

LZM

xEnergy



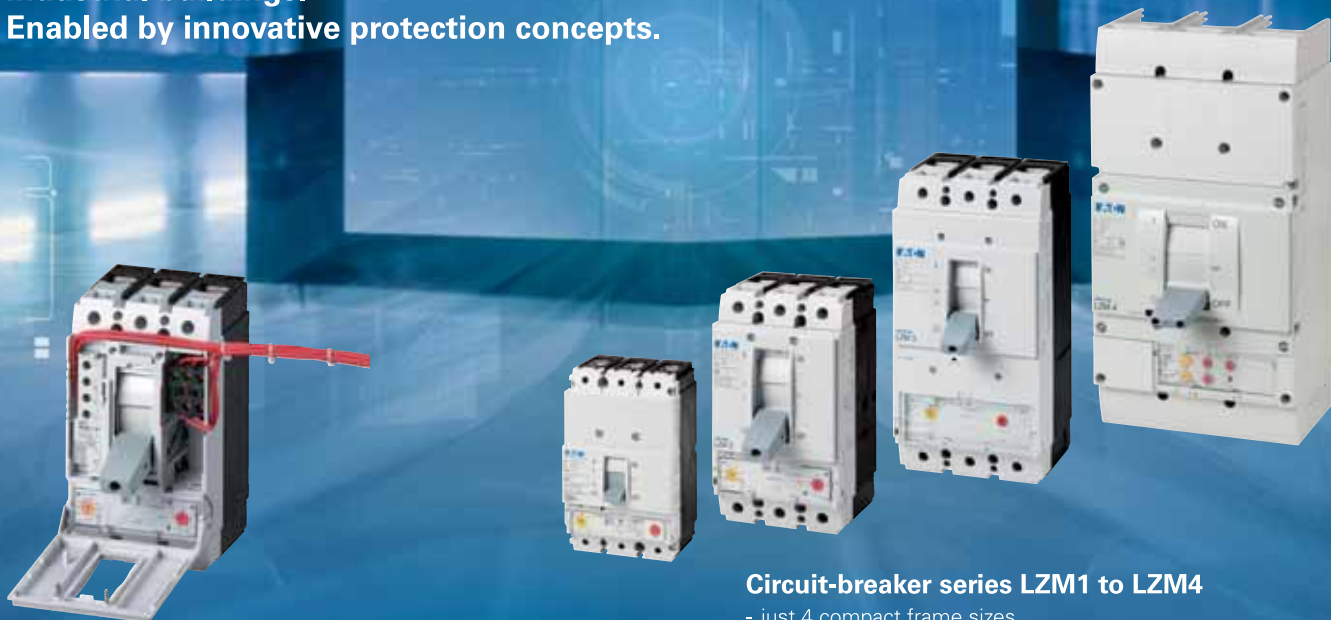
Product catalogue LZM-I
Circuit breaker
Switch disconnecter
Switching and protection up to 1000A

EATON

Powering Business Worldwide

Circuit breaker LZM series up to 1000A

Reliable, safe and simple products for energy distribution systems in high density residential, commercial and industrial buildings. Enabled by innovative protection concepts.



Standard/trip-indicating auxiliary contact from the Titan range

- reduced number of variants and stockholding requirement
- simple front installation at the same position
- simple clip-on feature saves mounting costs
- attractively priced identical parts from the control circuit device range

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Circuit-breaker series LZM1 to LZM4

- just 4 compact frame sizes
- available as 3 and 4-pole device up to 1000A
- equal dimension as NZM range
- flexible mounting using modular function groups
- suitable for 50°C according derating table
- switch suitable for world-wide use

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Remote operators

- common functional concept of all variants
- low closing delays 60 ms to 100 ms
- locking and sealing features provide security

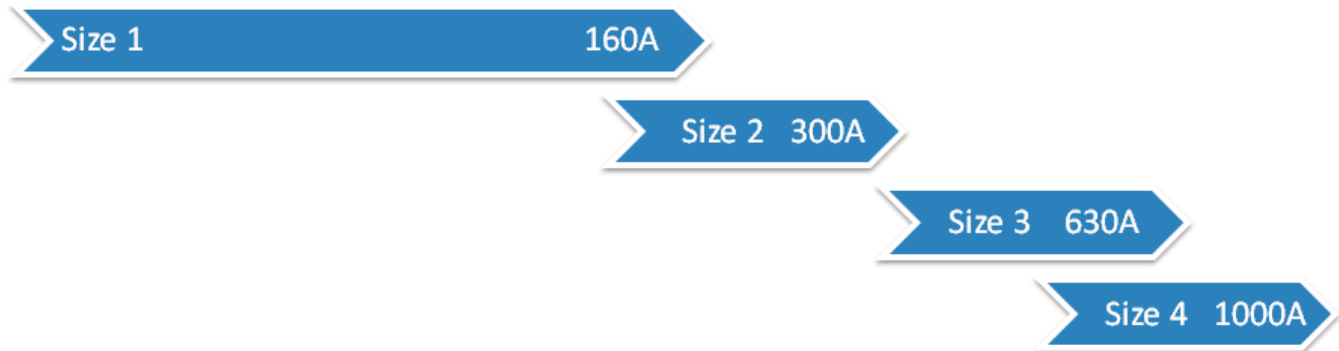
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Door coupling rotary handles

- identical drilling template for all variants
- innovative automatic centring
- axis support for long-term reliable operation

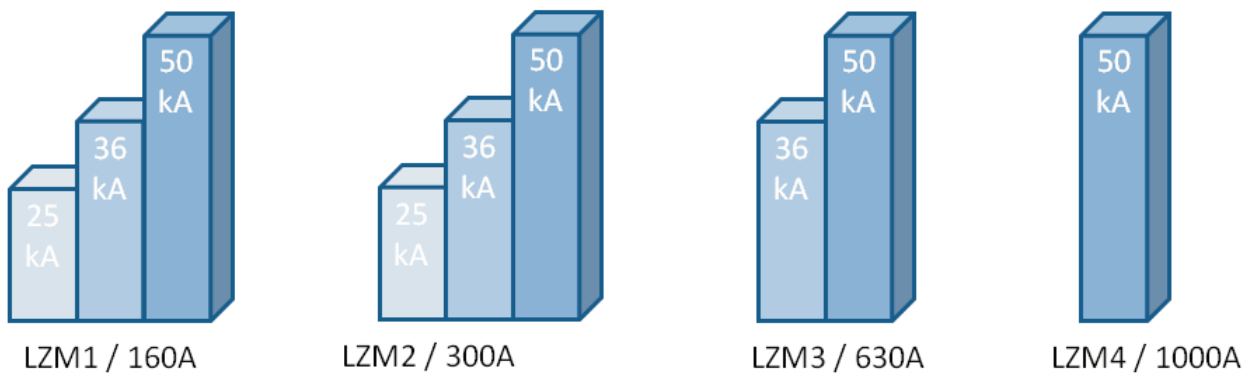
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Rated Current (A)



Only 4 frame sizes with nominal current up to 1000 A reduce time and effort to design and build up energy distribution boards.

Rated ultimate short-circuit breaking capacity (kA at 400/415V)



Continuous short-circuit breaking capacity from frame 1 up to frame 4 to ensure easy project planning for application oriented projects.

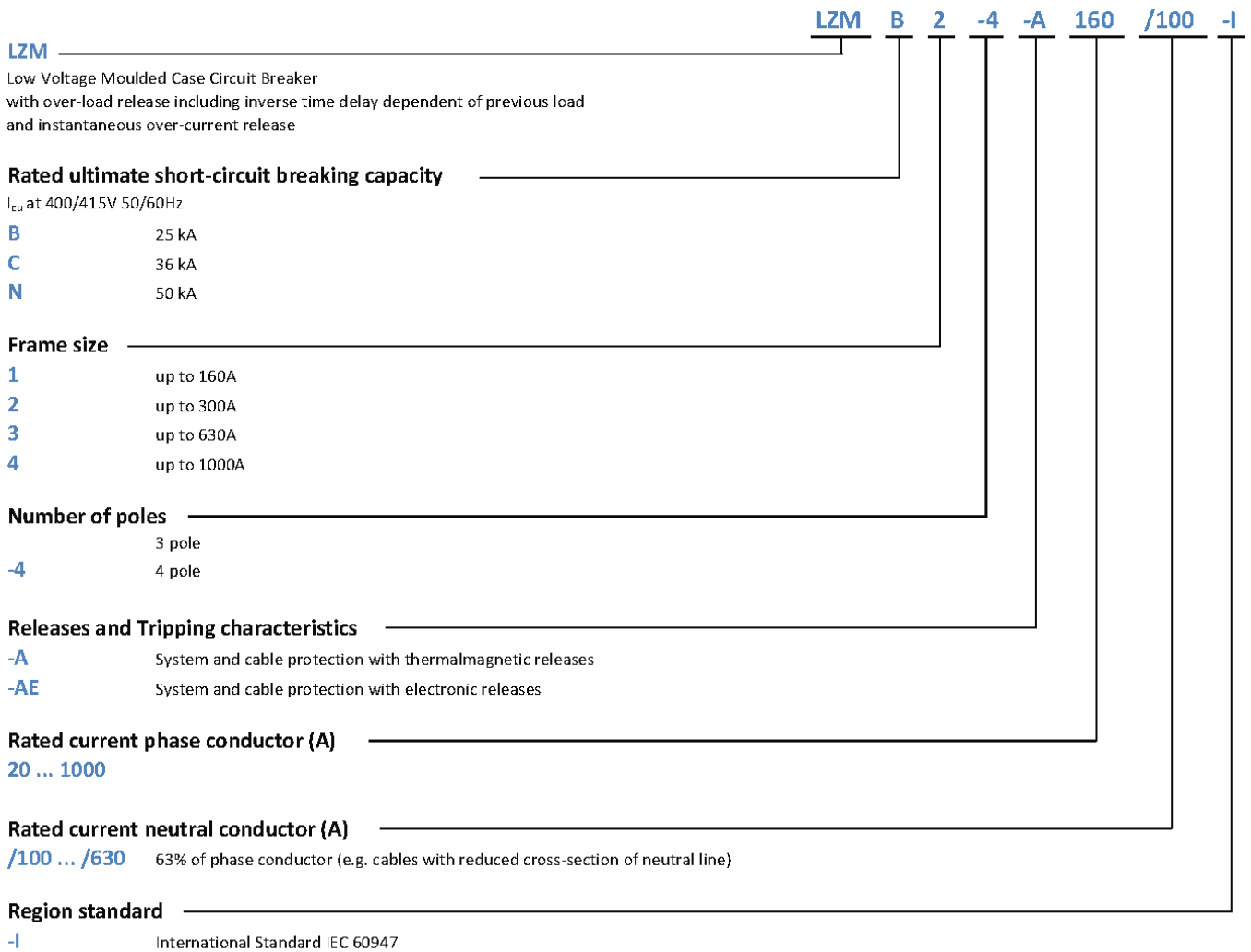
Complete offer to cover basic requirements and standard applications up to complex high end energy distribution boards.

Thermomagnetic and electronic trip unit

	Type code	Overload release	Short circuit release	
Thermo-magnetic	A	0.8 ... 1 x I _n	6 ... 10 x I _n	Standard application cable and system protection
Electronic	AE	0.5 ... 1 x I _n	2 ... 12 x I _n	Standard application cable and system protection

With each release type the LZM range provides adjustability for every nominal current to protect your application accordingly.

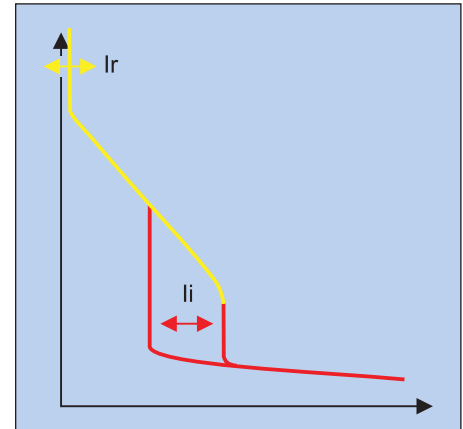
Type code for LZM-I MCCBs



The description of the type code is a logic sequence of short circuit level, frame size, number of poles, trip unit and nominal current.

Over-current releases

Thermomagnetic release A



1 Overload protection

$I_r = 0,8 - 1 \times I_n$

Neutral protection

The neutral pole is protected by the thermal device featuring an I_{rn} tripping threshold of 100% or 60% of the I_r threshold adjusted with respect to the phases.

