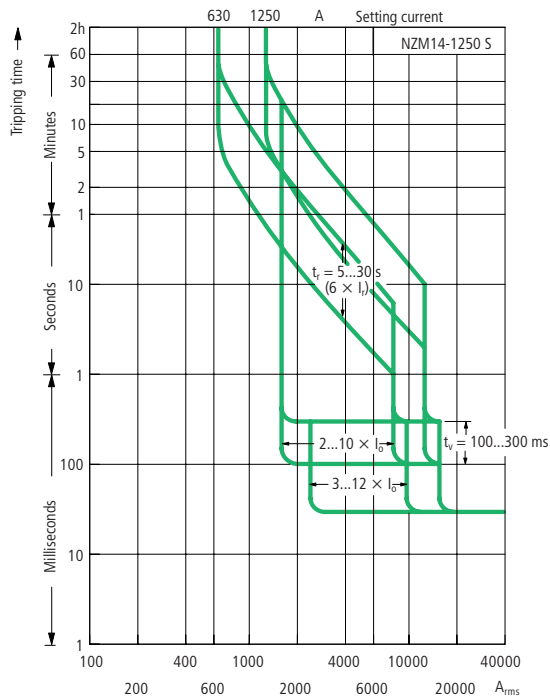
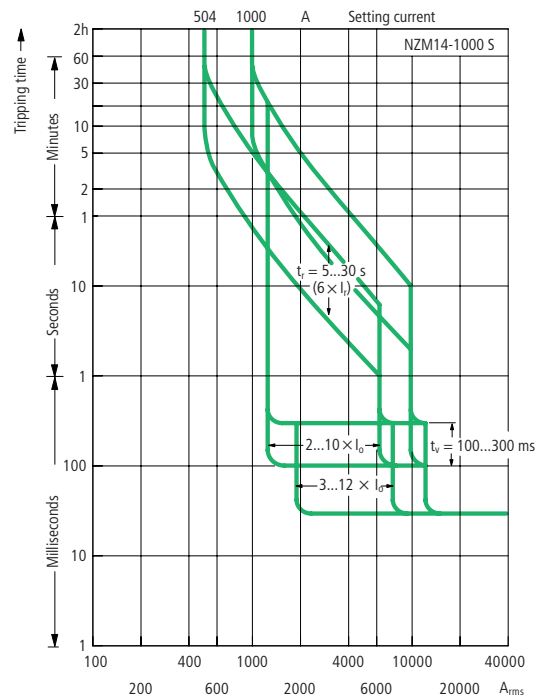
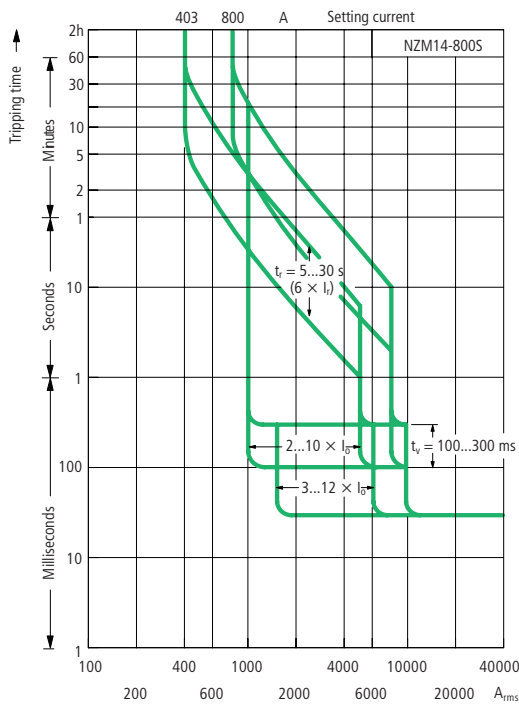
NZM10 Circuit-Breakers

Tripping Characteristics

Let-through energy I^2t Let-through current $\hat{I}_D$ 

NZM14 Circuit-Breakers

Tripping Characteristics

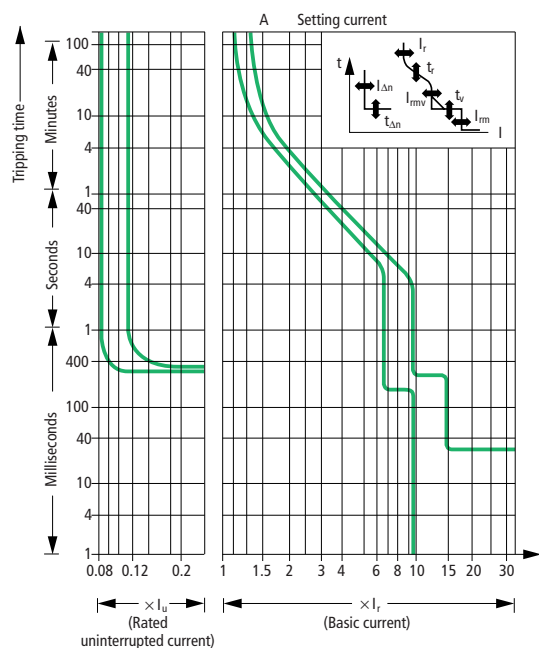


The tripping characteristics show the tripping time of the breakers in relation to the response current.

They show mean values of the tolerance bands at an ambient temperature of 20 °C, starting from cold.

NZM14 Circuit-Breakers

Tripping Characteristics



Setting values chosen for this diagram:

$$\begin{aligned}
 I_o &= 1 \times I_u \\
 I_r &= 1 \times I_o \\
 t_r &= 10 \text{ s} \\
 I_{rmv} &= 8 \times I_o \\
 t_v &= 0,2 \text{ s} \\
 I_{rm} &= 12 \times I_o \\
 I_{\Delta n} &= 0.1 \times I_u \\
 t_{\Delta n} &= 0.3 \text{ s}
 \end{aligned}$$

The tripping characteristics show the tripping time of the breakers in relation to the response current.

They show mean values of the tolerance bands at an ambient temperature of 20 °C, starting from cold.

Notes

NZM7, 10, 14 Circuit-Breakers
Technical Data

Circuit-breakers			NZM7...N	NZM7...S	NZM7...H	NZM7...N	NZM7...S	NZM7...H
Rated uninterrupted current I_u (AC/DC)			160	160	160	250	250	250
Rated impulse withstand voltage U_{imp}								
Main contacts		V	8000	8000	8000	8000	8000	8000
Auxiliary contacts		V	6000	6000	6000	6000	6000	6000
Rated operational voltage U_e		V AC	690	690	690	690	690	690
		V DC	440	440	440	440	440	440
Overvoltage category/ pollution degree			III/3	III/3	III/3	III/3	III/3	III/3
Switching capacity								
Rated short-circuit making capacity I_{cm}		kA	94.5	220	275	94.5	220	275
Rated short-circuit breaking capacity I_{cn}								
I_{cu} IEC/EN 60 947 Test cycle O-t-CO								
I_{cs} IEC/EN 60 947 Test cycle O-t-CO-t-CO								
230 V AC	I_{cu}	kA	45	100	125	45	100	125
	I_{cs}	kA	45	75	94	45	75	94
400/415 V AC	I_{cu}	kA	35	65	100	35	65	100
	I_{cs}	kA	35	49	50	35	49	50
440 V AC	I_{cu}	kA	25	40	60	25	40	60
	I_{cs}	kA	19	20	30	19	20	30
500 V AC	I_{cu}	kA	12	20	25	12	20	25
	I_{cs}	kA	9	10	13	9	10	13
525 V AC	I_{cu}	kA	10	20	25	10	20	25
	I_{cs}	kA	7.5	10	13	7.5	10	13
690 V AC	I_{cu}	kA	6	8	10	6	8	10
	I_{cs}	kA	6	6	8	6	6	8
1000 V AC ²⁾	I_{cu}	kA	–	–	–	–	–	–
440 V DC ³⁾	I_{cu}	kA	20	25	30	20	25	30
	I_{cs}	kA	20	25	30	20	25	30
Max. LV h.b.c. fuse ⁴⁾		A gG/gL	400	400	400	400	400	400
Utilization category			A	A	A	A	A	A
Rated short-time withstand current I_{cw}								
1s current		kA	–	–	–	–	–	–
Rated making and breaking capacity								
Rated operational current I_e								
AC-1	400 V/690 V	A	160/160	160/160	160/160	250/250	250/250	250/250
AC-3	400 V/690 V	A	160/160	160/160	160/160	200/170	200/170	200/170
Lifespan, mechanical		Ops.	20000	20000	20000	20000	20000	20000
Maximum operating frequency		Ops./h	120	120	120	120	120	120
Lifespan, electrical								
AC-1	400 V/690 V	Ops.	7000/5000	7000/5000	7000/5000	3000/2000	3000/2000	3000/2000
AC-2, AC-3	400 V/690 V	Ops.	6000/4000	6000/4000	6000/4000	3500/3500 ⁵⁾	3500/3500 ⁵⁾	3500/3500 ⁵⁾
Current heat loss								
3-pole, at I_u		W	43	43	43	57	57	57
Permissible loading								
At the following ambient temperatures, open/enclosed								
40 °C		%	100/96	100/96	100/96	100/92	100/92	100/92
50 °C		%	96/88	96/88	96/88	92/85	92/85	92/85
60 °C		%	87/80	87/80	87/80	83/–	83/–	83/–
70 °C (65 °C)		%	–/–	–/–	–/–	–/–	–/–	–/–
Overload releases								
Temperature compensation to IEC/EN 60 947		% /K	0.3	0.3 ⁶⁾	0.3 ⁶⁾	0.3	0.3	0.3
Residual error in the range –25 °C/+70 °C (reference temperature 30 °C)								

Notes

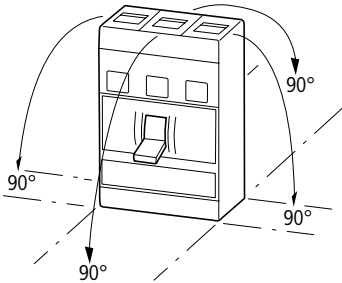
- 1) For use in IT networks, 3-pole up to 415 V
- 2) 50 Hz
- 3) 3 contacts in series
- 4) If the short-circuit at the point of installation is greater than the breaking capacity
- 5) 400 V: max. 110 kW; 690 V: max. 160 KW
- 6) NZM7-40H, NZM7-40H-M: Residual error 0.7 %/K