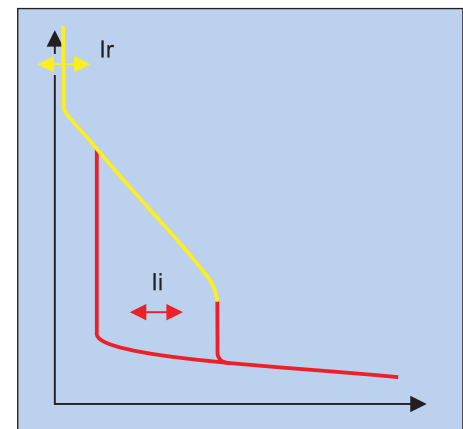
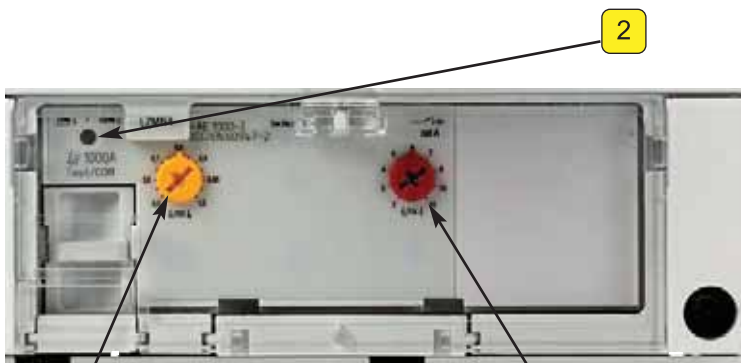
In this way, conductors, which may have a smaller section on the less charged neutral pole as in the phases, may be dimensioned effectively.

2 Short-circuit protection

Device with instantaneous tripping and adjustable I_i threshold

$I_i = 6 - 10 \times I_n$

Electronic release without delay AE



1 Overload protection

Device featuring microprocessor with inverse time tripping and adjustable threshold

$I_r = 0,5 - 1 \times I_n$

Neutral protection

The neutral pole is protected by the thermal device featuring an I_{rn} tripping threshold of 100% or 60% of the I_r threshold adjusted with respect to the phases.

The protection featuring advance threshold is intended for high I_n rated currents ($\geq 160A$): in these cases, the statutory provision allows the use of cables with a smaller section than in the phases.

2 Led for indication of overload

The LED starts to light when the charge value approaches the I_n value or exceeds it:

Charge	<70% I_r	$\geq 70\% I_r$	$\geq 100\% I_r$
LED	off	steady	on intermittent

3 Short-circuit protection

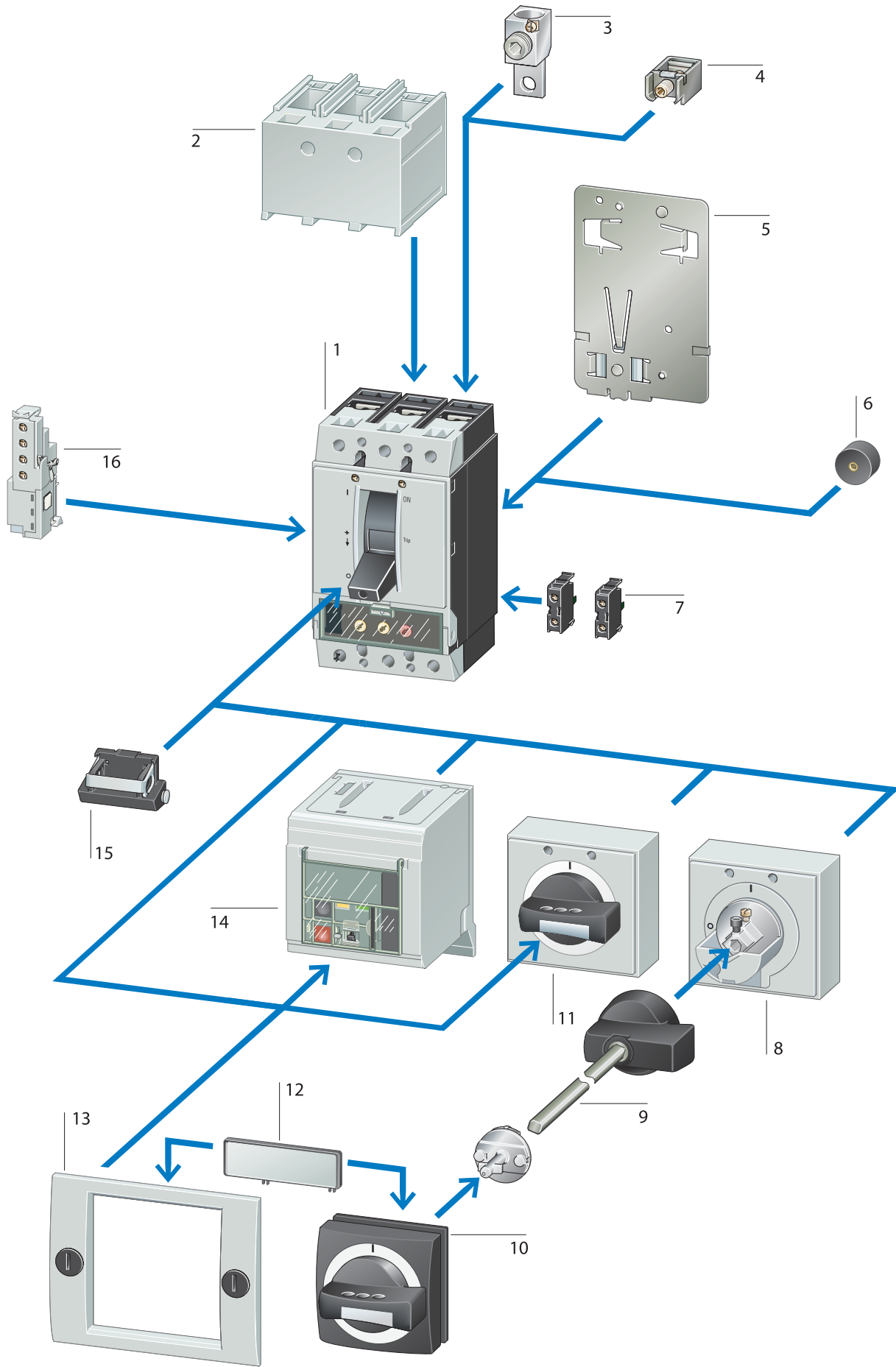
Device featuring instantaneous tripping and adjustable I_i threshold

$I_i = 2 - 8/12 \times I_n$

**Circuit-breakers, switch-disconnectors
from 15 to 1000 A**



	Page		Page		Page
System overview		Engineering		Technical data	
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Mechanical interlock	34			Size 3: accessories	74
Remote operators	35			Size 4: basic units	78
				Size 4: accessories	79



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Basic units

Circuit-breaker	1
Rated uninterrupted current up to 1000 A	
Switching capacity 25, 36, 50kA at 415V	
Adjustable releases for overload and short-circuit	
Protection of systems, cables, motors, generators	
3 and 4 pole versions, IEC/EN60947	
→ page 6	
Switch-disconnector	1
Rated uninterrupted current up to 1000 A	
Remotely tripped switch-disconnector with undervoltage or shunt release	
3 and 4 pole versions, IEC/EN60947	
→ page 12	

Add-on functions

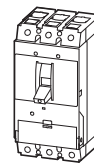
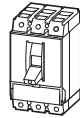
Standard auxiliary contact (HIN)	7
Switching with the main contacts. Used for indication and interlock functions.	
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Trip-indicating auxiliary contact (HIA)	7
General trip indication '+', when tripped by voltage release, overload release or short-circuit release	
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Voltage release	16
Undervoltage release	
Shunt release	
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Door coupling rotary handle	8+10
Lockable	
With door interlock	
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Extension shaft	9
Can be cut to required length.	
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Rotary handle	11
Lockable	
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Remote operator	14
For remote switching of circuit-breakers and switch-disconnectors	
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Toggle lever interlock device	15
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Mounting accessories

Tunnel terminals for Al and Cu cable	3
Standard with control circuit terminal	
LZM1 → page 14	
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Box terminals	4
Standard version of frame size 1 assembled within the circuit-breaker enclosure	
LZM1 → page 14	
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LZM3 → page 18	
Terminal cover	2
Protection against direct contact where cable lugs, busbars or tunnel terminals are used	
LZM1 → page 14	
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LZM3 → page 20	
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Clip plate	5
NZM1-XC35 for 35 mm top-hat rail	
NZM2-XC75 for 75 mm top-hat rail	
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Insulating surround	13
For use with toggle lever, rotary drive and remote operator protruding from the enclosure	
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External warning plate/designation label	12
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Spacer	6
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Circuit-breaker

With main switch characteristics to IEC/EN 60204
and isolating characteristics to IEC/EN60947



Rated uninterrupted current I_U = Rated current I_n
Adjustable overload release I_r
Adjustable short-circuit release I_f

**Thermomagnetic releases
System and cable protection**

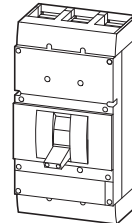
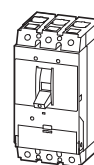
	I_U A	I_U A		I_r A	I_f A
Ambient temperature at 100% I_U min./max. -25/+50°C	20			0.8 - 1 x I_n	350
	25				
	32				
	40				8 - 10 x I_n
	50				6 - 10 x I_n
	63				
	80				
	100				
	125				
	160	160			LZM1: 8 x I_n
		200			6 - 10 x I_n
		250			
		300	320		
			400		
			500		

Basic switching capacity		LZMB1-A...	LZMB2-A...		
400/415 V	kA	25	25		
440V	kA	12.5	12.5		
Comfort switching capacity		LZMC1-A...	LZMC2-A...	LZMC3-A...	
400/415 V	kA	36	36	36	
440 V	kA	18	18	18	
Normal switching capacity		LZMN1-A...	LZMN2-A...	LZMN3-A...	
400/415 V	kA/cos φ	50	50	50	
440 V	kA	25	25	25	

Notes The stated switching capacity values are rated ultimate short-circuit breaking capacities (I_{CU})

Switch-disconnector

With main switch characteristics to IEC/EN 60204
and VDE 0113 isolating characteristics to IEC/EN 60947,
VDE 0660 without overload and short-circuit release



		63 – 160	160 – 250	400 – 630	630 – 1600
Rated uninterrupted current I_U = rated current I_n					
Can be triggered with U/A voltage release		LN1-...	LN2-...	LN3-...	LN4-...
Rated short-circuit making capacity I_{cm}	kA	2.8	5.5	25	53
Rated short-time withstand current $I_{cw}(1s)$	kA	2	3.5	12	25

6 Circuit-breaker, 3 pole

Ordering

LZM...1, LZM...2, LZM...3

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Rated current =
rated uninterrupted
current

$$I_n = I_u$$

A

Setting range

Overload releases

I_r

A



Short-circuit releases

I_i

A



Basic switching capacity
25 kA at 415 V 50/60 Hz

Part no.
Article no.

Price
see price
list

Comfort switching capacity
36 kA at 415 V 50/60 Hz

Part no.
Article no.

Price
see price
list

Protection of systems and cables

3 pole with thermo-magnetic release

Terminals standard, terminal screws as accessories

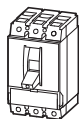


20	15...20	350
25	20...25	350
32	25...32	350
40	32...40	320...400
50	40...50	300...500
63	50...63	380...630
80	63...80	480...800
100	80...100	600...1000
125	100...125	750...1250
160	125...160	1280

LZMB1-A20-I 111848
LZMB1-A25-I 111849
LZMB1-A32-I 111850
LZMB1-A40-I 111851
LZMB1-A50-I 111852
LZMB1-A63-I 111853
LZMB1-A80-I 111854
LZMB1-A100-I 111855
LZMB1-A125-I 111856
LZMB1-A160-I 111857

LZMC1-A20-I 111888
LZMC1-A25-I 111889
LZMC1-A32-I 111890
LZMC1-A40-I 111891
LZMC1-A50-I 111892
LZMC1-A63-I 111893
LZMC1-A80-I 111894
LZMC1-A100-I 111895
LZMC1-A125-I 111896
LZMC1-A160-I 111897

Terminal screws standard, terminals as accessories



160	125...160	960...1600
200	160...200	1200...2000
250	200...250	1500...2500
300	240...300	1500...2500
320	250...320	1920...3200
400	320...400	2400...4000
500	400...500	3000...5000

LZMB2-A160-I 111922
LZMB2-A200-I 111923
LZMB2-A250-I 111924
LZMB2-A300-I 111925

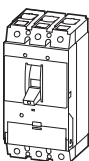
LZMC2-A160-I 111938
LZMC2-A200-I 111939
LZMC2-A250-I 111940
LZMC2-A300-I 111941
LZMC3-A320-I 111954
LZMC3-A400-I 111955
LZMC3-A500-I 111956

Notes

Notes for terminals → 15

3 pole with electronic release

Terminals screws standard, terminals as accessories



630	315...630	1260...5040
800	400...800	1600...9600
1000	500...1000	2000...12000

LZMC3-AE630-I 111957

Notes

Notes for terminals → 19

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

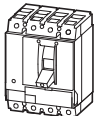
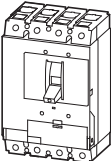
Normal switching capacity
50 kA at 415 V 50/60 Hz

Part no. Article no.	Price see price list	Std. pack	Notes
LZMN1-A20-I 174414		1 off	IEC/EN 60947-2 Adjustable overload releases I_f <ul style="list-style-type: none"> • 0.8 – 1 x I_n (ex-works 0.8 x I_n) Adjustable short-circuit releases I_i <ul style="list-style-type: none"> • 6 – 10 x I_n (ex-works 6 x I_n) – LZM...A40: 8 – 10 x I_n (ex-works 8 x I_n) Fixed short-circuit release I_f <ul style="list-style-type: none"> • 350 A at $I_n = 20 – 32$ A • 1280 A at $I_n = 160$ A (LZM1)
LZMN1-A25-I 174415			
LZMN1-A32-I 174416			
LZMN1-A40-I 174417			
LZMN1-A50-I 174418			
LZMN1-A63-I 174419			
LZMN1-A80-I 174420			
LZMN1-A100-I 174421			
LZMN1-A125-I 174422			
LZMN1-A160-I 174423			
LZMN2-A160-I 174442			
LZMN2-A200-I 174443			
LZMN2-A250-I 174444			
LZMN2-A300-I 174445			
LZMN3-A320-I 111966			
LZMN3-A400-I 111967			
LZMN3-A500-I 111968			
LZMN3-AE630-I 111969		1 off	IEC/EN 60947-2 Adjustable overload releases I_f <ul style="list-style-type: none"> • 0.5 – 1 x I_n (ex-works 0.8 x I_n) R.m.s. value measurement and “thermal memory” Adjustable short-circuit releases I_i <ul style="list-style-type: none"> • LZM...3-AE630-I: 2 – 8 x I_n (ex-works 6 x I_n) • LZM...4-AE...-I: 2 – 12 x I_n (ex-works 6 x I_n)
LZMN4-AE800-I 111978			
LZMN4-AE1000-I 111979			

Ordering

LZM...1, LZM...2, LZM...3

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Rated current = rated uninterrupted current	Setting range Overload releases	Neutral conductor	Short-circuit releases	Basic switching capacity 25 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list	Comfort switching capacity 36 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list
							
Protection of systems and cables							
4 pole							
Terminals standard, terminal screws as accessories							
	20	15...20	15...20	350	LZMB1-4-A20-I 111868	LZMC1-4-A20-I 111908	
	25	20...25	20...25	350	LZMB1-4-A25-I 111869	LZMC1-4-A25-I 111909	
	32	25...32	25...32	350	LZMB1-4-A32-I 111870	LZMC1-4-A32-I 111910	
	40	32...40	32...40	320...400	LZMB1-4-A40-I 111871	LZMC1-4-A40-I 111911	
	50	40...50	40...50	300...500	LZMB1-4-A50-I 111872	LZMC1-4-A50-I 111912	
	63	50...63	50...63	380...630	LZMB1-4-A63-I 111873	LZMC1-4-A63-I 111913	
	80	63...80	63...80	480...800	LZMB1-4-A80-I 111874	LZMC1-4-A80-I 111914	
	100	80...100	80...100	600...1000	LZMB1-4-A100-I 111875	LZMC1-4-A100-I 111915	
	125	100...125	100...125	750...1250	LZMB1-4-A125-I 111876	LZMC1-4-A125-I 111916	
	160	125...160	125...160	1280	LZMB1-4-A160-I 111877	LZMC1-4-A160-I 111917	
Terminals standard, terminal screws as accessories							
	160	125...160	125...160	960...1600	LZMB2-4-A160-I 116431	LZMC2-4-A160-I 116435	
		125...160	80...100	960...1600	LZMB2-4-A160/100-I 111930	LZMC2-4-A160/100-I 111948	
	200	160...200	160...200	1200...2000	LZMB2-4-A200-I 116432	LZMC2-4-A200-I 116436	
		160...200	100...125	1200...2000	LZMB2-4-A200/125-I 111931	LZMC2-4-A200/125-I 111949	
	250	200...250	200...250	1500...2500	LZMB2-4-A250-I 116433	LZMC2-4-A250-I 116437	
		200...250	125...160	1500...2500	LZMB2-4-A250/160-I 111932	LZMC2-4-A250/160-I 111950	
	300	240...300	250...320	1500...2500	LZMB2-4-A300-I 116434	LZMC2-4-A300-I 116438	
		240...300	160...200	1500...2500	LZMB2-4-A300/200-I 111933	LZMC2-4-A300/200-I 111951	
	320	250...320	320...400	1920...3200		LZMC3-4-A320-I 116439	
		250...320	200...250	1920...3200		LZMC3-4-A320/200-I 111960	
	400	320...400	320...400	2400...4000		LZMC3-4-A400-I 116470	
		320...400	250...250	2400...4000		LZMC3-4-A400/250-I 111961	
	500	400...500	400...500	3000...5000		LZMC3-4-A500-I 116471	
		400...500	250...320	3000...5000		LZMC3-4-A500/320-I 111962	
Notes	Notes for terminals → 15+19						

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
Normal switching capacity
50 kA at 415 V 50/60 Hz

Part no.	Price Article no. list	Std. pack see price	Notes
LZMN1-4-A20-I 174424		1 off	IEC/EN 60947-2 Adjustable overload releases I_r • $0.8 - 1 \times I_n$ (ex-works $0.8 \times I_n$) Setting on neutral pole implemented via the main pole setting I_r of the main pole. Adjustable short-circuit releases I_i • $6 - 10 \times I_r$ (ex-works $6 \times I_n$) – LZM...A40-I: $8 - 10 \times I_n$ (ex-works $8 \times I_n$) Fixed short-circuit release I_i • 350 A at $I_n = 20 - 32$ A • 1280 A at $I_n = 160$ A ($8 \times I_n$) LZM..1-4-A... • With 100 % overload and short-circuit protection in 4 th pole LZM..2-4-A... • With 100 % or 60 % overload and short-circuit protection in 4 th pole
LZMN1-4-A25-I 174425			
LZMN1-4-A32-I 174426			
LZMN1-4-A40-I 174427			
LZMN1-4-A50-I 174428			
LZMN1-4-A63-I 174429			
LZMN1-4-A80-I 174430			
LZMN1-4-A100-I 174431			
LZMN1-4-A125-I 174432			
LZMN1-4-A160-I 174433			
LZMN2-4-A160-I 174435		1 off	
LZMN2-4-A160/100-I 174434			
LZMN2-4-A200-I 174437			
LZMN2-4-A200/125-I 174436			
LZMN2-4-A250-I 174439			
LZMN2-4-A250/160-I 174438			
LZMN2-4-A300-I 174441			
LZMN2-4-A300/200-I 174440			
LZMN3-4-A320-I 116473		1 off	
LZMN3-4-A320/200-I 111974			
LZMN3-4-A400-I 116474			
LZMN3-4-A400/250-I 111975			
LZMN3-4-A500-I 116475			
LZMN3-4-A500/320-I 111976			

Ordering

LZM...2, LZM...3, LZM...4

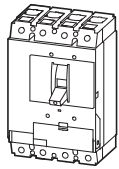
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Rated current = rated uninterrupted current	Setting range Overload releases	Neutral conductor	Short-circuit releases Non-delayed	Comfort switching capacity 36 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list
$I_n = I_u$ A	I_r A 	I_r A 	I_r A 		

Protection of systems and cables

4 pole

Terminals screws standard, terminals as accessories



630

315...630

315...630

1260...5040

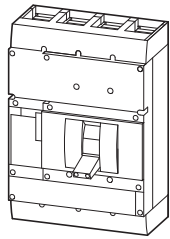
LZMC3-4-AE630-I
116472

315...630

200...400

1260...5040

LZMC3-4-AE630/400-I
111963



800

400...800

400...800

1600...9600

400...800

250...500

1600...9600

1000

500...1000

500...1000

2000...12000

500...1000

315...630

2000...12000

Notes

Notes for terminals → 19+22

xEnergy

Normal switching capacity
50 kA at 415 V 50/60 Hz

Part no.
 Article no.

Price
 see price list

Std. pack

Notes

LZMN3-4-AE630-I
 116476

LZMN3-4-AE630/400-I
 111977

LZMN4-4-AE800-I
 116477

LZMN4-4-AE800/500-I
 111986

LZMN4-4-AE1000-I
 116478

LZMN4-4-AE1000/630-I
 111987

1 off

IEC/EN 60947-2

Adjustable overload releases I_r

- $0.5 - 1 \times I_n$ (ex-works $0.8 \times I_n$)

Setting on neutral pole implemented via the main pole setting I_r of the main pole.

R.m.s. value measurement and "thermal memory"

Adjustable short-circuit releases I_i

- LZM...3-4-AE630-I: $2 - 8 \times I_n$ (ex-works $6 \times I_n$)
- LZM...4-4-AE...-I: $2 - 12 \times I_n$ (ex-works $6 \times I_n$)

i^2t constant function (ex-works OFF)

- LZM3, LZM4 switched (ex-works OFF)

LZM...3-AE630/400, LZM...-4-AE.../...-I

- With 60 % or 100 % overload and short-circuit protection in 4th pole

Ordering

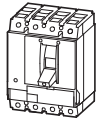
LN1..., LN2..., LN3..., LN4...

	Rated current = rated uninterrupted current	Short-circuit protection max. fuse gL-characteristic	3pole Part no. Article no.	Price see price list	4pole Part no. Article no.	Price see price list	Std. pack
	$I_n = I_u$ A	A					

Switch-disconnectors

Can be tripped remotely with shunt- or undervoltage release

Terminals standard, terminal screws as accessories



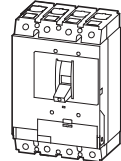
63	125
100	125
125	125
160	160

LN1-63-I 111994	
LN1-100-I 111995	
LN1-125-I 111996	
LN1-160-I 111997	

LN1-4-63-I 111998	
LN1-4-100-I 111999	
LN1-4-125-I 112000	
LN1-4-160-I 112001	

1 off

Terminals screws standard, terminals as accessories

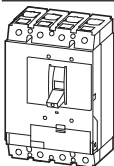
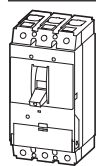


160	250
200	250
250	250

LN2-160-I 112002	
LN2-200-I 112003	
LN2-250-I 112004	

LN2-4-160-I 112005	
LN2-4-200-I 112006	
LN2-4-250-I 112007	

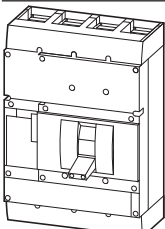
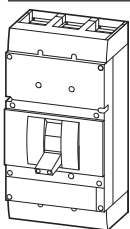
1 off



400	630
630	630

LN3-400-I 112008	
LN3-630-I 112009	

LN3-4-400-I 112010	
LN3-4-630-I 112011	



800	1600
1000	1600

LN4-800-I 112012	
LN4-1000-I 112013	

LN4-4-800-I 112016	
LN4-4-1000-I 112017	

Notes Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113
 Isolating characteristics to IEC/EN 60947-3 and VDE 0660
 Protection against accidental contact according to IEC 100
 Notes for terminals → 16

xEnergy

Max. cable connection
area

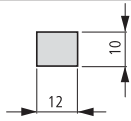
For use with

Terminal capacities
Type of conductormm²

AWG/kcmil

Box terminal

Standard equipment

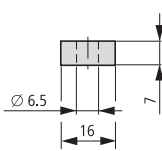
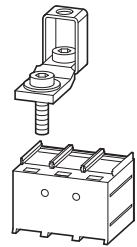
LZM1(-4)
LN1(-4)

Three- and four-pole

Cu cable

1 x 10 – 70¹⁾
2 x 6 – 251 x 8 – 2/0
2 x 9 – 4

Screw connection

LZM1(-4)
LN1(-4)

Three- and four-pole

Copper cable lugs

1 x 10 – 70

1 x 8 – 2/0

Aluminium cable lug

2 x 6 – 25

2 x 9 – 4

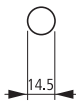
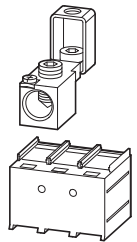
1 x 10 – 35

1 x 8 – 2

2 x 10 – 35

2 x 8 – 2

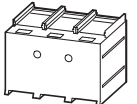
Tunnel terminal

LZM1(-4)
LN1(-4)

Three- and four-pole

Copper cable
Al cable1 x 16 – 95
2 x 6 – 251 x 6 – 3/0
–

Cover



–

LZM1(-4)
LN1(-4)

3 pole

–


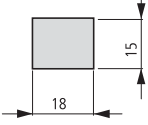
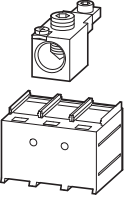
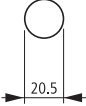
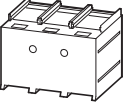

4 pole

Notes

¹⁾ Up to 95 mm² can be connected depending on the cable manufacturer.