NZM7, 10, 14 Circuit-Breakers
Technical Data

NZM10...N	NZM10...S	NZM10...H		NZM14...S	NZM14...H
630	630	630		800 – 1250	1600
8000	8000	8000		8000	8000
690	690	690		690 ¹⁾	690 ¹⁾
–	–	–		–	–
III/3	III/3	III/3		III/3	III/3
143	220	440		220	275
65	100	200		100	125
33	50	100		75	94
45	65	100		85/65	100/85
23	33	50		64/49	75/64
45	55	85		65	85
23	28	43		49	64
30	42	65		45	65
15	21	33		34	49
25	42	65		35	56
13	21	33		27	42
20	25	30		25	45
10	13	15		19	34
10	–	–		–	–
–	–	–		–	–
–	–	–		–	–
630	630	630		1250	1600
B	B	A		B	B
8	8	–		15 (0.3 s)	20 (0.3 s)
630	630	630		1250	1600
630	630	630			
20000	20000	20000		2500	2500
60	60	60		60	60
10000	10000	10000		500	500
1250	1250	5000			
130	130	130		173	169
P10-400 NZM10-400	P10-630 NZM10-630	NZM10-630 +AF	TV- NZM10 (1000 A)	NZM14-1250 (1000 A)	NZM14-1600 (1600 A)
100/100	100/96	96/96	100/96	100/–	100/–
100/100	96/90	90/90	96/–	100/–	90/–
100/100	90/84	84/84	90/–	95/–	76/–
100/100	84/76	–/–	84/–	(75/–)	(60/–)
–	–	–	–	–	–

General technical data

- AC = 50/60Hz
- Standards IEC/EN 60 947, VDE 0660, UL/CSA
- Protection against direct contact
Finger and back-of-hand proof to IEC 536
- Climatic proofing
Damp heat, constant to IEC 60 068-2-3
Damp heat, cyclical to IEC 60 068-2-30
- Ambient temperature min./max. °C –25/+40 at 100 % I_u
(NZM14: –5/+45 at 100 % I_u)
- Mechanical shock resistance 20 g (shock duration 20 ms,
NZM14: 14.5 ms)
- Dimensions→ Page 10/102
- Weight → Page 15/023
- Mounting position up to 90° in any direction
(NZM14: 90° to the front I_{max} = 0.9 × I_u)



Direction of current flow as required

- Safe isolation to IEC 536
- Between auxiliary contacts and main contacts 500 V AC
- Between auxiliary contacts 300 V AC

NZM7, 10, 14 Circuit-Breakers
Technical Data

Circuit-breakers			AC = 50/60 Hz			NZM7		NZM10		NZM14		
Auxiliary contacts			EK.. (N/RHI)		VHI		NAGM		NHI/RHI/VHI		NHI/RHI	
Rated operational voltage U_e		V AC	500	500	500	500	500	480				
		V DC	220	220	220	220	220	220				
Conventional thermal current I_{th}		A	6	4	6	6	6	5				
Rated operational current I_e												
AC-15	115 V	A	6	4	6	6	6	5				
	230 V	A	6	4	6	6	6	5				
	400 V	A	4	2	4	3						
	500 V (480 V)	A	2	1	2	1.5	(2)					
DC-13	24 V	A	6	3	6	1	4					
	60 V	A	3	1.5	3	0.8	0.6					
	110 V	A	1	0.5	0.7	0.7						
	220 V	A	0.5	0.2	0.3	0.3	0.3					
Short-circuit protection												
Max. fuse		A	10	10	10	6						
Max. miniature circuit-breaker		A	10	6	6	6						
Terminal capacity												
1 or 2 conductors, solid or flexible		mm ²	0.75 – 2.5	0.75 – 2.5	0.75 – 2.5	0.5 – 2.5	0.5 – 2.5					
Flexible with ferrule		AWG	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14					
Voltage releases												
Shunt releases												
Rated control voltage U_s		V AC	12 – 500			24 – 690	110 – 480					
		V DC	12 – 500			24 – 690	24 – 230					
Operating range	AC		$0.7 - 1.1 \times U_s$			$0.7 - 1.1 \times U_s$	$0.7 - 1.1 \times U_s$					
	DC		$0.7 - 1.1 \times U_s$			$0.85 - 1.1 \times U_s$	$0.75 - 1.25 \times U_s$					
Rating												
Pull-in	AC/DC	VA/W	2/2			5/3						
Sealing	AC/DC	VA/W	–			3/3						
Inrush current (peak value)												
	110 – 115 V AC	A	–			–	1.1					
	200 – 480 V AC	A	–			–	0.93					
	24 V DC	A	–			–	2.52					
	48 V DC	A	–			–	1.55					
	100 – 115 V DC	A	–			–	0.67					
	200 – 230 V DC	A	–			–	0.35					
Undervoltage releases												
Rated control voltage U_s		V AC	24 – 500			24 – 690	100 – 450					
		V DC	24 – 500			24 – 690	24 – 230					
Operating range												
Drop-out	AC/DC		$0.7 - 0.35 \times U_s$			$0.7 - 0.35 \times U_s$	$0.7 - 0.35 \times U_s$					
Pull-in	AC/DC		$0.85 - 1.1 \times U_s$			$0.85 - 1.1 \times U_s$	$0.85 - 1.1 \times U_s$					
Rating												
Pull-in	AC/DC	VA/W	2/2			5/3	5/–					
Sealing	AC/DC	VA/W	2/2			3/3	5/–					
Inrush current (peak value)												
	24 V DC	mA	–			–	22.7					
	100–115 V DC	mA	–			–	6					
Terminal capacity												
1 or 2 conductors, solid or flexible		mm ²	0.75 – 2.5			0.5 – 2.5	0.5 – 2.5					
Flexible with ferrule		AWG	18 – 14			18 – 14	18 – 14					

NZM7, 10, 14 Circuit-Breakers
Technical Data

Circuit-breakers			AC = 50/60 Hz	NZM7	NZM10	NZM14
Remote operator						
Rated control voltage U_s		V AC	110 – 415	110 – 415	100 – 230	
		V DC	24 – 240	24 – 240	24 – 110	
Operating range	AC		$0.85 - 1.1 \times U_s$	$0.8 - 1.1 \times U_s$	$0.85 - 1.1 \times U_s$	
	DC		$0.85 - 1.1 \times U_s$	$0.85 - 1.1 \times U_s$	$0.85 - 1.1 \times U_s$	
Rating	110/115 VAC	VA	–	–	690	
	110/120 VAC	VA	400	240	–	
	200/230 VAC	VA	–	–	740	
	220/240 VAC	VA	400	320	–	
	380/415 VAC	VA	1000	440	–	
	24 VDC	W	350	240	330	
	48/60 VDC	W	400	240	–	
	100/110 VDC	W	–	–	460	
	100/130 VDC	W	–	240	–	
	110/120 VDC	W	400	–	–	
220/240 VDC	W	400	240	–		
Total closing/opening time		ms	100	60/30	60/2000	
Lifespan, mechanical	Operations	Ops.	20000	10000	3000	
Maximum operating frequency		Ops./h	20	20	20	
Terminal capacity						
1 or 2 conductors, solid or flexible		mm ²	0.75 – 2.5	0.5 – 2.5	0.5 – 1.5	
Flexible with ferrule		AWG	18 – 14	18 – 14	18 – 16	

NZM7, 10, 14 Circuit-Breakers, Switch-Disconnectors
Technical Data

Switch-disconnectors			P7/NZM7		P10	NZM10 ...N/B	NZM14	
Conventional thermal current I_{th}	A		160	250	630	630	1250	1600
Rated impulse withstand voltage U_{imp}								
Main contacts	V		8000	8000	8000	8000	8000	8000
Auxiliary contacts	V		6000	6000	6000	6000		
Rated operational voltage U_e								
	V AC		690	690	690	690	690	690
3 contacts in series	V DC		440	440	440	440	250	250
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3
Switching capacity								
Rated short-circuit making capacity I_{cm}	kA		4,3	5,1	17	13,6	32	45
Rated short-time withstand current I_{cw} (1 s current)	kA		3	3,5	10	8	15	20
Rated conditional short-circuit current/ with fuse 100 kA	A gG/gL		160	250	800	630	1250	1600
Rated making and breaking capacity								
Rated operational current I_e								
400 V AC	AC-22/23 A	A	160	250	630	630		
440 V DC ¹⁾	DC-5	A	160	250	630	630		
Lifespan, mechanical	Ops.		20000	20000	20000	20000	2500	2500
Maximum operating frequency	Ops./h		120	120	60	60	60	60
Lifespan, electrical								
AC-1	400V/690 V	Ops.	7000/5000	3000/2000	10000	10000	500	500
AC-2, AC-3	400V/690 V	Ops.	6000/4000	3500 ²⁾	6000	1250		
Current heat loss 3-pole, at I_{th}	W		22	49	120	120	173	169

Notes
¹⁾ 3 contacts in series
²⁾ 400 V: max. 110 kW, 690 V: max. 160 kW

NZM7, 10, 14 Circuit-Breakers, Switch-Disconnectors
Technical Data

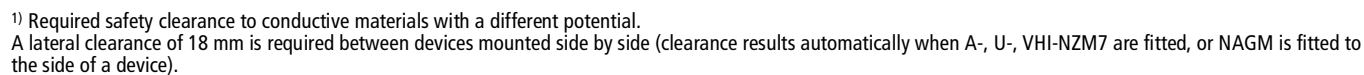
Circuit-breakers			NZM7		Terminal Type	NZM10		NZM14		
Rated uninterrupted current	A	160	250	400		630	800	1000/1250	1600	
Terminal capacity, main contacts										
Terminals			+	+		–	–	–	–	–
Bolt terminals			–	–		+	+	+	+	+
Terminal as an accessory						+	+			
Round conductor, copper										
1 conductor										
Solid		Min./Max. mm ²	2.5/16	2.5/16	–	–/–	–/–	–	–	–
Stranded		Min./Max. mm ²	2.5/120	2.5/150	K2X120 K2X240 K300	70/120 50/240 ¹⁾ 120/300	70/120 50/240 ¹⁾ 120/300	–	–	–
2 conductors										
Solid		Min./Max. mm ²	2.5/16	2.5/16	–	–	–	–	–	–
Stranded		Min./Max. mm ²	2.5/35	2.5/70	K2X120 K2X240	70/120 50/240 ¹⁾	70/120 50/240 ¹⁾	–	–	–
Copper strip (number of laminations × width × thickness)										
Terminals										
Required cross-section		mm	2)	2)	K22X21	11×21×1	2× (11×21×1)	–	–	–
Max. connectable		mm	2× (6×16×0.8)	2× (10×16×0.8)		2× (11×21×1)	2× (11×21×1)	–	–	–
Bolt terminal										
Copper strip, slotted		mm					10×40×1	Please enquire		
Busbar connection										
Bolt terminals			M8	M8		M12	M12	2 × M12	2 × M12	2 × M12
Thread size			M8	M8		M12	M12	2 × M12	2 × M12	2 × M12
Copper busbar size		mm		24×6			2×(40×5)	50×10	2×(40×10)	2×(50×10)

Notes
¹⁾ Sectoral cable: max. 185 mm²
²⁾ Rated uninter-
rupted current I_u
Copper strip
100 A 3 × 9 × 0.8 mm
125 A 6 × 9 × 0.8 mm
160 A 9 × 9 × 0.8 mm
200 A 6 × 16 × 0.8 mm
250 A 10 × 16 × 0.8 mm