xEnergy

Terminal capacities		Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Cu strip (number of segments x width x segment thickness)	Copper busbar width x thickness				
mm	mm				
2 x 9 x 0.8		NZM1-XKC 260015		1 off	Standard connection with all switches LZM1 and LN1. Conversion kit for circuit-breaker with screw connection. Type contains parts for a 3 or 4-pole switch side. Fitted within the switch housing
9 x 9 x 0.8		NZM1-4-XKC 267075		1 off	
	min. 12 x 5 max. 16 x 5	NZM1-XKS 260019		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Fitted outside the switch housing. Mounting of the cover NZM1(-4)-XKSA obligatory (supplied).
	min. 12 x 5 max. 16 x 5	NZM1-4-XKS 266725		1 off	
		NZM1-XKA 266730		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. A standard with control circuit terminal for 1 x 0.75 – 2.5 mm ² (18 – 14 AWG) or 2 x 0.75 – 1.5 mm ² (18 – 14 AWG) copper conductors. Fitted outside the switch housing. Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules. Mounting of the cover NZM1(-4)-XKSA obligatory (supplied).
		NZM1-4-XKA 266731		1 off	
		NZM1-XKSA 260021		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Protection against direct contact where cable lugs, busbars or tunnel terminals are used. Contained in kit with tunnel terminals or screw connection terminals. Degree of protection IP1X on the connection side when using insulated conductor material.
		NZM1-4-XKSA 266741		1 off	

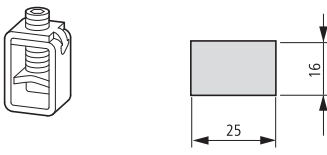
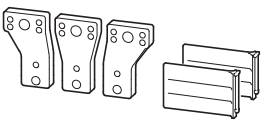
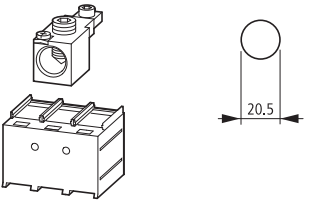
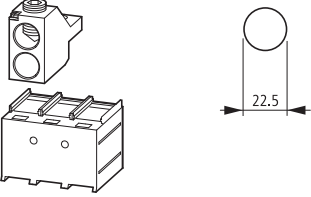
	Max. cable connection area	For use with	Terminal capacities Type of conductor	Terminal capacities ¹⁾		Terminal capacities Cu strip (number of segments x width x segment thickness)	
				mm ²	AWG/kcmil		mm
Box terminal							
		LZM2(-4) LN2(-4)	3pole	Copper conductors Cu cable	1 x 4 – 185 2 x 4 – 70	1 x 11 – 350 2 x 12 – 2/0	≥ 2 x 9 x 0.8
			4pole				
Tunnel terminal							
		LZM2(-4) LN2(-4)	3pole	Copper cable all cable	1 x 16 ... 185 ¹⁾ 1 x 16 ... 185 ¹⁾	1 x 6 – 350 –	
			4pole				
Cover							
	–	LZM2	3 pole				
	–	LZM2(-4) LN2-4	4 pole				
Copper cable lug							
When using cable lugs without NZM3(-4)-XKSA cover, they must be insulated.							
	95 mm ²	LZM2(-4) LN2(-4)	3 and 4 pole				
	120 mm ²						
	150 mm ²						
	185 mm ²						

Notes

¹⁾ Up to 240 mm² can be connected depending on the cable manufacturer.

xEnergy

Copper busbar width x thickness	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
mm				
	NZM2-160-XKC 262240		1 off	Type suffix and type contain parts for a circuit-breaker side at top or bottom for 3 or 4 pole circuit-breakers. Conversion kit for circuit-breaker with screw connection. Fitted within the switch housing. O = for fitting at the top U = for fitting at the bottom $U_e \geq 525$ V AC: • Use cover NZM2(4)-XKSA. Use ferrules with flexible and highly flexible conductors. Max. cross section shown can only be connected when flexible and without ferrules.
	NZM2-250-XKC 262244			
	NZM2-4-160-XKC 266755			
	NZM2-4-250-XKC 266756			
	NZM2-XKA 271457		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. A standard with control circuit terminal for 1 x 0.75 – 2.5 mm ² (18 – 14 AWG) or 2 x 0.75 – 1.5 mm ² (18 – 16 AWG) copper conductors. Fitted outside the switch housing. Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules. Mounting of the cover NZM2(-4)-XKSA obligatory (supplied).
	NZM2-4-XKA 271458		1 off	
	NZM2-XKSA 260038		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Protection against direct contact where cable lugs, busbars or tunnel terminals are used. Degree of protection IP1X on the connection side when using insulated conductor material.
	NZM2-4-XKSA 266770		1 off	
	KS95-NZM7 059775		3 off	Type contains a cable lug for 3-pole or 4-pole switches. Special cable lug, narrow style.
	KS120-NZM7 059776			
	KS150-NZM7 059777			
	NZM2-XKS185 260032			

	Max. cable connection area	Rated current ¹⁾ I_n A	For use with	Terminal capacities		
				Type of conductor	Terminal capacities mm ²	AWG/kcmil
Box terminal						
	max. 500	630	LZM3(-4) LN3(-4)	3pole	Copper conductors Cu cable 1 x 35 – 240 2 x 16 – 120	1 x 2 – 350
				4pole		
Connection width extension						
	630		LZM3(-4) LN3(-4)	3pole 4pole	Copper cable lugs 2 x 300	2 x 500 1 x 600
Tunnel terminal						
	max. 350		LZM3(-4) LN3(-4)	3pole	Copper conductors Cu cable conductors Al cable 1 x 16 – 185 ²⁾	1 x 6 – 350
				4pole		
	max. 630			3pole	1 x 50 – 240 2 x 50 – 240	1 x 0 – 500 2 x 0 – 500
				4pole		

Notes

¹⁾ The following applies for the rated current: The values have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation.

The engineering standards which apply in each case must be observed.

²⁾ Up to 240mm² can be connected depending on the cable manufacturer.

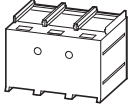
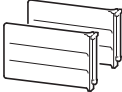

xEnergy

Terminal capacities		Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Cu strip (number of segments x width x segment thickness)	Copper busbar width x thickness				
mm	mm				
min. 6 x 16 x 0.8 max. 20 x 24 x 0.5 or max. 11 x 21 x 1		NZM3-XKC 260042		1 off	Type suffix and type contain parts for a circuit-breaker side at top or bottom for 3 or 4-pole circuit-breakers. Conversion kit for circuit-breaker with screw connection. Fitted within the switch housing O = for fitting at the top U = for fitting at the bottom $U_e \geq 525$ V AC: • Use NZM3(-4)-XKSA cover. Use with flexible and highly flexible conductors ferrules, note the max. terminal capacity when using ferrules.
		NZM3-4-XKC 266783			
(2 x) 10 x 50 x 1.0	(2 x) 10 x 50	NZM3-XKV70 100514		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers. Central drill holes, e.g. for up to 2 cable lugs per phase. Can be fitted to circuit-breaker with screw termination. Phase isolator supplied. Distance between pole centres with NZM3(-4)-XKV70: 70 mm. Drill hole available for control cable.
		NZM3-4-XKV70 100515		1 off	
		NZM3-XKA1 271459		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. A standard with control circuit terminal for 1 x 0.75 – 2.5 mm ² (18 – 14 AWG) or 2 x 0.75 – 1.5 mm ² (18 – 16 AWG) copper conductors. Fitted outside the switch housing. Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules. Mounting of the cover NZM3(-4)-XKSA obligatory (supplied). Please note a maximum diameter of 20.5 mm resp. 22.5 mm.
		NZM3-4-XKA1 271460		1 off	
		NZM3-XKA2 271461		1 off	
		NZM3-4-XKA2 271462		1 off	

Ordering

LZM3

xEnergy

	Max. cable connection area	For use with	Part no. Article no. when ordered separately	Price see price list
Cover				
	—	LZM3(-4) LN3(-4)	3 pole	NZM3-XKSA 260045
	—		4 pole	NZM3-4-XKSA 266801
Phase isolator				
	—	LZM3(-4) LN3(-4)	3 pole	NZM3-XKP 100512
	—		4 pole	NZM3-4-XKP 100513
Copper cable lug				
When using cable lugs without NZM3(-4)-XKSA cover, they must be insulated.				
	185 mm ²	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	3 and 4 pole	NZM3-XKS185 260040
	240 mm ²			NZM3-XKS240 260041
	300 mm ²			NZM3-XKS300 153186

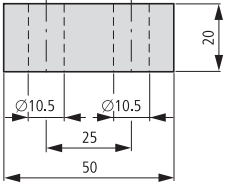


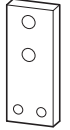
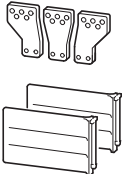
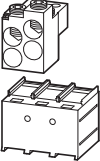
xEnergy

Std. pack **Notes**

1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Insulation/protection against direct contact where cable lugs, busbars or tunnel terminals are used.
1 off	Included in set with tunnel terminals. Degree of protection IP1X on the connection side when using insulated conductor material.

1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers. Included with the connection width extension.
1 off	Cannot be combined with the NZM3(-4)-XKA tunnel terminal, NZM3(-4)-XKR connection on rear. Insulation protection with connection of cable lugs, busbars or braid.

1 off	Type contains a cable lug for 3-pole or 4-pole switches. Special cable lug, narrow style
-------	---------------------------------------------------------------------------------------------

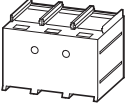
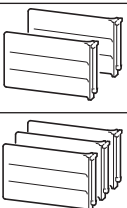

	Max. cable connection area	Rated current ¹⁾	For use with	Terminal capacities			
				Type of conductor	Terminal capacities mm ²	AWG/kcmil	
Screw connection							
Standard equipment							
	2-hole with stud bolts and nuts.	max. 1600	LZM4(-4) LN4(-4)	Three- and four-pole	Cu cable lugs	1 x 120 – 185 4 x 50 – 185	1 x 250 – 350 4 x 0 – 350
	Module plate						
	Single hole	max. 1250	LZM4 LN4	3 pole	Copper cable lugs	1 x 120 – 300 2 x 95 – 300	1 x 250 – 600 2 x 000 – 600
			Double hole	LZM4-4 LN4-4			
		Double hole	max. 1250	LZM4 LN4	3 pole	Copper cable lugs	2 x 95 – 300
				LZM4-4 LN4-4	4 pole		
		max. 1600	LZM4 LN4	3 pole	Copper cable lugs	2 x 95 – 300	2 x 000 – 500
			LZM4-4 LN4-4	4 pole			
Connection width extension							
		max. 1600	LZM4 LN4	3 pole	Cu cable lugs	4 x 300 6 x 95 – 240	4 x 600 6 x 000 ... 500
				LZM4-4 LN4-4			
Tunnel terminal							
		max. 1400	LZM4 LN4	3 pole	Copper conductors	1 x 50 – 240 4 x 50 – 240	1 x 0 – 500 4 x 0 – 500
				LZM4-4 LN4-4			

Notes

¹⁾ The following applies for the rated current: The values have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation.

xEnergy

Terminal capacities		Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Cu strip (number of segments x width x segment thickness)	Copper busbar width x thickness				
mm	mm				
(2 x) 10 x 50 x 1.0	(2 x) 50 x 10			off	Double hole fitting for M10 stud bolts with 25 mm clearance. Use special cable lug narrow version.
(2 x) 10 x 40 x 1.0 (2 x) 10 x 50 x 1.0	(2 x) 40 x 10 (2 x) 50 x 10	NZM4-XKM1 266814		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.
		NZM4-4-XKM1 266815		1 off	For M10 screws. Can be enlarged for M12 screws. Use special cable lug narrow version.
		NZM4-XKM2 266820		1 off	Can be fitted to circuit-breaker with screw termination. Insulation through NZM4(-4)-XKSA cover necessary.
		NZM4-4-XKM2 266821		1 off	
		NZM4-XKM2S-1250 284471		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.
		NZM4-4-XKM2S-1250 284472		1 off	Insulation through cover NZM4(-4)-XKSA necessary.
		NZM4-XKM2S-1600 284473		1 off	
		NZM4-4-XKM2S-1600 284474		1 off	
min. 10 x 50 x 1.0	max. (2 x) 80 x 10	NZM4-XKV95 281591		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.F
		NZM4-XKV110 281593		1 off	ive way holes, e.g. for up to 9 cable lugs per phase. Can be fitted to circuit-breaker with screw termination.
		NZM4-4-XKV95 281592		1 off	Phase isolator supplied.Distance between pole centres with NZM4(-4)-XKV95: 95 mm.
		NZM4-4-XKV120 281594		1 off	Installation conditions for current transformer up to 130 mm width with 80 mm busbar width. Distance between pole centres with NZM4-XKV110: 107.5 mm. Installation conditions for current transformer up to 135 mm width with 80 mm busbar width. Distance between pole centres with NZM4-4-XKV120: 122 mm. Installation conditions for current transformer up to 164 mm width with 80 mm busbar width. 4 mm drilled holes for control circuit terminal available.
		NZM4-XKA 266836		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers.
		NZM4-4-XKA 266837		1 off	A standard with control circuit terminal for 1 x 0.75 ... 2.5 mm ² (18 ... 14 AWG) or 2 x 0.75 ... 1.5 mm ² (18 ... 16 AWG) copper conductors. Can be fitted to circuit-breaker with screw termination. Use ferrules with flexible and highly flexible conductors. Max. cross section shown can only be connected when flexible and without ferrules. Use of the NZM4(-4)-XKSA cover obligatory(supplied).