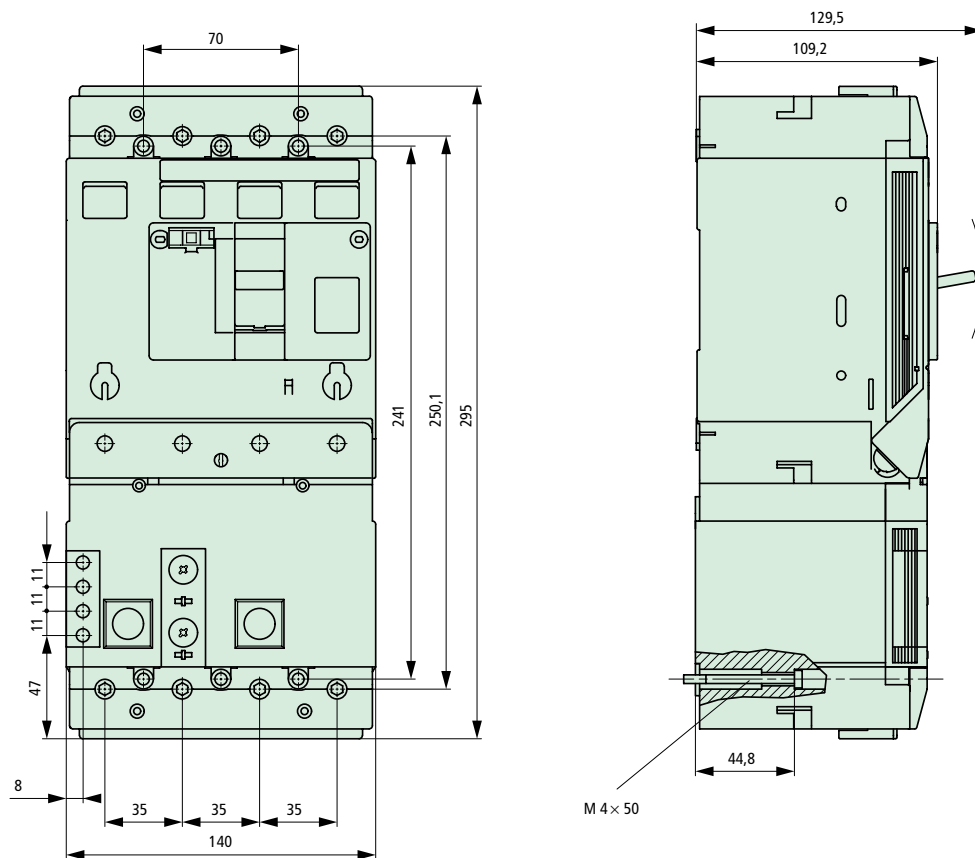
Circuit-breakers, switch-disconnectors

3-pole up to 160 A

3- and 4-pole up to 250 A



NZM74 + FIP(V)(30)

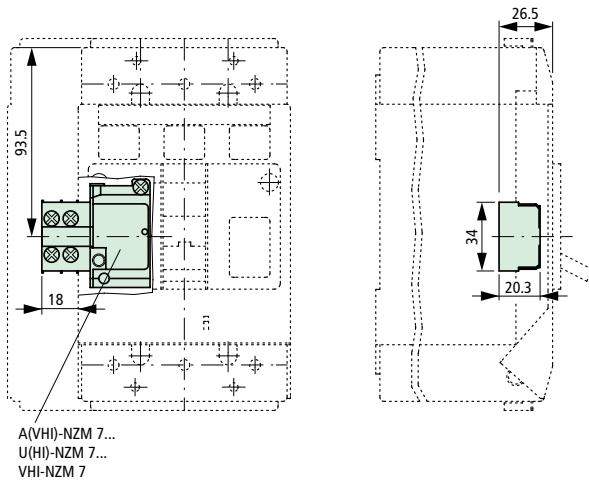


NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

Dimensions

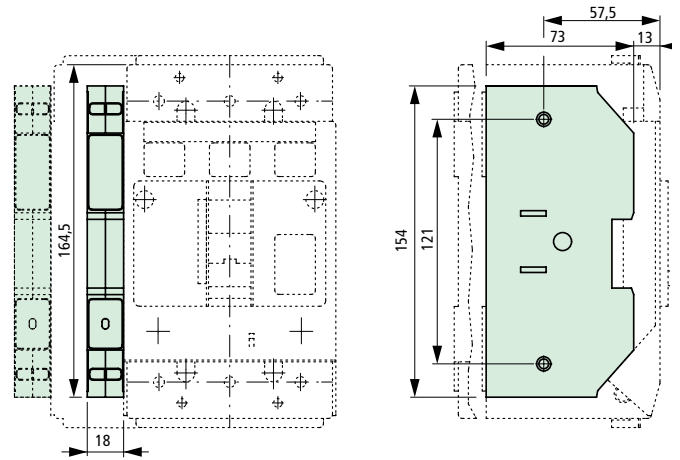
Shunt releases, undervoltage releases
Early-make auxiliary contacts