	Max. cable connection area	For use with	Terminal capacities		
			Type of conductor	Terminal capacities mm ²	AWG/kcmil
Cover					
	-	LZM4 LN4	3 pole		
	-	LZM4-4 LN4-4)	4 pole		
Phase isolators					
	-	LZM4 LN4	3 pole		
	-	LZM4-4 LN4-4)	4 pole		
Cable lug					
	185 mm ²	LZM3(-4) LZM4(-4) LN3(-4) LN4(-4)	3 and 4 pole		
	240 mm ²				
	300 mm ²				


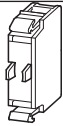



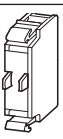





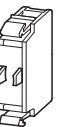


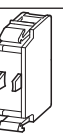



xEnergy

Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
NZM4-XKSA 266846 NZM4-4-XKSA 266847		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers. Protection against direct contact where cable lugs, busbars, flat cable terminals or tunnel terminals are used. With module plates, flat braid terminals and tunnel terminals included in the kit. When using insulated conductor material to degree of protection: IP1X.
NZM4-XKP 281595 NZM4-4-XKP 281596		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Included with the connection width extension. Cannot be combined with the tunnel terminal NZM4(-4)-XKA, connection NZM4-XKR on rear. Insulation protection where cable lugs, busbars, module plates or flat cable terminals are used.
NZM3-XKS185 260040 NZM3-XKS240 260041 NZM3-XKS300 153186		3 off	Type contains a cable lug for 3-pole or 4-pole switches. Special cable lug, narrow style.

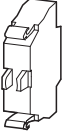
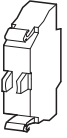
Ordering

LZM, M22-...

xEnergy

		For use with	Auxiliary contacts:  = safety function, by positive opening to IEC/EN 60947-5-1		Contact sequence	Part no. Article no. when ordered separately	Price see price separately
			N/O = Normally open	N/C = Normally closed			
Auxiliary contacts							
Standard auxiliary contact (HIN) Switching with the main contacts Used for indicating and interlocking tasks							
		LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O			M22-K10 216376	
				1 N/C 		M22-K01 216378	
	With 3 m connection cable instead of screw termination.	LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O	1 N/C 			
			2 N/O				
				2 N/C 			
Trip indicating auxiliary contact (HIA) General trip indication 'I', when tripped by voltage release, overload release or short-circuit release							
		LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O			M22-K10 216376	
				1 N/C		M22-K01 216378	
	With 3 m connection cable instead of screw termination.	LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O	1 N/C			
			2 N/O				
				2 N/C			

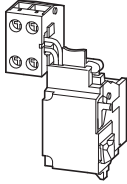

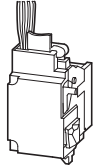

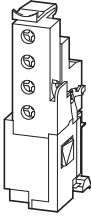

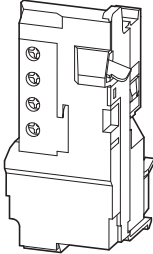

xEnergy

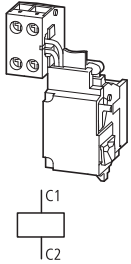
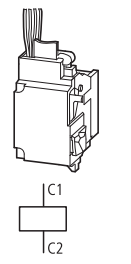
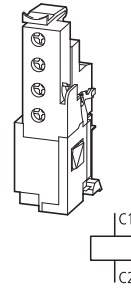
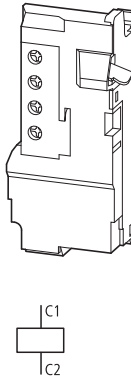
	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes	Notes
	M22-CK10 216384		20 off	For Std. pack: M22-(C)K... : Std. pack = 20 off	The following can be clipped into the switches: <ul style="list-style-type: none"> •LZM1- one standard auxiliary contact •LZM2 - up to 2 standard auxiliary contacts M22-(C)K... •LZM3 and LZM4 - up to 3 standard auxiliary contacts M22-(C)K... Any combinations of the auxiliary contact types is possible. Marking on switch: HIN
	M22-CK01 216385		20 off		
	M22-CK11 107940		20 off		
	M22-CK20 107898				
	M22-CK02 107899				
	M22-CK10 216384		20 off	For Std. pack: M22-(C)K... : Std. pack = 20 off	The following can be clipped into the switches: <ul style="list-style-type: none"> •LZM1 - one trip-indicating auxiliary switch •LZM2 - one M22-(C)K... trip-indicating auxiliary switch •LZM3 - one M22-(C)K... trip-indicating auxiliary switch •LZM4 - up to two M22-(C)K... trip-indicating auxiliary switches Any combinations of the auxiliary contact types is possible. Marking on switch: HIA
	M22-CK01 216385				
	M22-CK11 107940				
	M22-CK20 107898				
	M22-CK02 107899				

If the trip-indicating auxiliary contact in the fault-current block is used, the N/C contacts operates as a N/O contact and the N/C contact operates as an N/O contact (circuit symbol).

Ordering

LZM1, LZM2/3, LZM4











	For use with	Rated control voltage	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Undervoltage releases						
Without auxiliary contact Non-delayed disconnection of LZM circuit-breakers or LN switch-disconnectors when the control voltage sinks below 35 – 70% U_s . For use with Emergency-Stop devices in conjunction with Emergency-Stop button.						
 	With clamp terminal on the left-hand switch side.	LZM1(-4) LN1(-4)	24 V 50/60 Hz	NZM1-XU24AC 259434	1 off	When the undervoltage release is de-energized, accidental contact with the main contacts of the switch during attempts to switch on, is safely prevented. Undervoltage release cannot be installed simultaneously with NZM...-XHIV... early-make auxiliary contact or NZM...-XA... shunt release.
			208 V 240 V 50/60 Hz	NZM1-XU208-240AC 259442		
			380 V – 440 V 50/60 Hz	NZM1-XU380-440AC 259444		
			24 V DC	NZM1-XU24DC 259452		
 	With 3 m connection cable instead of screw termination.	LZM1(-4) LN1(-4)	24 V 50/60 Hz	NZM1-XUL24AC 259462	1 off	
			208 V 240 V 50/60 Hz	NZM1-XUL208-240AC 259471		
			380 V – 440 V 50/60 Hz	NZM1-XUL380-440AC 259473		
			24 V DC	NZM1-XUL24DC 259481		
 	With clamp terminal on the left-hand switch side.	LZM2(-4) LN2(-4)	24 V 50/60 Hz	NZM2/3-XU24AC 259491	1 off	
		LZM3(-4) LN3(-4)	208 V 240 V 50/60 Hz	NZM2/3-XU208-240AC 259499		
			380 V – 440 V 50/60 Hz	NZM2/3-XU380-440AC 259501		
			24 V DC	NZM2/3-XU24DC 259509		
 	With clamp terminal on the left-hand switch side.	LZM4(-4) LN4(-4)	24 V 50/60 Hz	NZM4-XU24AC 266189	1 off	
			208 V 240 V 50/60 Hz	NZM4-XU208-240AC 266193		
			380 V – 440 V 50/60 Hz	NZM4-XU380-440AC 266194		
			24 V DC	NZM4-XU24DC 266204		

	For use with	Rated control voltage U_s V	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Shunt releases						
Without auxiliary contact Switches are tripped by a voltage pulse or by the application of uninterrupted voltage.						
	With clamp terminal on the left-hand switch	LZM1(-4)	24 V AC/DC	NZM1-XA24AC/DC 259708		When the undervoltage release is de-energized, accidental contact with the main contacts of the switch during attempts to switch on, is safely prevented. Shunt release cannot be installed simultaneously with NZM...-XHIV... early-make auxiliary contact or NZM...-XU... undervoltage release.
		LN1(-4)	208 V – 250 V AC/DC	NZM1-XA208-250AC/DC 259726		
			380 V – 440 V AC/DC	NZM1-XA380-440AC/DC 259728		
	With 3 m connection cable instead of screw termination.	LZM1(-4)	24 V AC/DC	NZM1-XAL24AC/DC 259736	1 off	
		LN1(-4)	208 V – 250 V AC/DC	NZM1-XAL208-250AC/DC 259744		
			380 V – 440 V AC/DC	NZM1-XAL380-440AC/D 259746		
		LZM2(-4)	24 V AC/DC	NZM2/3-XA24AC/DC 259754	1 off	
		LZM3(-4)	208 V – 250 V AC/DC	NZM2/3-XA208-250AC/DC 259763		
		LN2(-4) LN3(-4)	380 V – 440 V AC/DC	NZM2/3-XA380-440AC/DC 259766		
		LZM4(-4)	24 V AC/DC	NZM4-XA24AC/DC 266447	1 off	
		LN4(-4)	208 V – 250 V AC/DC	NZM4-XA208-250AC/DC 266451		
			380 V – 440 V AC/DC	NZM4-XA380-440AC/DC 266452		

	For use with	Part no. Article no.	Price see price list	Std. pack	Notes
Door coupling rotary handle					
Complete including rotary drive and coupling parts An additional extension shaft is necessary with the NZM...-XT(V)D(V)(R)(-60) types. Degree of protection IP66					
Standard, black/grey					
	Lockable on the 0 position on the handle using up to 3 padlocks. With door interlock	LZM1(-4), LN1(-4)	NZM1-XTVD 260166	1 off	Door interlock <ul style="list-style-type: none"> • Not defeated in the locked OFF and ON positions • Can be modified such that it can be defeated from the outside using a screwdriver, when it is in the unlocked ON position. • Door can be opened in OFF NZM...-XTVD(V) • External warning plate/ designation label can be clipped on
		LZM2(-4), LN2(-4)	NZM2-XTVD 260168		
		LZM3(-4), LN3(-4)	NZM3-XTVD 260170		
		LZM4(-4), LN4(-4)	NZM4-XTVD 266614		
Red-yellow for Emergency-Stop					
	Lockable on the handle on the switch using up to 3 padlocks. Lockable in 0 position on the handle. With door interlock. Lockable in the 0 position	LZM1(-4), LN1(-4)	NZM1-XTVDVR 260178	1 off	Door interlock <ul style="list-style-type: none"> • Not defeated in the locked OFF position. • Can be modified such that it can be defeated from the outside using a screwdriver, when it is in the unlocked ON position. • Door can be opened in OFF NZM...-XTVDVR • External warning plate/ designation label can be clipped on
		LZM2(-4), LN2(-4)	NZM2-XTVDVR 260180		
		LZM3(-4), LN3(-4)	NZM3-XTVDVR 260182		
		LZM4(-4), LN4(-4)	NZM4-XTVDVR 266618		
Extension shaft					
	Max. mounting depth: 400 mm	LZM1(-4), LN1(-4)	NZM1/2-XV4 261232	1 off	Length 290 mm
		LZM2(-4), LN2(-4)	NZM3/4-XV4 261234		Length 225 mm
		LZM3(-4), LN3(-4)			Length 490 mm
		LZM4(-4), LN4(-4)	Length 425 mm		
	Max. mounting depth: 600 mm	LZM1(-4), LN1(-4)	NZM1/2-XV6 260191		Can be cut to required length
		LZM2(-4), LN2(-4)	NZM3/4-XV6 260193		
		LZM3(-4), LN3(-4)			
		LZM4(-4), LN4(-4)			

Notes

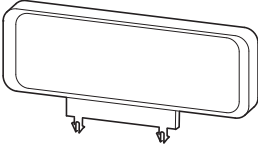




Circuit-breaker can also be installed in a lying position 90 ° left/right, with the handle still in the same position.

	For use with	Part no. Article no.	Price see price list	Std. pack	Notes
Rotary handle on circuit-breaker					
Complete with rotary drive					
Standard, black/grey					
	Lockable on the 0 position on the handle using up to 3 padlocks	LZM1(-4), LN1(-4)	NZM1-XDV 260125	1 off	NZM1(2)(3)-X...: Can also be combined with insulating surround. MODAN handle position detection by wire release can be retrofitted.
		LZM2(-4), LN2(-4)	NZM2-XDV 260127		
		LZM3(-4), LN3(-4)	NZM3-XDV 260129		
		LZM4(-4), LN4(-4)	NZM4-XDV 266608		
	Lockable on the on position on the handle using up to 3 padlocks.	LZM1(-4), LN1(-4)	NZM1-XDVG 285247		Can also be combined with insulating surround.
		LZM2(-4), LN2(-4)	NZM2-XDVG 285248		
Rotary handle on circuit breaker with door interlock					
Complete with rotary drive and insulating surround					
Standard, black/grey					
	Lockable on the 0 position on the handle using up to 3 padlocks, can also be modified for the I position. Also available with door interlock e.g. for MCC service distribution.	LZM1(-4), LN1(-4)	NZM1-XDTV 260131	1 off	Door interlock <ul style="list-style-type: none"> • In the ON position, can be defeated from the outside using a 1 mm pin • Not defeated in the locked OFF and ON positions • Door can be opened in OFF • Can only be switched ON when the door is closed
		LZM2(-4), LN2(-4)	NZM2-XDTV 260133		
Red-yellow for Emergency-Stop					
	Lockable on the 0 position on the handle using up to 3 padlocks. Also available with door interlock e.g. for MCC service distribution	LZM1(-4), LN1(-4)	NZM1-XDTV 260142	1 off	
		LZM2(-4), LN2(-4)	NZM2-XDTV 260144		

Ordering

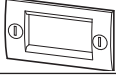
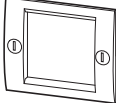
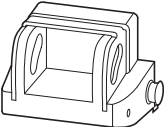

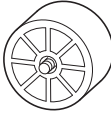
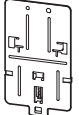

NZM...-XRAV..., ZFS..., BPF...

xEnergy

For use with		Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
External warning plate/designation label					
					
German/English	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4)	ZFS61/62-NZM7 272525		1 off	A bilingual external warning plate/ designation label in German/English is already included in the main switch assembly kit. 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-Croatian 68 Italian 77 Spanish 69 Greek 78 Czech 70 Norwegian 79 Turkish 71 Polish 80 Hungarian 72 Portuguese 81 Afrikaans To obtain the order number, insert the lan- guage code number into the type reference required. Ordering example External warning plate in Finnish: ZFS66-NZM7
German	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	ZFS61-NZM7 051089			
English		ZFS62-NZM7 065957			
French		ZFS63-NZM7 065958			
Blank (for engraving or printing)		ZFS60-NZM7 065896			
Further languages		ZFS*-NZM7 999978			
Lightning symbol Including terminal marking for main switch					
Small	 	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4)	BPF-NZM7 217294	10 off	Included as standard in main switch assembly kit
Large	 	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	BPF-NZM10 231363	10 off	

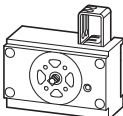
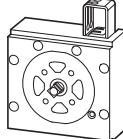
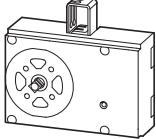

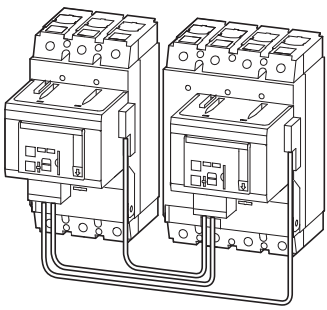
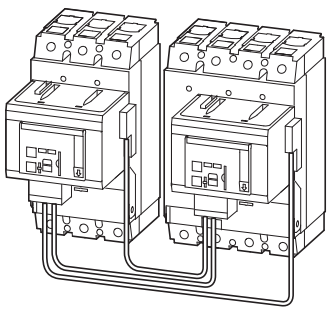
xEnergy

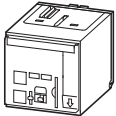
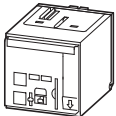
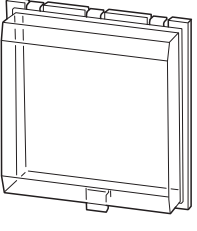
NZM...-XDZ, NZM...-XBR, NZM...-X...

For use with	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Insulating surrounds				
For toggle lever, rotary handle with rotary drive and remote operator. Degree of protection IP40				
	LZM1(-4), LN1(-4)	NZM1-XBR 260195	1 off	For oblong cut-out on doors and enclosures with material thicknesses of 1.5 – 5 mm. External warning plate/designation label can be clipped on NZM4-XBR cannot be combined with rotary handle with rotary drive.
	LZM2(-4), LN2(-4)	NZM2-XBR 260197		
	LZM3(-4), LN3(-4)	NZM3-XBR 284645		
	LZM4(-4), LN4(-4)	NZM4-XBR 284646		
Toggle lever locking device				
Off position lockable using up to 3 padlocks (hasp thickness 4 – 8 mm)				
	LZM1(-4), LN1(-4)	NZM1-XKAV 260199	1 off	Cannot be combined with insulating surround.
	LZM2(-4), LN2(-4)	NZM2/3-XKAV 260201	1 off	
	LZM3(-4), LN3(-4)			
Spacers				
Enables fast and low-priced adjustment of differing frame sizes with/without rotary handle to the same front depth				
	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4)	NZM1/2-XAB 260203	1 set	Grid depth 17.5 mm, M4 thread Type contains 4 off spacer Maximum component capacity: LZM1: 4 units per fixing screw, LZM2: 2 units per fixing screw 2 (LZM1) or 4 (LZM2) fixing screws contained per circuit-breaker
	LZM3(-4), LN3(-4) LZM4(-4), LN3(-4)	NZM3-XAB 260211	1 set	Grid depth 17.5 mm, M5 thread One set contains 4 spacers LZM3, LZM4: 1 off per fixing screw 4 fixing screws per switch included
Clip plate				
Enables snap-fit of the circuit-breaker to a DIN rail				
	LZM1(-4), LN1(-4)	NZM1-XC35 260213	1 off	For top-hat rail 35 mm
	LZM2, LN2	NZM2-XC75 260215	1 off	For top-hat rail 75 mm Not suitable for circuit-breakers with remote operator.

Ordering

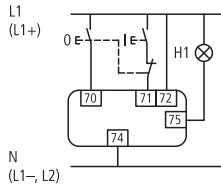
NZM...XMV(R)(L), NZM-XBZ...

	For use with	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Mechanical interlocking of (door coupling) rotary handles					
	LZM1(-4), LN1(-4)	NZM1-XMV 281581		1 off	Rotary handles on switches or door coupling rotary handles are additionally required. Cannot be combined with paralleling mechanisms, side wall operators and remote operator as well as NZM4-XBR insulating surrounds. In order to establish a mechanical interlock at least 2 interlock modules are required. Possible combinations and interlock variants → engineering. Order Bowden cable separately.
	LZM2(-4), LN2(-4)	NZM2-XMV 281582			
	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	NZM3-XMV 281583 NZM4-XMV 281584			
Bowden cables					
	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4) LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	NZM-XBZ225 281585 NZM-XBZ600 281586 NZM-XBZ1000 281587		1 off	
Mechanical interlock for remote operator					
For 2 switches of the same or next frame size with each other. Mounting beside one another.					
	LZM2(-4), LN2(-4) +LZM2(-4), LN2(-4) LZM2(-4), LN2(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM4(-4), LN4(-4) LZM4(-4), LN4(-4) +LZM4(-4), LN4(-4)	NZM2-XMVR 104543 NZM2/3-XMVR 104544 NZM3-XMVR 104545 NZM3/4-XMVR 104546 NZM4-XMVR 104547		1 off	Type contains parts for both switches. Remote operator also required. Maximum switching distance → engineering. Cannot be combined with rotary handles, door coupling rotary handles and early-make auxiliary contacts.
For 2 switches of the same or different type with opposed operation. Extra long Bowden cable for mounting one above the other or in adjacent enclosures.					
	LZM2(-4), LN2(-4) +LZM2(-4), LN2(-4) LZM2(-4), LN2(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM4(-4), LN4(-4) LZM4(-4), LN4(-4) +LZM4(-4), LN4(-4)	NZM2-XMVR 104548 NZM2/3-XMVR 104549 NZM3-XMVR 104550 NZM3/4-XMVR 104551 NZM4-XMVR 104552		1 off	Type contains parts for both switches. Remote operator also required. Maximum switching distance → engineering. Cannot be combined with rotary handles, door coupling rotary handles and early-make auxiliary contacts.

For use with	Rated control voltage	Part no. Article no. when ordered separately	Price see price list	Std. pack
	U_s V			
<p>Remote operator For remote switching of circuit-breakers and switch-disconnectors. ON and OFF switching and resetting by means of two-wire or three-wire control Local switching by hand possible. Lockable in the 0 position of the remote operator with up to 3 padlocks (hasp thickness: 4 – 8 mm)</p>				
<p>Closing delay 110 - 170 ms, opening delay 110 - 170 ms</p>				
	LZM2(-4) LN2(-4)	208 – 240 V 50/60 Hz	NZM2-XRD208-240AC 115391	1 off Sliding switch for „Auto“ or „Manual“ Max. number auxiliary contacts: - Standard auxiliary contacts: 2 - Trip-indicating auxiliary contact: 1 Cannot be combined with switch-disconnector LN... Cannot be combined with mechanical interlock
		380 – 440 V 50/60 Hz	NZM2-XRD380-440AC 115392	
		24 – 30 V DC	NZM2-XRD24-30DC 115393	
<p>Closing delay 60 - 100 ms, opening delay 300 - 3000 ms Can be synchronized</p>				
	LZM2(-4) LN2(-4)	208 – 240 V 50/60 Hz	NZM2-XR1208-240AC 259832	1 off Cannot be combined with switch-disconnector LN... Dual auxiliary switch M22-CK11 (20/02) can not be combined with remote operator NZM3-XR..
		380 – 440 V 50/60 Hz	NZM2-XR380-440AC 259834	
		24 – 30 V DC	NZM2-XR24-30DC 259836	
	LZM3(-4) LN(-4)	208 – 240 V 50/60 Hz	NZM3-XR208-240AC 259850	
		380 – 440 V 50/60 Hz	NZM3-XR380-440AC 259852	
		24 – 30 V DC	NZM3-XR24-30DC 259854	
	LZM4(-4) LN4(-4)	208 – 240 V 50/60 Hz	NZM4-XR208-240AC 266685	
		380 – 440 V 50/60 Hz	NZM4-XR380-440AC 266686	
		24 – 30 V DC	NZM4-XR24-30DC 266691	
<p>Shroud for 4th pole Additional shroud for mounting the NZM2-XR... and NZM3-XR... on a 4-pole switch.</p>				
	LZM2(-4), LN2-4		NZM2-XAVPR 266677	1 off
	LZM3-4, LN3-4		NZM3-XAVPR 266678	1 off
<p>Protective cover for door cutout Transparent protective shroud to increase the degree of protection to IP54</p>				
			RTR-NZM10 034825	1 off
<p>Notes Two- and three-wire control, circuit diagram Engineering, Page 36</p>				

2/3-wire control remote operator

Three-wire control



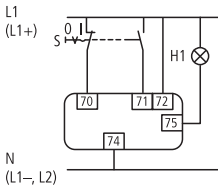
Terminal 70/71:

NZM-XR: Contact loading according to technical data

NZM2-XRD: Full current flows through the contact during make and break!

RMQ series contact elements can be used for the remote operators NZM2(3,4)-XR...

Two-wire control



Terminal 75:

NZM-XR: Operational readiness signal when the cover is closed, and not locked.

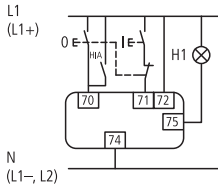
NZM2-XRD: Operational readiness signal when sliding switch set to Auto.

Sliding switch with three positions: Manual/Auto/Locked for reliable differentiation of operating positions.

AC-15: 400 V; 2 A

DC-13: 220 V; 0.2 A

Three-wire control with automatic reset to the 0 position after the switch has tripped



Switching cycle:

NZM2-XRD



NZM2-XR



NZM3-XR



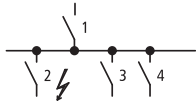
NZM4-XR



The time interval between OFF and ON is 3 seconds.

On commands received during the time interval are ignored within the first 3 seconds after switch off.

xEnergy



Incoming circuit-breaker
Outgoing circuit-breaker

Selectivity 415 V AC

between circuit-breakers enables separate shut-down of faulty system sections. Selectivity (discrimination) exists between incoming breaker 1 and outgoing breaker 2 if, only outgoing breaker 2 trips at position 2 during a short-circuit. System sections 3 and 4 continue to be operational.