A-, U-, VHI-NZM7



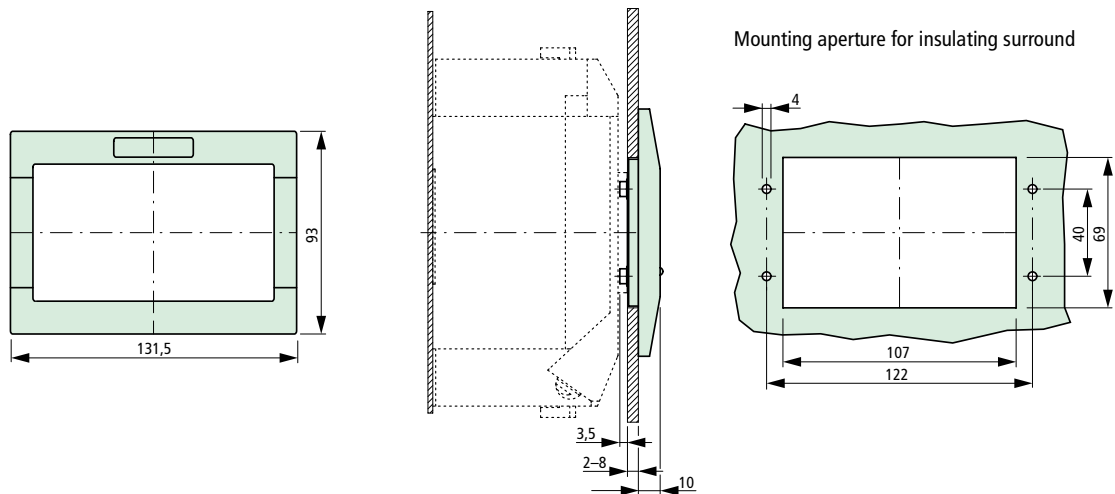
Trip-indicating auxiliary contacts

NAGM-NZM7



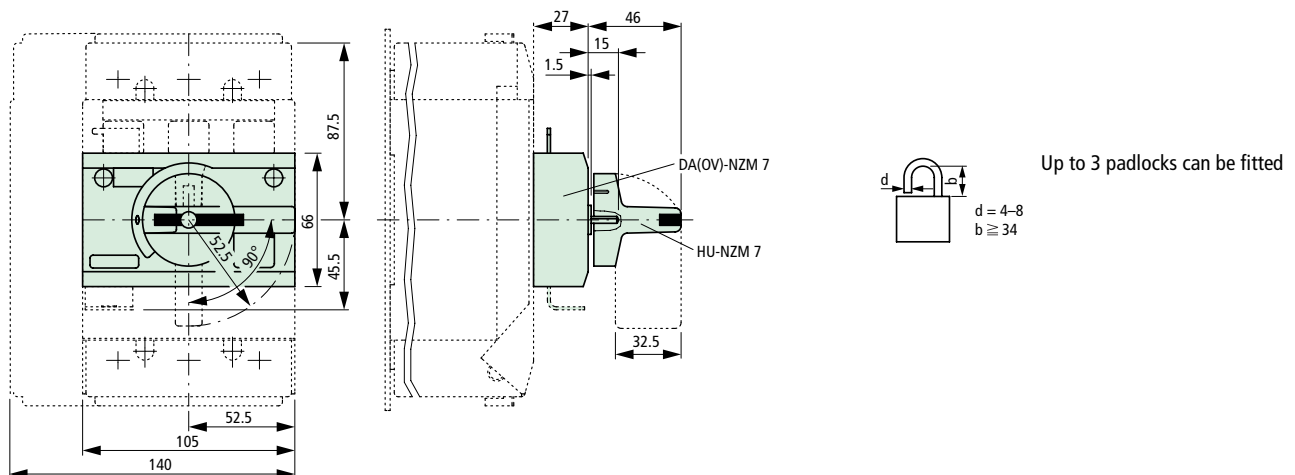
Insulating surround

RT-NZM7



Rotary drive/rotary handle for surface mounting switches

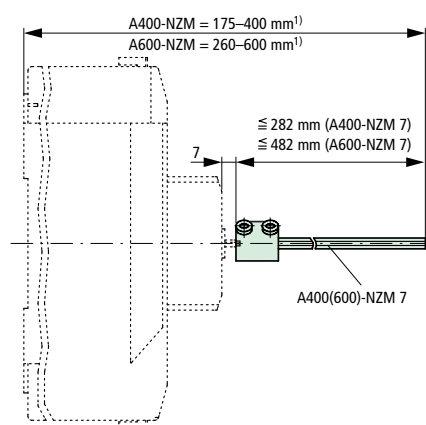
DA(OV)-NZM7 HU-NZM7



NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

Dimensions

Extension shaft

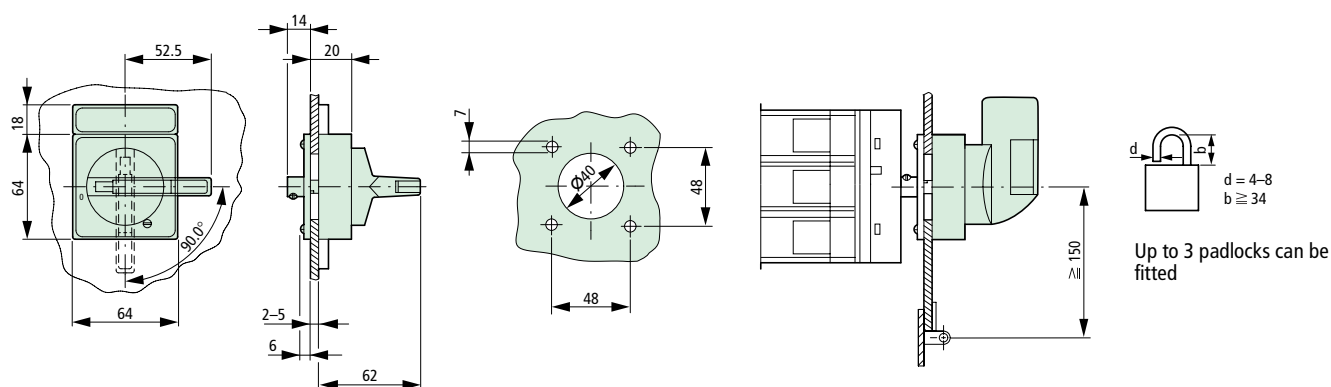


¹) Mounting depth

Door coupling rotary handle for rear mounting switches

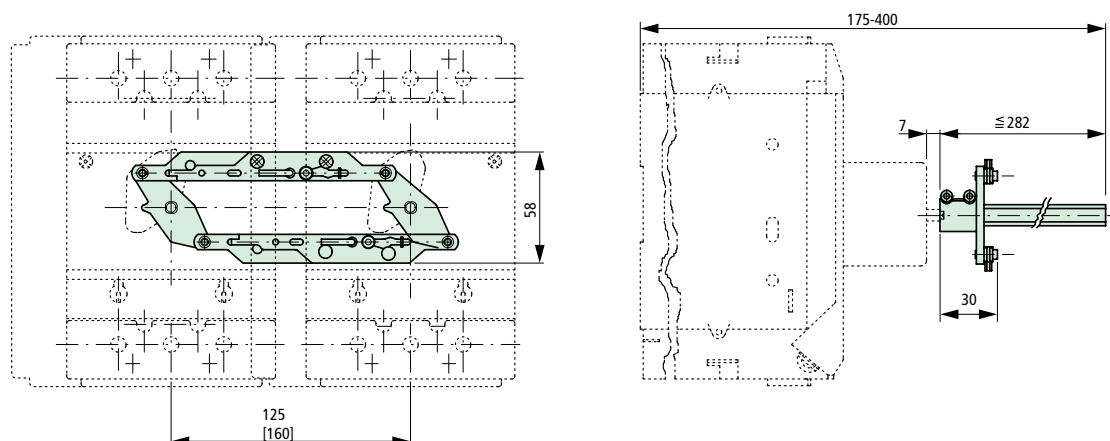
(R)H-NZM7
HOV-NZM7

Mounting aperture for
door coupling rotary handle



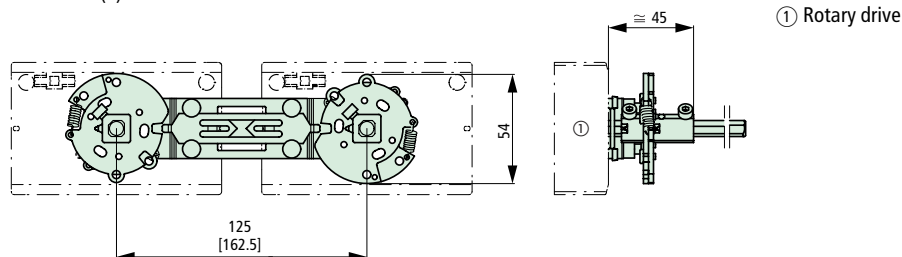
Paralleling mechanism

K2-P7(4)



Mechanical interlock

KV-2NZM7(4)



Notes

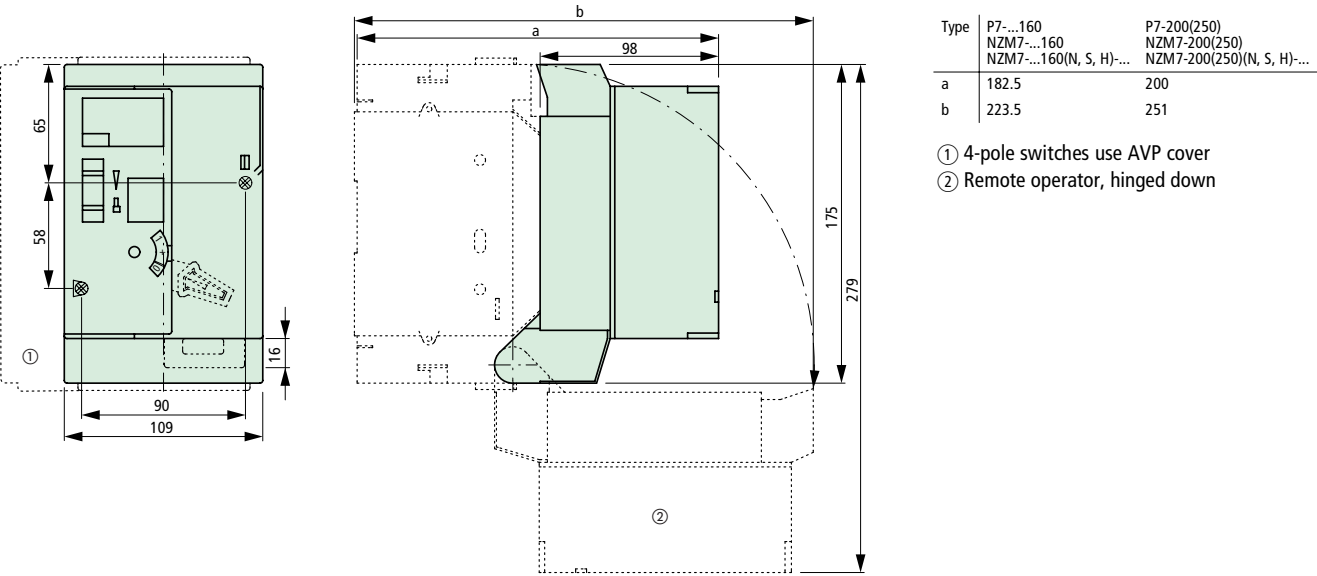
[...] Dimensions apply to 4-pole devices

NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

Dimensions

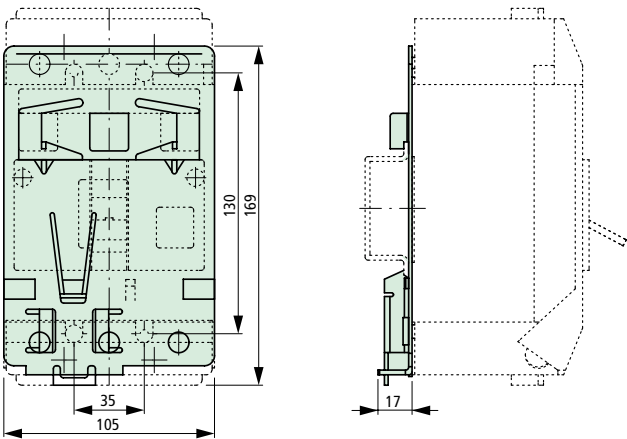
Remote operator

R-NZM7



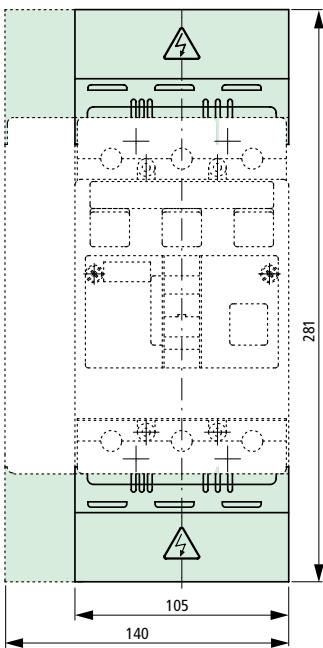
Clip plate

C-NZM7

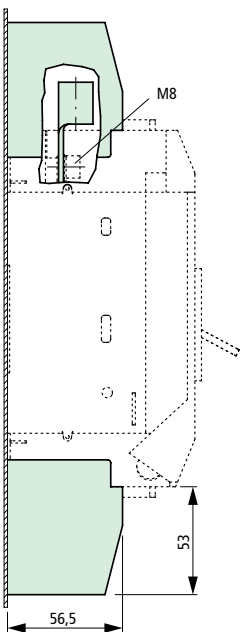


Cable lug/cable lug cover

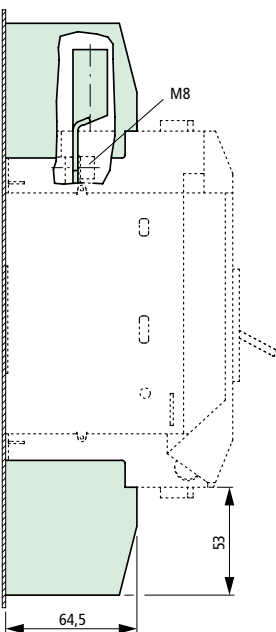
KS...-NZM7



KS95-NZM7
KS120-NZM7



KS150-NZM7

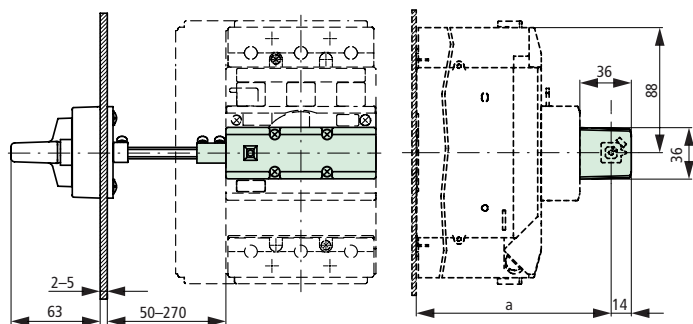


NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

Dimensions

Side wall operator

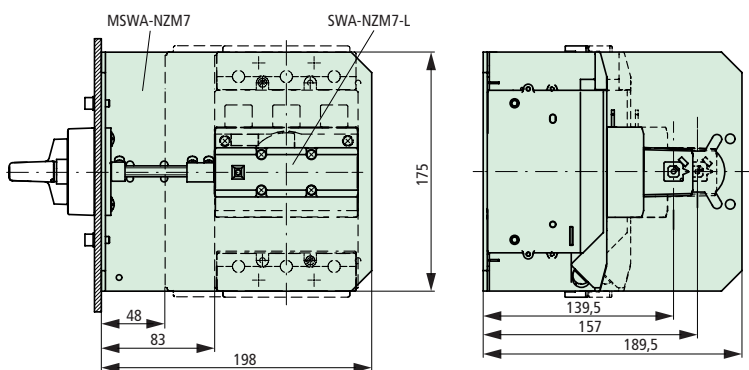
SWA-NZM7



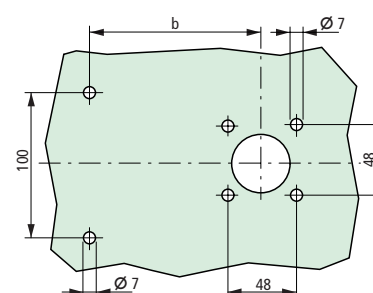
Type	P7-...160 NZM7-...160 NZM7-...160N(S)(H)	P7-200(250) NZM7-...200(250) NZM7-...200(250)N(S)(H)
a	136.5	154
b	116.5	134

Mounting bracket for side wall operator

MSWA-NZM7

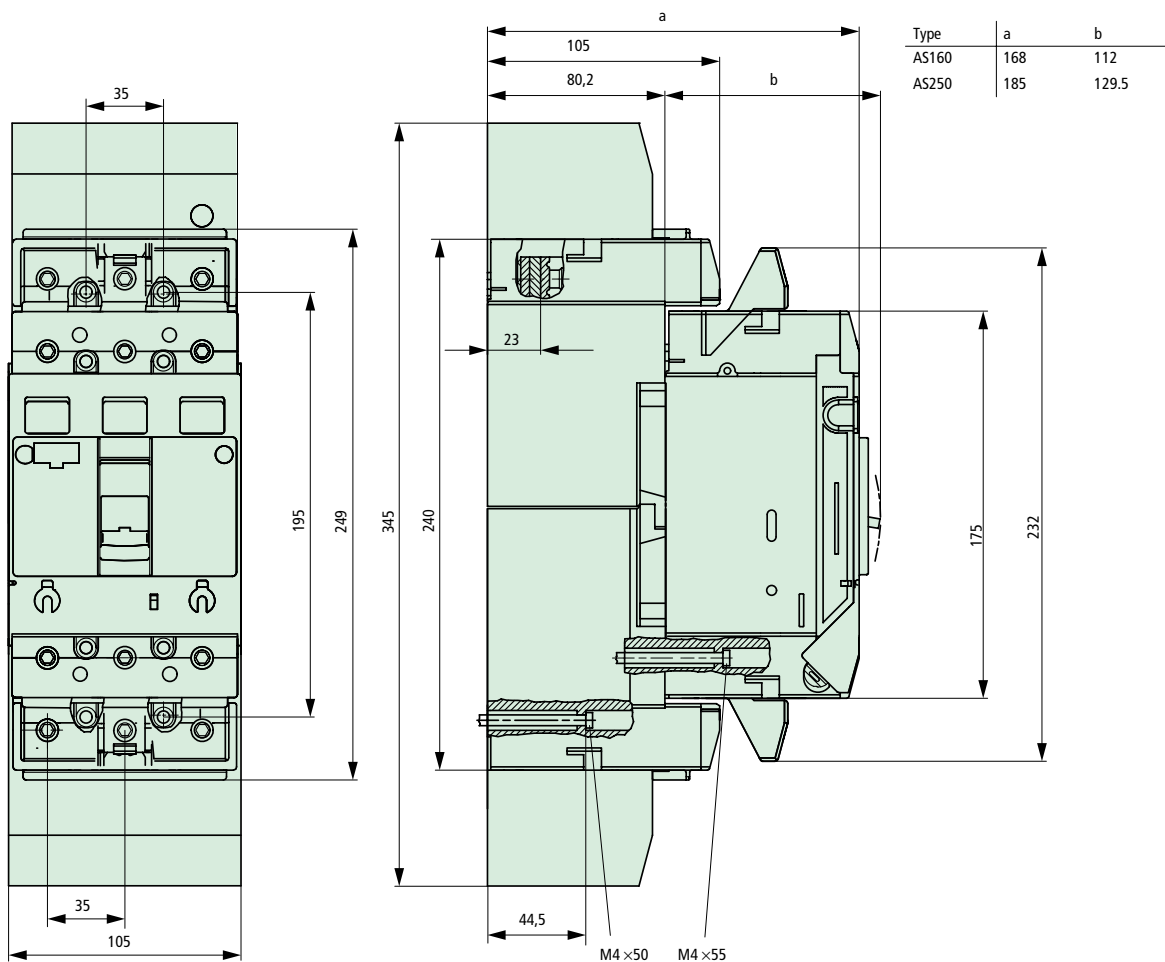


Mounting aperture for rotary handle



Plug-in adapter

AS3-NZM7



NZM7 Circuit-Breakers, NZM7, P7 Switch-Disconnectors

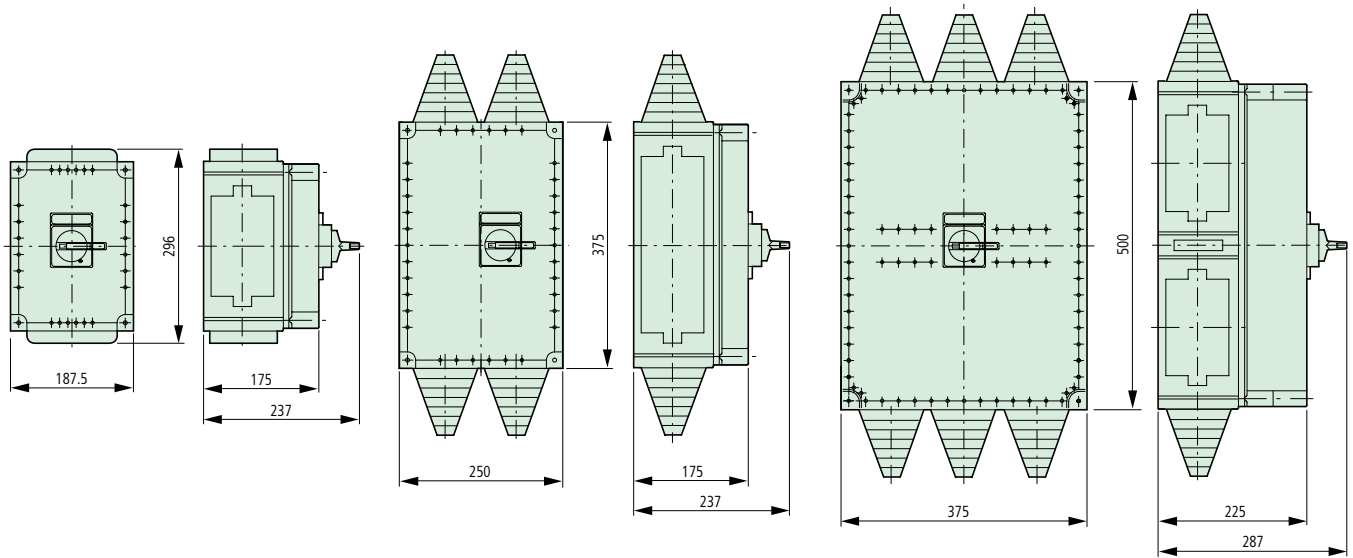
Dimensions

Insulated enclosures for

NZM7-63
P7-63

NZM7-125
P7-160

NZM7-250
P7-250



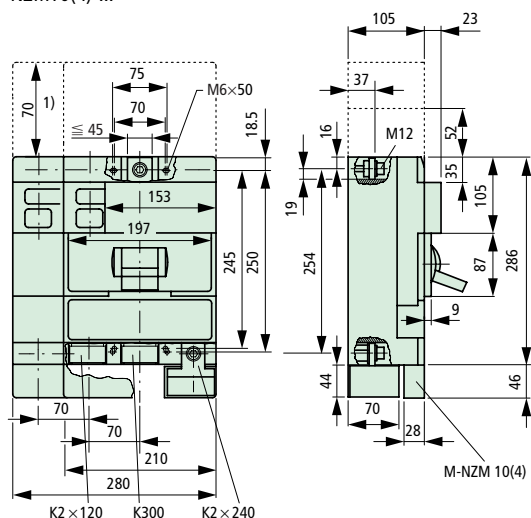
NZM10 Circuit-Breakers, NZM10, P10 Switch-Disconnectors

Dimensions

Circuit-breakers, switch-disconnectors

P10(4)-...
NZM10(4)-...

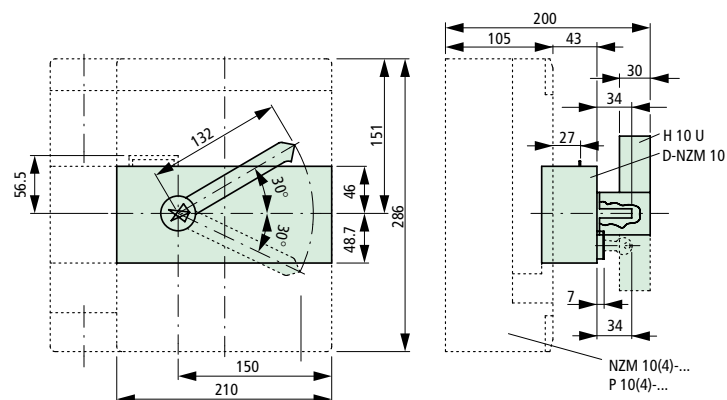
A lateral clearance of 15 mm is required between devices mounted side by side



1) Safety clearance is required to conductive materials having a different potential; does not apply to connected stripped conductors

Rotary drive

D-NZM10

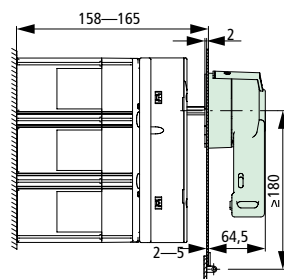
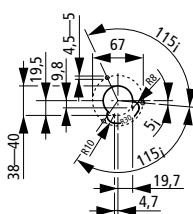
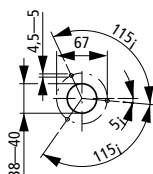
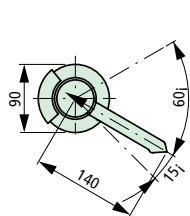


Door coupling rotary

H10
H10 F

Drilling diagram
H10

Drilling diagram
H10-F

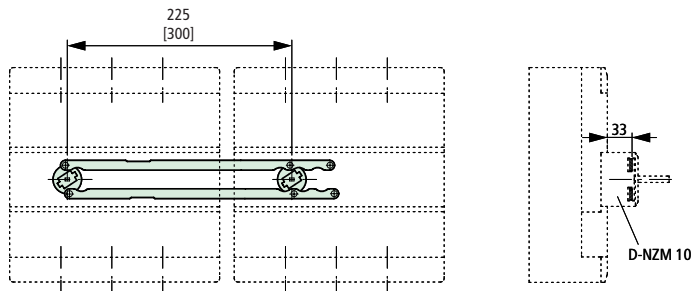


NZM10 Circuit-Breakers, NZM10, P10 Switch-Disconnectors

Dimensions

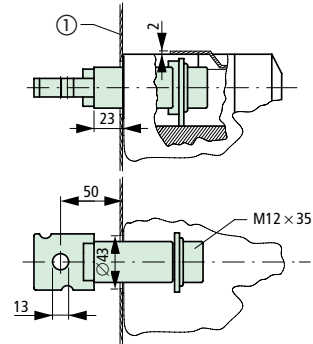
Paralleling mechanism

K2-P10(4)