**Incoming circuit-breaker (S1)
LZM...1-A...**

**Incoming circuit-breaker (S1)
LZM...2-A...**

I_{cu} [kA]	18(25)(36)					25(36)					
I_n [A]	20...40	50	63	80	100	125	160	160	200	250	300

Outgoing circuit-breaker (S2)	I_n [A]	$I_{cu}(415V)$ [kA]	Prospective short-circuit current (kA). Set the overload and short-circuit release of the incoming circuit-breaker to the max. value.										
LZM...1-A...	20...40	25...100	-	-	0.5	0.7	0.8	1.5	1.5	1.5	2	3	3
	50	25...100	-	-	-	0.6	0.8	1.5	1.5	1.5	2	3	3
	63	25...100	-	-	-	-	0.8	1.5	1.5	1.5	2	3	3
	80	25...100	-	-	-	-	-	1.5	1.5	1.5	2	3	3
	100	25...100	-	-	-	-	-	-	1.5	1.5	2	3	3
	125	25...100	-	-	-	-	-	-	-	-	2	3	3
	160	25...100	-	-	-	-	-	-	-	-	-2	3	3
LZM...2-A...	160	25...150	-	-	-	-	-	-	-	-	-	2	2
	200	25...150	-	-	-	-	-	-	-	-	-	-	-
	250	25...150	-	-	-	-	-	-	-	-	-	-	-
LZM...3-AE...	630	50...150	-	-	-	-	-	-	-	-	-	-	
LZM...4-AE...	800	50...100	-	-	-	-	-	-	-	-	-	-	
	1000	50...100	-	-	-	-	-	-	-	-	-	-	

Notes

T: full selectivity

Protection of PVC insulated cables against thermal overload with short-circuits

According to VDE 0100 part 430 cables and conductors must be protected against short-circuit and overload. The overload protection is obtained by using LZM circuit-breakers with settable, current-dependent, delayed overload release.

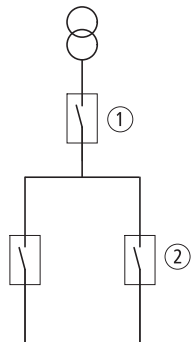
Short-circuit protection is provided by adjustable instantaneous releases, which open the main contacts in less than 25ms. The short-circuit total opening time restricts the temperature rise of the cable to a minimum.

The tables indicate the minimum conductor cross-section reliably protected by circuit-breakers during a short-circuit. (Operating voltage $U_N=415V$)

	Min. protected cross-section mm ² copper
LZM...1(-4)-...20	6
LZM...1(-4)-...25 ... 160	10
LZM...2(-4)-...20 ... 300	10
LZM...3(-4)-...250 ... 630	16
LZM...4(-4)-...630 ... 1000	95

Back-up protection

between LZM(N)(S) incoming circuit-breaker and LZM(B)(C)(N) outgoing circuit-breaker



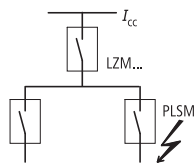
Outgoing circuit-breaker ②		Incoming circuit-breaker ①		
$I_{cu}(415V)$	I_n	LZM1	LZM2	LZM3
		up to 160 A 25 kA	up to 300 A 25 kA	up to 630 A 50 kA
LZMB1 36 kA	up to 160 A	25	36	50
LZMC1 50 kA	up to 160 A	-	36	50
LZMB2 25 kA	up to 300 A	25	36	50
LZMC2 36 kA	up to 300 A	-	36	50
LZMC3 36 kA	up to 630 A	-	-	50
LZMN3 50 kA	up to 630 A	-	-	50

Where the prospective fault current at the point of installation of circuit-breakers is very high, it is conventional to use LZMN current-limiting circuit-breakers. An attractively priced alternative is to fit a LZMN current-limiting circuit-breaker upstream of LZMB(C) standard circuit-breakers, if the fault level is too high for LZMB(C) switches.

The table shows which current-limiting circuit-breaker LZMN in combination with LZMB(C) are to be used to provide protection at the network locations with high short-circuit capacities.

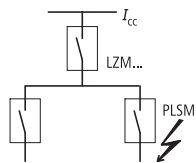
The selectivity limit is determined by the response current of the non-delayed short-circuit release in the upstream incoming circuit-breaker. In many applications this is sufficient.

between LZM...1-A... incoming circuit-breaker and FAZ-B(C)/PLSM-B(C)... outgoing circuit-breaker



Outgoing circuit-breaker	Outgoing circuit-breaker LZM(B)(C)2-A...	LZMC(N)1-A...
FAZ-B(C)...		
0,5–16	25kA	30kA
20–40	20kA	20kA
50, 63	15kA	15kA
PLSM-B(C)...(/...)		
0,5–16	25kA	30kA
20–40	20kA	20kA
50, 63	15kA	15kA

between LZM...2-A... incoming circuit-breaker and FAZ-B(C)/PLSM-B(C)... outgoing circuit-breaker

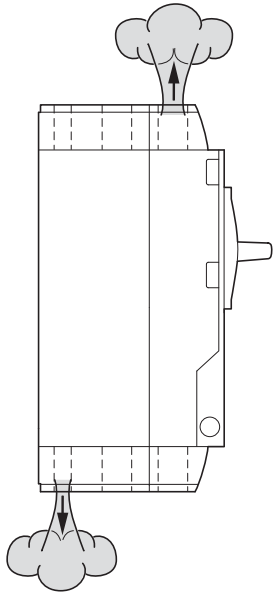


Outgoing circuit-breaker	Incoming circuit-breaker LZMB(C)2-A...	LZMN2-A...
FAZ-B(C)...		
0,5–10	25 kA	50 kA
13–32	25 kA	30 kA
40–63	20 kA	20 kA
PLSM-B(C)...(/...)		
0,5–10	25 kA	50 kA
13–32	25 kA	30 kA
40–63	20 kA	20 kA

xEnergy

LZM1, LZM2, LZM3, LZM4

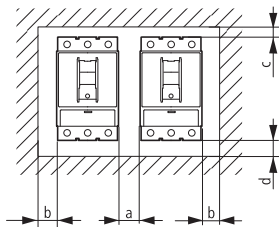
Direction of blow-out



	Top, front	Bottom, rear
LZM1	X	–
LZM2 ¹⁾	X	X
LZM3	X	X
LZM4	X	–

¹⁾ LZM2B(C) – A ... as LZM1

Minimum clearances



between two adjacently mounted switches
Minimum clearance a in mm

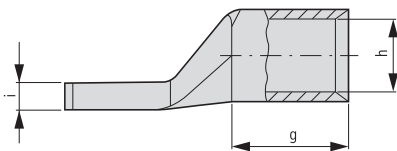
	LZM1	LZM2	LZM3	LZM4
LZM1	0	5	5	15
LZM2	5	5	5	15
LZM3	5	5	5	15
LZM4	15	15	15	15

between switch and other parts
Minimum clearances in mm

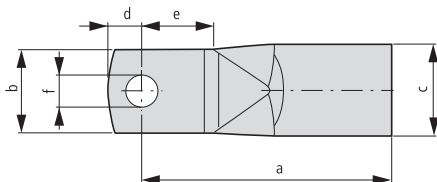
	b	c	d
	≦ 440 V	≦ 440 V	≦ 440 V
LZM1	0	30	0
LZM2 ¹⁾	5	20	35
LZM3	5	30	60
LZM4	15	50	0

¹⁾ LZM2B(C) – A ... c = 20 mm, d = 0 mm

Dimensions



For pressing the cable lugs a press tool K22, HK60/22 or EK22 from the company Klauke is necessary with the following press inserts:
R22/95 for 95 mm²
R22/120 for 120 mm²
R22/150 for 150 mm²
R22/185 for 185 mm²
R22/240 for 240 mm²

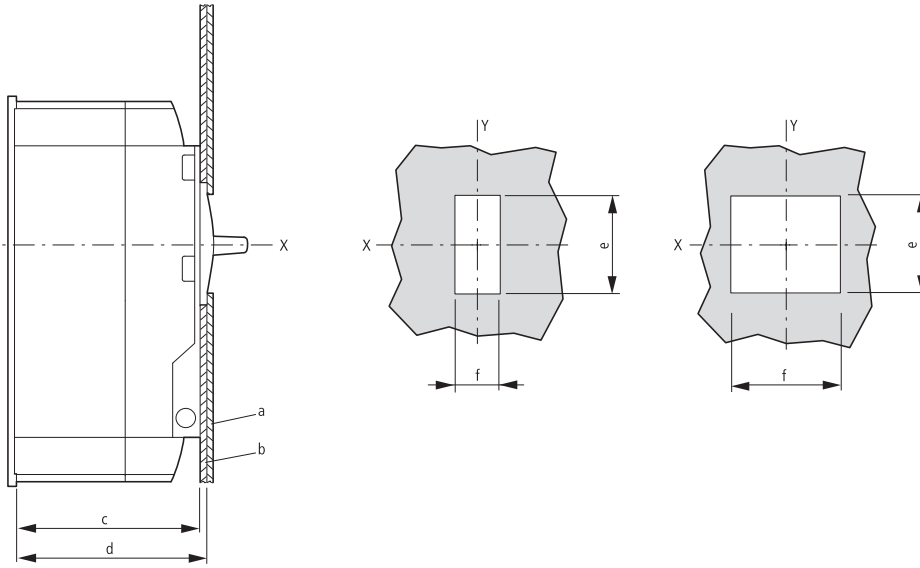


Cable lug	For use with	Rated cross section mm ²	Terminal bolt ø	Dimensions in mm								
				a	b	c	d	e	f	g	h	i
KS95-NZM7	LZM2	95	M8	53+2	23±0.5	18±0.2	10±1	19	8,5	25	13,5	4,4
KS120-NZM7	LZM2	120	M8	56+2	23±0.5	19.5±0.2	10±1	19	8,5	26	15	4,4
KS150-NZM7	LZM2	150	M8	61+2	23±0.5	21±0.2	10±1	19	8,5	30	16,5	4,4
NZM2-XKS185	LZM2	185	M8	65±1.5	22±1	24±0.3	9 ⁺¹ _{-0.5}	19 ^{+2.5} _{-0.5}	8.5 ^{+0.05} _{-0.1}	30±2	19±0.4	7
NZM3-XKS185	LZM3, LZM4	185	M10	65	24,5	24	11,5	18	10,5	30	19	7.0±0.8
NZM3-XKS240	LZM3, LZM4	240	M10	72	31	26	11,5	19	10,5	35	21	5.0±0.8

Front cut-out

Cut-out a
toggle lever

Cut-out b
rotary handle,
remote operator

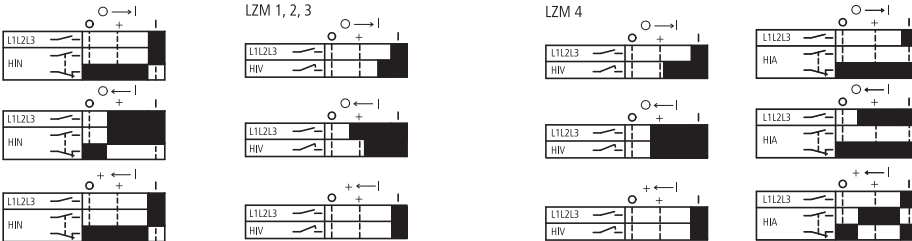


	Distance from mounting plate and door cutout		Cut-out a		Cut-out b	
	c mm	d mm	e mm	f mm	e mm	f mm
LZM1	68	73	40	23	46	91
LZM2	103	108	79	36	96	101
LZM3	120.5	125.5	79	36	96	136
LZM4	138	146	101	105	118	204

Standard auxiliary contact (HIN)

Early-make auxiliary contact (HIV)

Trip-indicating auxiliary contact (HIA)



- 0 → I Switching on
- 0 ← I Switching off
- + ← I Trip

- Contact closed
- Contact open

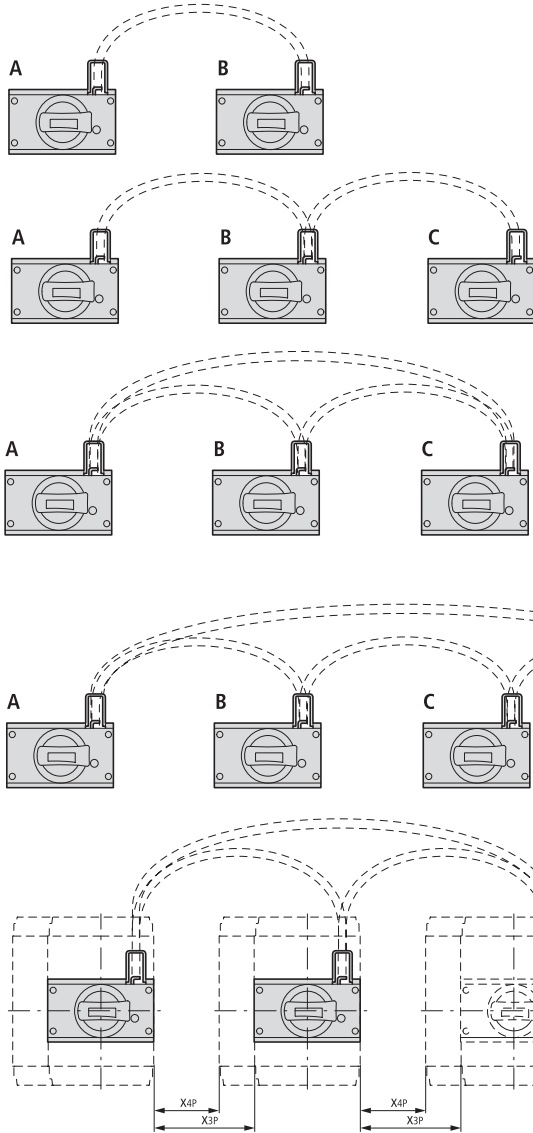
Notes

If early-make contacts are required in combination with shunt or undervoltage releases, please select the combination type in the "Release" section.

xEnergy

LZM, NZM...-XBZ-...