Rear terminal bolt

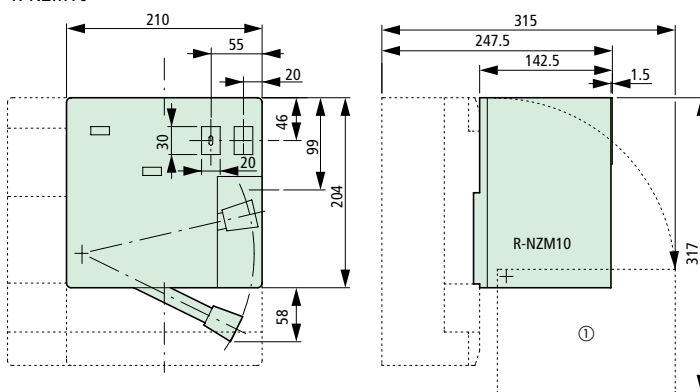
RG-NZM10



① Mounting plate

Remote operator

R-NZM10



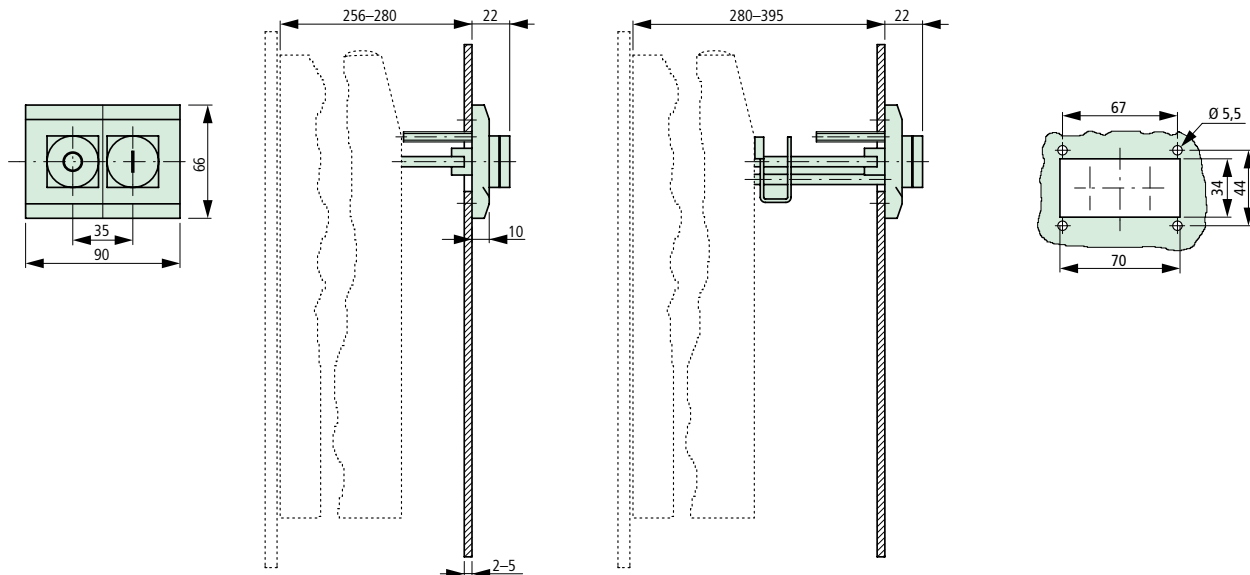
① Remote operator, hinged down

Push-buttons for remote operation enclosed switches

MD-NZM10

MDV-NZM10

Mounting aperture for push-buttons



Notes

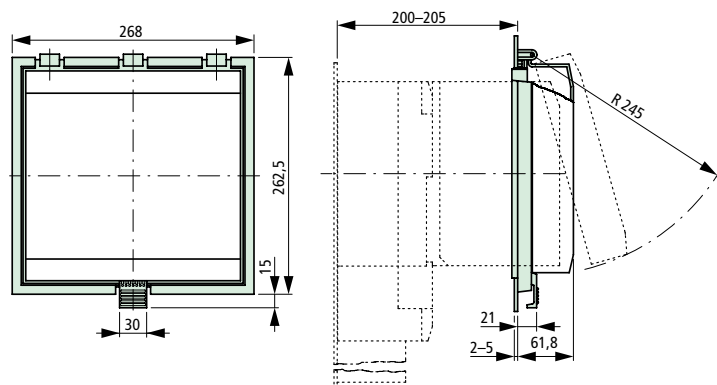
[...] Dimension applies to 4-pole devices.

NZM10 Circuit-Breakers, NZM10, P10 Switch-Disconnectors

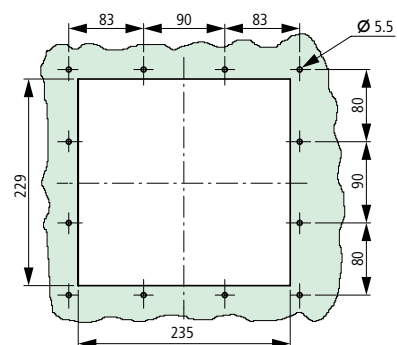
Dimensions

Protective cover for door cutout

RTR-NZM10



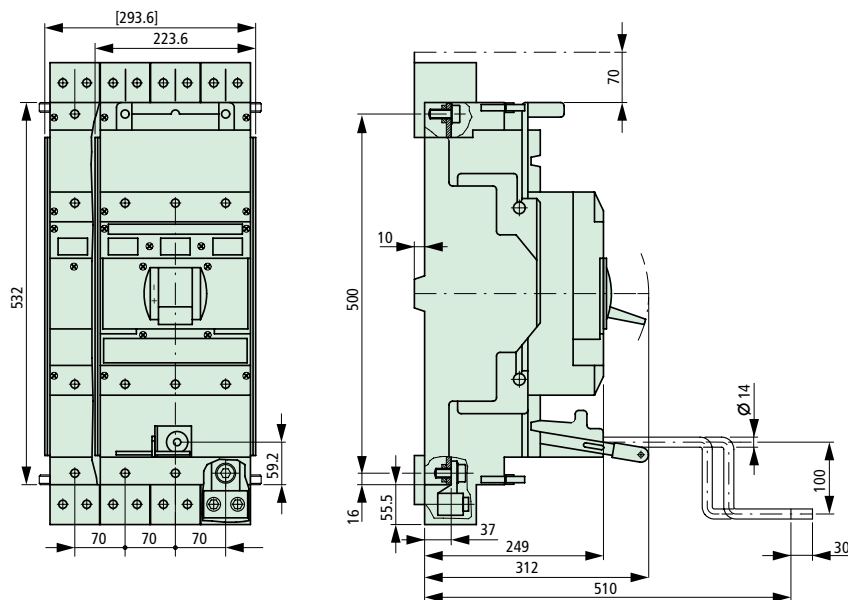
Mounting aperture



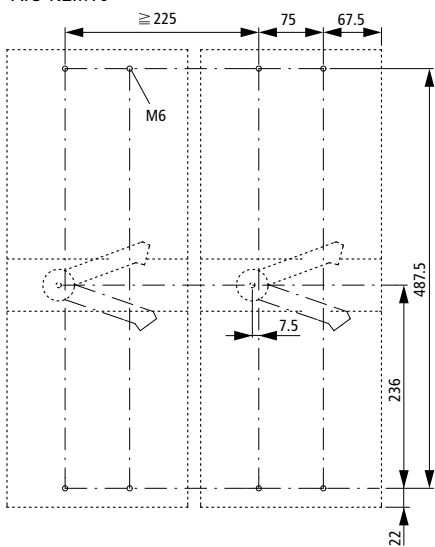
Withdrawable unit

AF3-NZM10

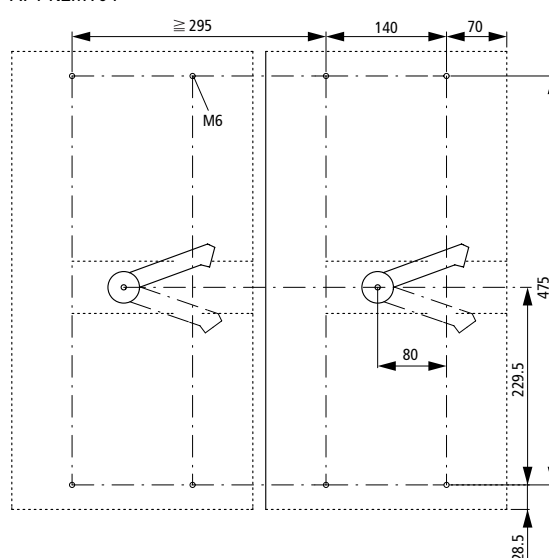
AF4-NZM104



AF3-NZM10



AF4-NZM104



Notes

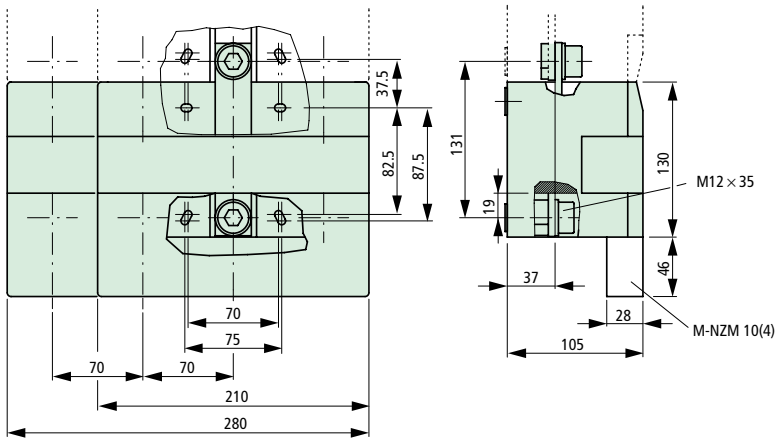
[...] Dimension applies to 4-pole devices.

NZM10 Circuit-Breakers, NZM10, P10 Switch-Disconnectors

Dimensions

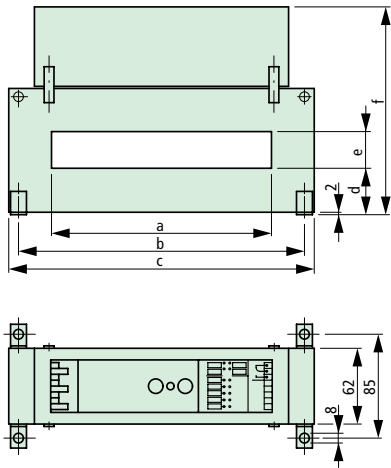
Earth-fault releases

TV-NZM10(4)



Residual-current operated relays

NF10(4)-...



Type	a	b	c	d	e	f
NZM10-...	180	234	250	38	30	170
NZM104-...	245	299	315	38	30	170

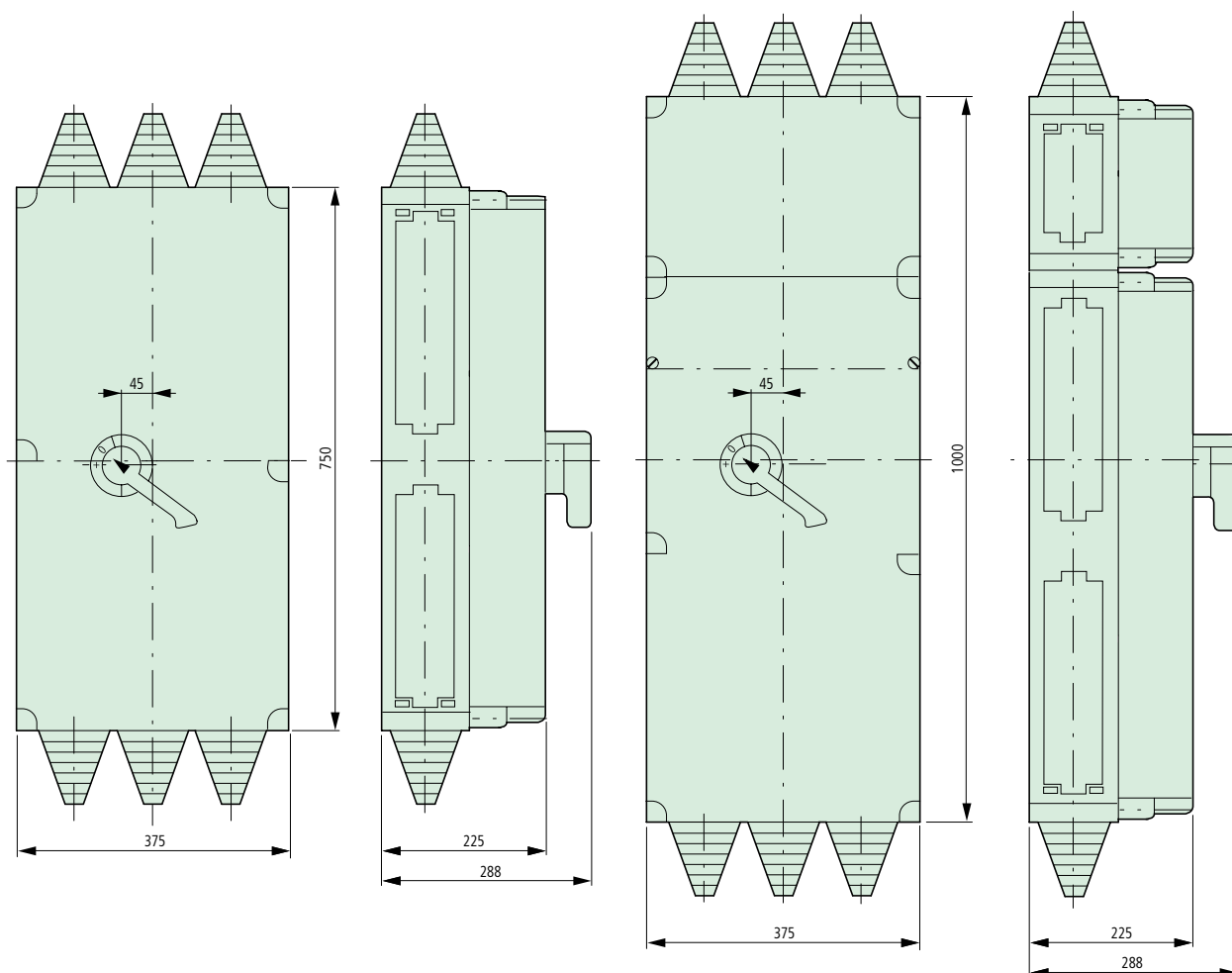
NZM10 Circuit-Breakers, NZM10, P10 Switch-Disconnectors

Dimensions

Insulated enclosures for

NZM10-400
P10-400

NZM10-630
P10-630

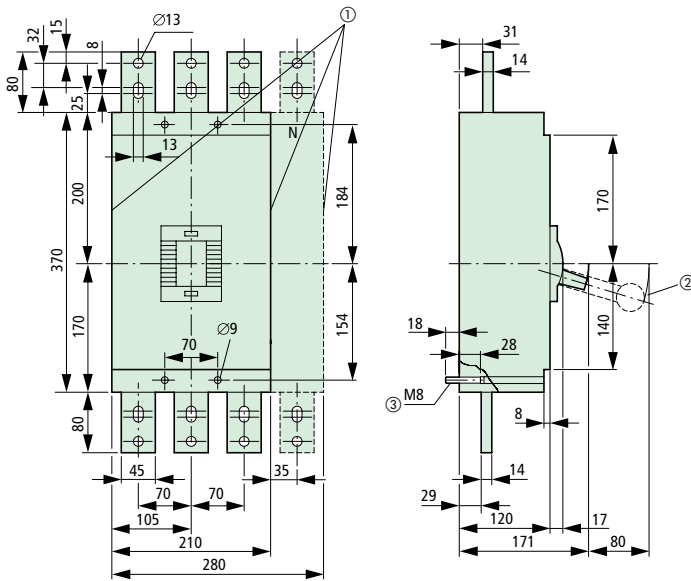


NZM14 Circuit-Breakers, Switch-Disconnectors

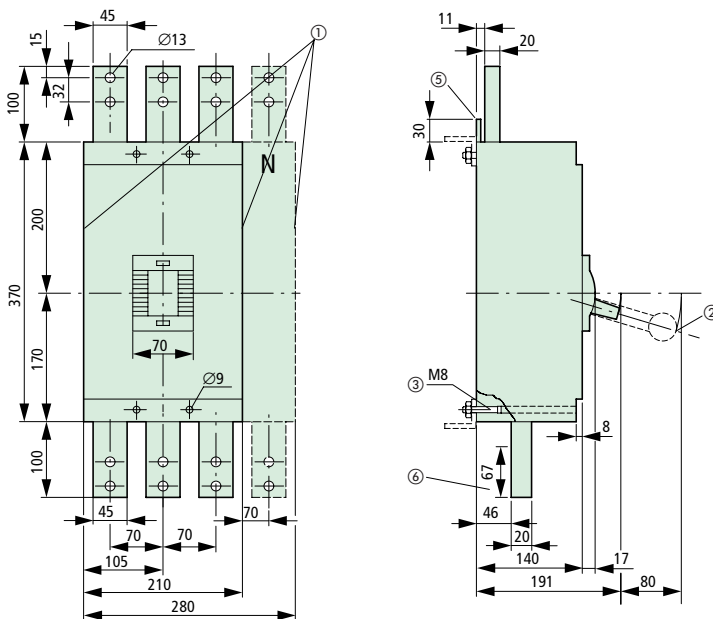
Dimensions

Circuit-breakers, switch-disconnectors

NZM14(4)-800 (1000, 1250)

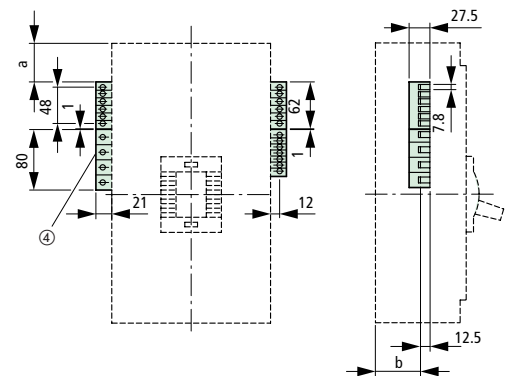


NZM14(4)-1600



Control circuit terminal block

(fitted as standard where auxiliary contacts or voltage releases are included)



	a	b
NZM14-800 (1000, 1250)	51	72
NZM14-1600	51	92

Notes

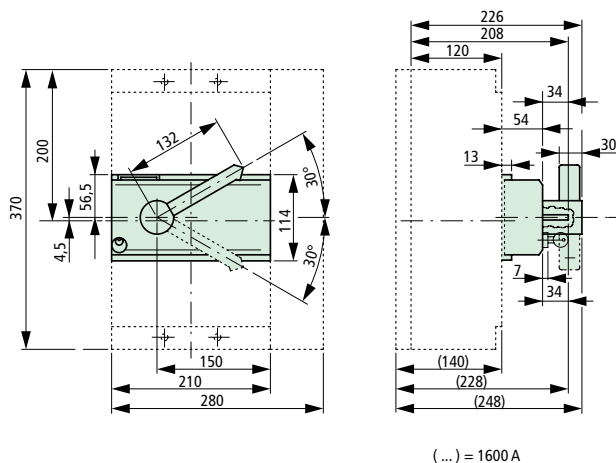
- ① Control circuit terminal blocks fitted as standard where internal auxiliary contacts or voltage releases are included
- ② Toggle lever extension (removable)
- ③ Fixing screw
- ④a External supply for LUE-NZM14 load monitoring, M-NZM14 trip indication and U-NZM14 undervoltage release
- ④b TV-NZM14 earth-fault release, NHI-NZM10 standard auxiliary contacts and NRHI-NZM14 trip-indicating auxiliary contacts
- ⑤ Insulator
- ⑥ Max. terminal overlap

NZM14 Circuit-Breakers, Switch-Disconnectors

Dimensions

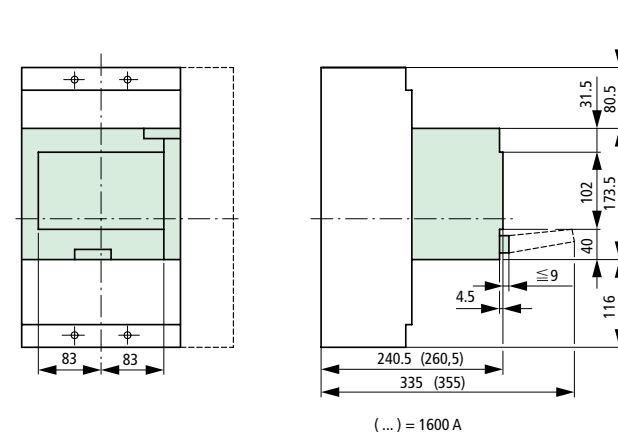
Rotary drive

D-NZM14

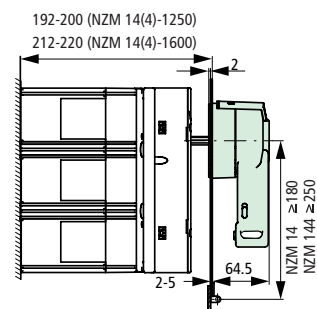
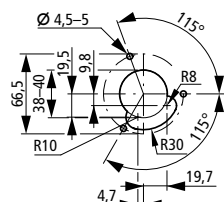
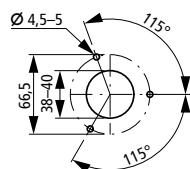
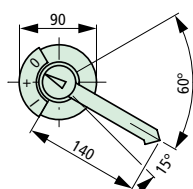


Remote operator

R-NZM14

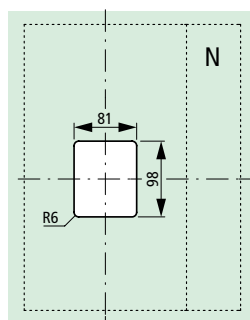


Door coupling rotary handle

H14
H14FDrilling diagram
H14Drilling diagram
H14F

Mounting aperture

Toggle lever on NZM14

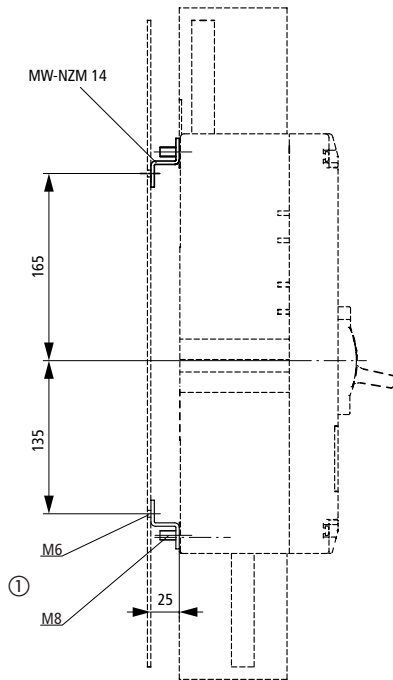


NZM14 Circuit-Breakers, Switch-Disconnectors

Dimensions

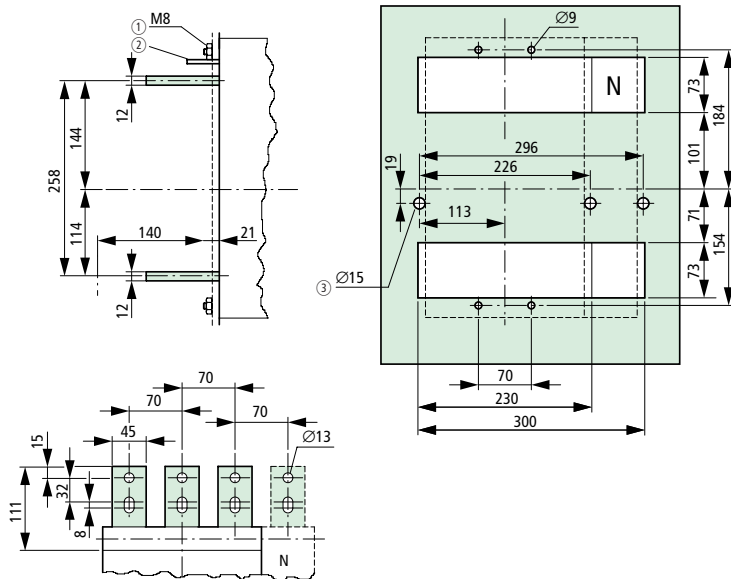
Mounting bracket

MW-NZM14

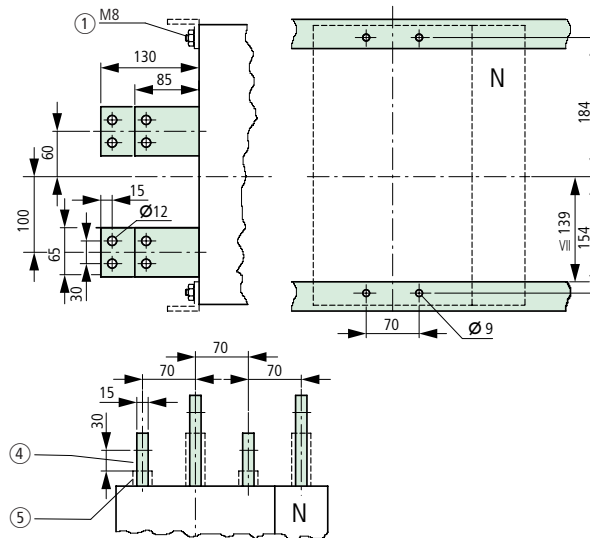


Rear connection

RG-NZM14(4)-1250
for NZM14(4)-800 (1000, 1250)



RG-NZM14(4)-1600
for NZM14(4)-1600



Notes

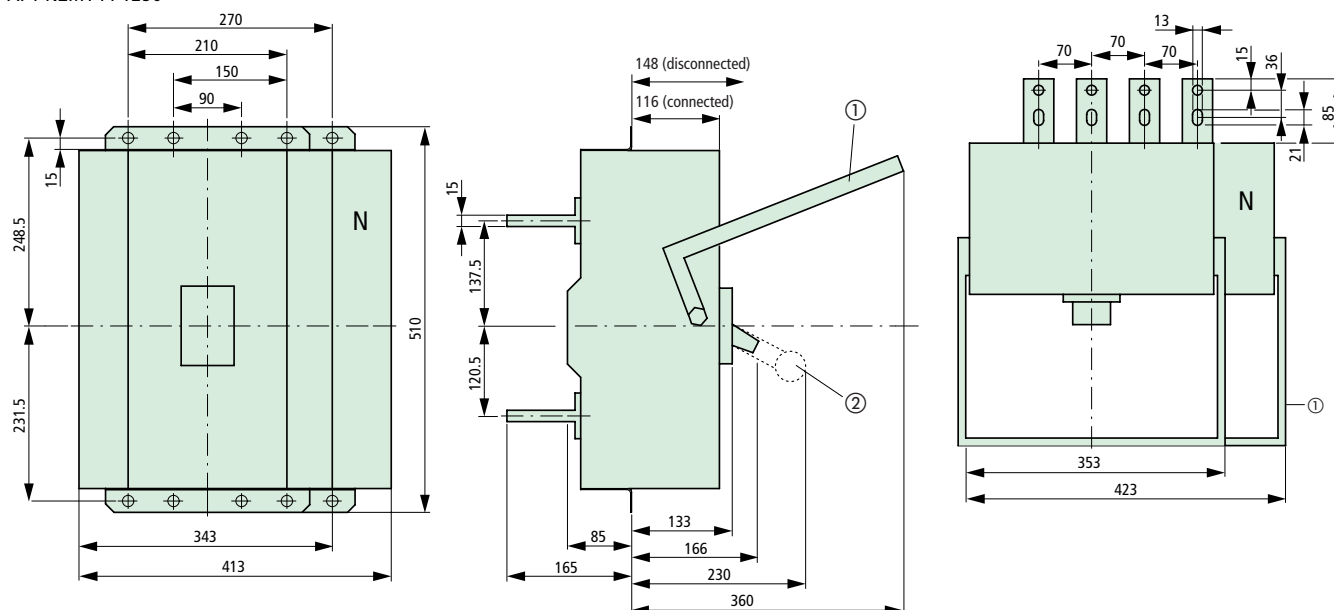
- ① Fixing screw
- ② Insulator
- ③ For control circuit cable (if required)
- ④ Max. terminal overlap
- ⑤ Insulating sleeve

NZM14 Circuit-Breakers, Switch-Disconnectors

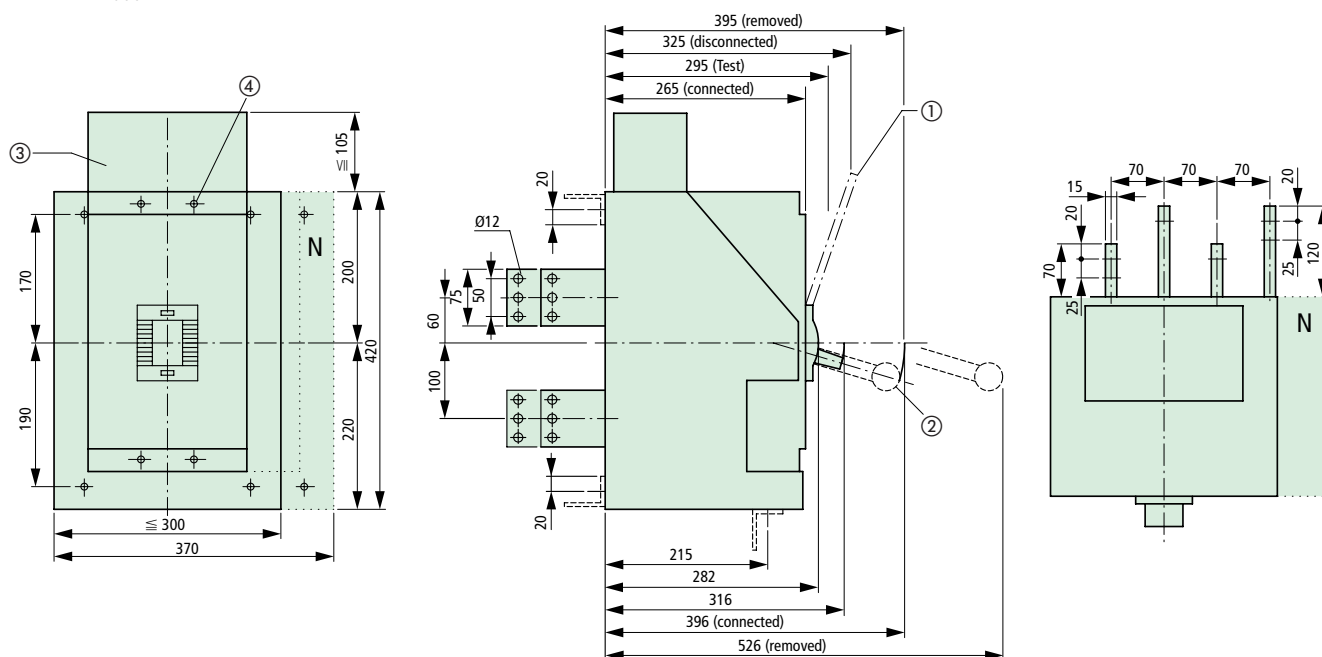
Dimensions

Withdrawable unit

AF3-NZM14-1250
AF4-NZM144-1250



AF3-NZM14-1600
AF4-NZM144-1600



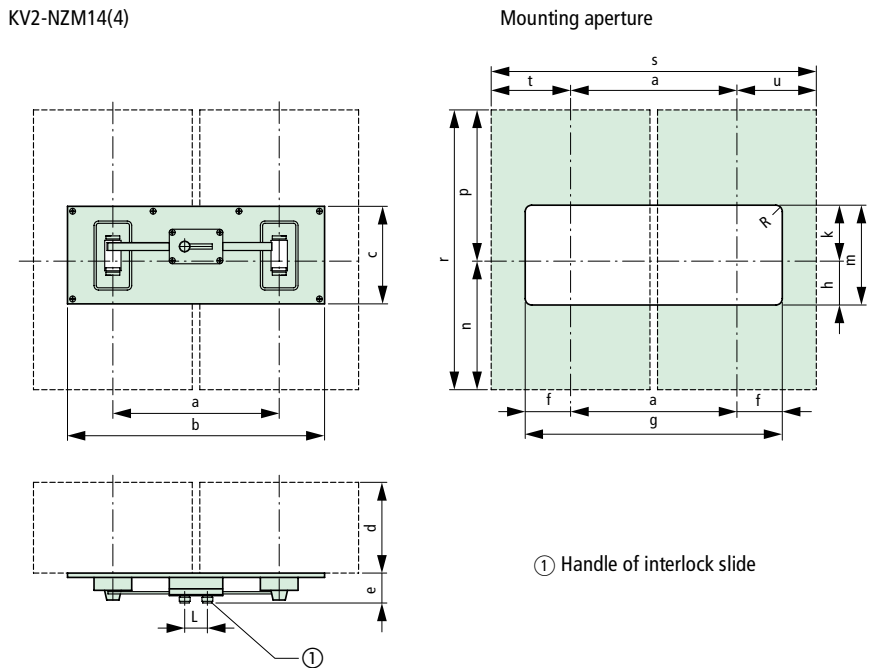
Notes

- ① Handle (removable)
- ② Toggle lever extension
- ③ Control circuit terminal block
- ④ Switch fixing screw

NZM14 Circuit-Breakers, Switch-Disconnectors
Dimensions

Mechanical interlock

KV2-NZM14(4)



	Pole	a	b	c	d	e	f	g	h	k	m	n	p	r	s	t	u	L	R
NZM14-800 (1000, 1250)	3	290	410	129	120	39.6	61.5	413	58	74	132	170	200	370	500	105	105	30	8.5
	4	350	470	129	120	39.6	61.5	473	58	74	132	170	200	370	630	105	175	30	8.5
NZM14-1600	3	290	410	129	140	39.6	61.5	413	58	74	132	170	200	370	500	105	105	30	8.5
	4	350	470	129	140	39.6	61.5	473	58	74	132	170	200	370	630	105	175	30	8.5