Interlocking variants and combination options



A	B
OFF	OFF
ON/TRIP	ON
ON	ON/TRIP

A	B	C
OFF	OFF	OFF
ON	ON/TRIP	ON
ON/TRIP	ON	ON/TRIP

A	B	C
OFF	OFF	OFF
ON/TRIP	ON	ON
ON	ON/TRIP	ON
ON	ON	ON/TRIP

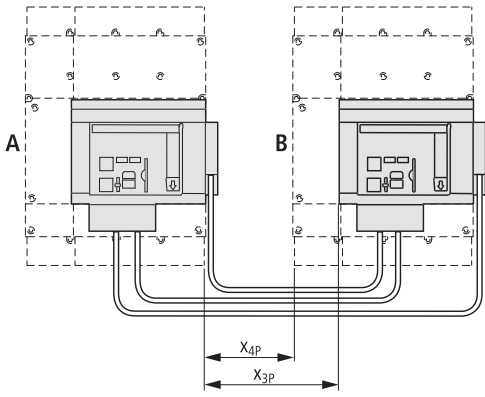
A	B	C	D
OFF	OFF	OFF	OFF
ON/TRIP	ON	ON/TRIP	ON
ON	ON/TRIP	ON	ON/TRIP

= Switch clearance 3 pole
 = Switch clearance 4 pole

NZM-XBZ225		right switch							
max. switch clearance		LZM1		LZM2		LZM3		LZM4	
		X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}
left switch		mm		mm		mm		mm	
LZM1	3/4 pole	135	105	120	85	135	90	125	80
LZM2	3/4 pole	135	105	120	85	135	90	125	80
LZM3	3/4 pole	90	75	75	35	85	40	80	45
LZM4	3/4 pole	50	35	40	15	25	—	15	—

NZM-XBZ600		right switch							
max. switch clearance		LZM1		LZM2		LZM3		LZM4	
		X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}
left switch		mm		mm		mm		mm	
LZM1	3/4 pole	510	480	495	460	510	465	475	405
LZM2	3/4 pole	510	480	495	460	510	465	475	405
LZM3	3/4 pole	460	430	450	410	460	415	460	390
LZM4	3/4 pole	400	370	380	340	400	375	390	320

NZM-XBZ1000		right switch							
max. switch clearance		LZM1		LZM2		LZM3		LZM4	
		X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}
left switch		mm		mm		mm		mm	
LZM1	3/4 pole	910	880	895	860	910	865	865	795
LZM2	3/4 pole	910	880	895	860	910	865	865	795
LZM3	3/4 pole	820	790	850	810	860	815	860	790
LZM4	3/4 pole	750	720	730	700	800	775	790	720

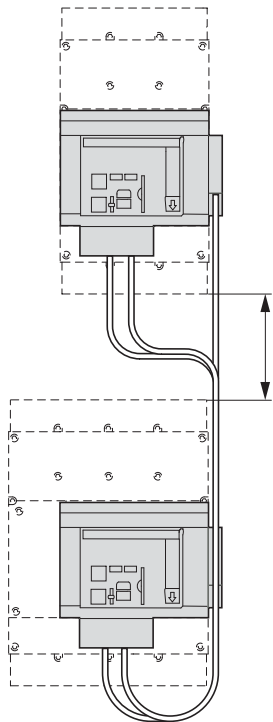


**XMVR mechanical interlock
(Mounting adjacent)**

NZM...-XMVR		right switch					
max. switch clearance		LZM2	LZM3		LZM4		
		X _{3p}	X _{4p}	X _{3p}	X _{4p}	X _{3p}	X _{4p}
left switch		mm	mm	mm	mm	mm	mm
LZM2	3/4 pole	130	95	95	50	–	–
LZM3	3/4 pole	–	–	135	90	155	85
LZM4	3/4 pole	–	–	–	–	120	50

X_{3P} = max. switch clearance 3 pole

X_{4P} = max. switch clearance 4 pole



**XMVRL mechanical interlock
Mounting in adjacent enclosures**

NZM...-XMVRL		right switch					
max. switch clearance		LZM2	LZM3		LZM4		
		X _{3p}	X _{4p}	X _{3p}	X _{4p}	X _{3p}	X _{4p}
left switch		mm	mm	mm	mm	mm	mm
LZM2	3/4 pole	350	315	420	385	–	–
LZM3	3/4 pole	–	–	400	365	460	390
LZM4	3/4 pole	–	–	–	–	420	350

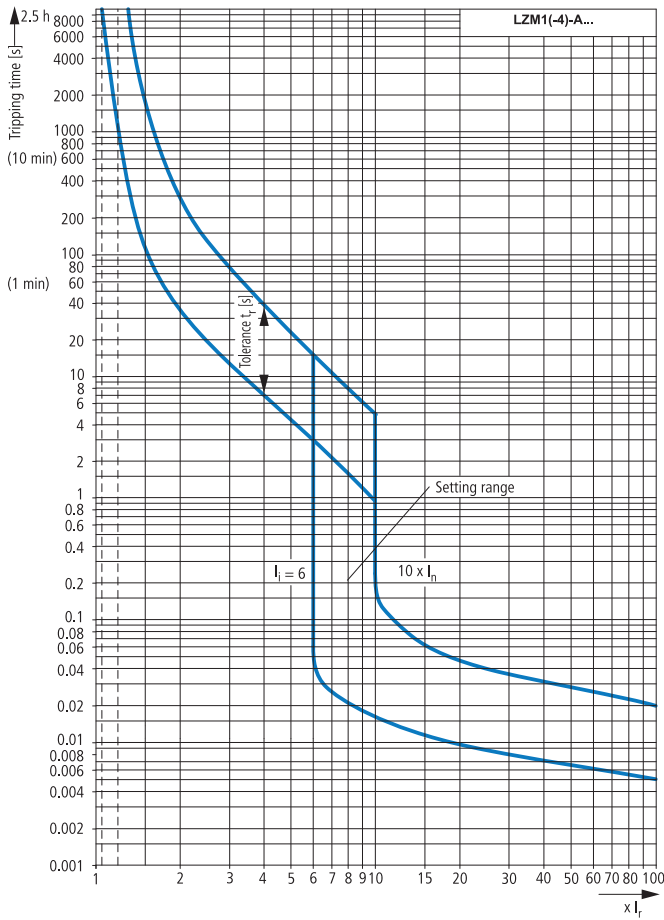
**XMVRL mechanical interlock
(Mounting one above the other)**

NZM...-XMVRL		Switch top		
max. switch clearance		LZM2	LZM3	LZM4
		3/4 pole	3/4 pole	3/4 pole
Switch bottom		mm	mm	mm
LZM2	3/4 pole	220	225	–
LZM3	3/4 pole	–	220	230
LZM4	3/4 pole	–	–	230

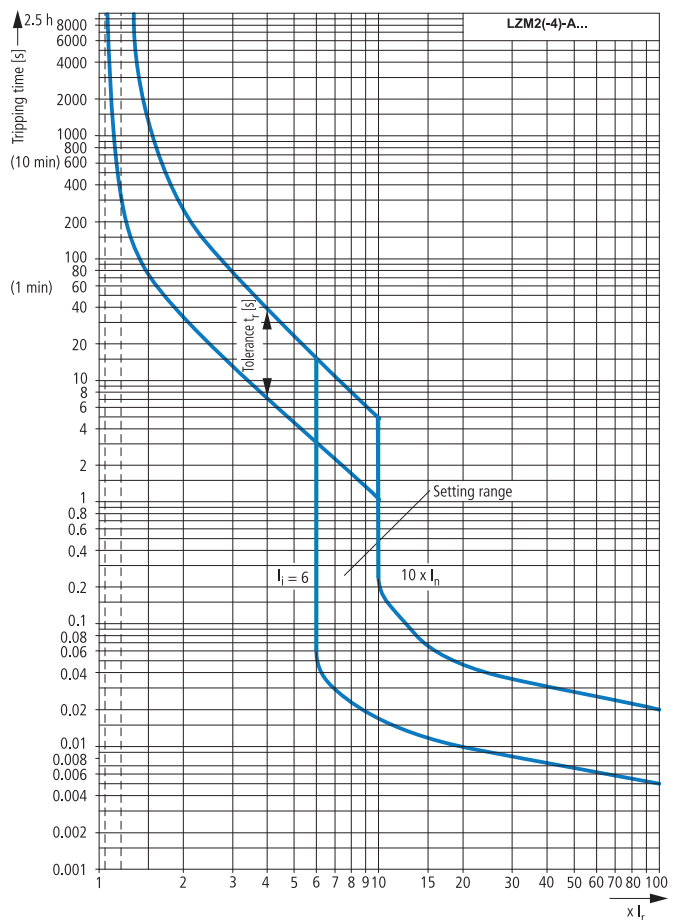
Y = max. switch clearance

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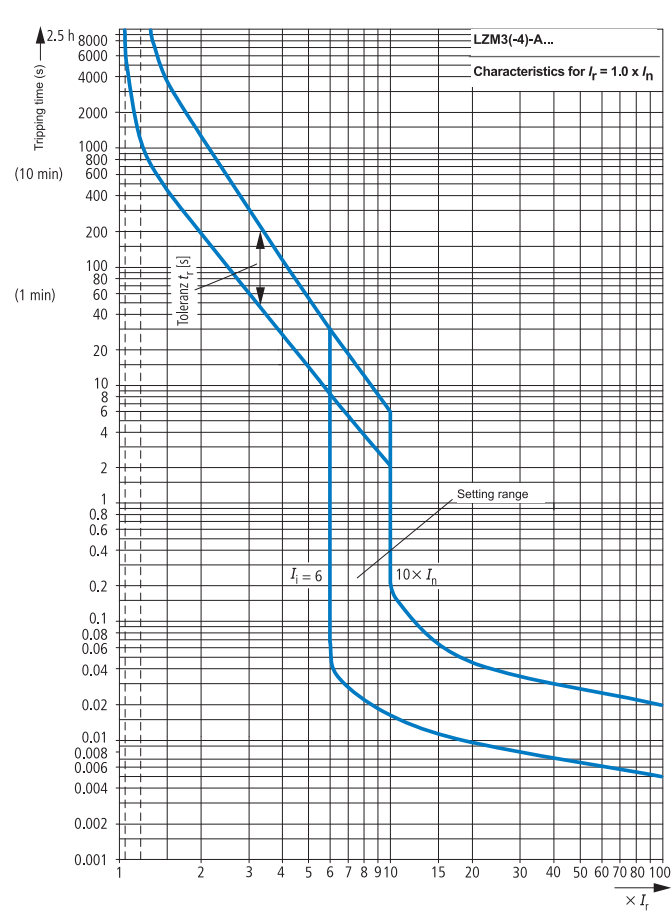
System and line protection with LZM1



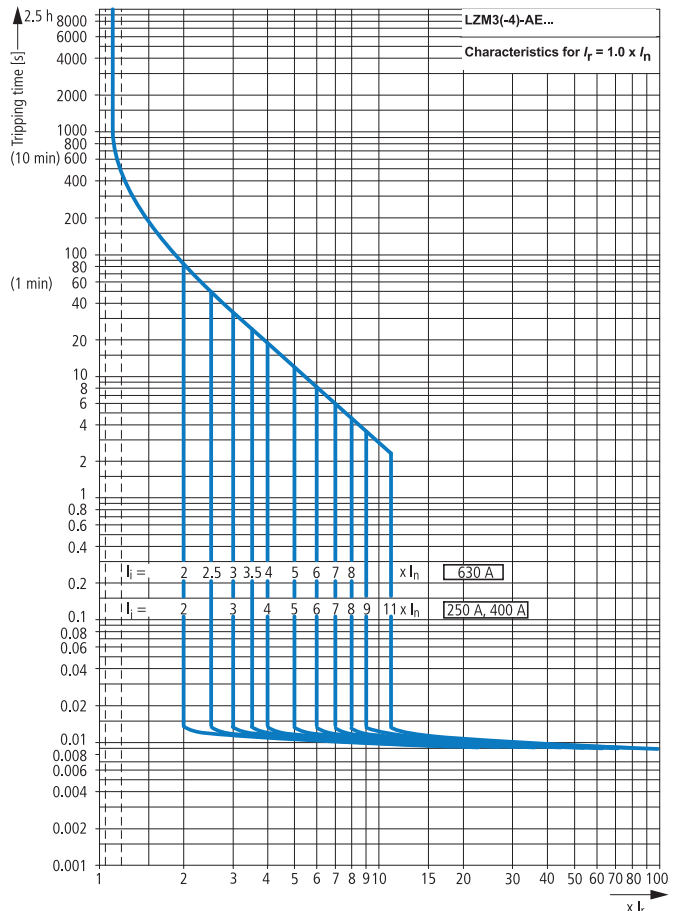
System and line protection with LZM2



System and line protection with LZM3...-A...

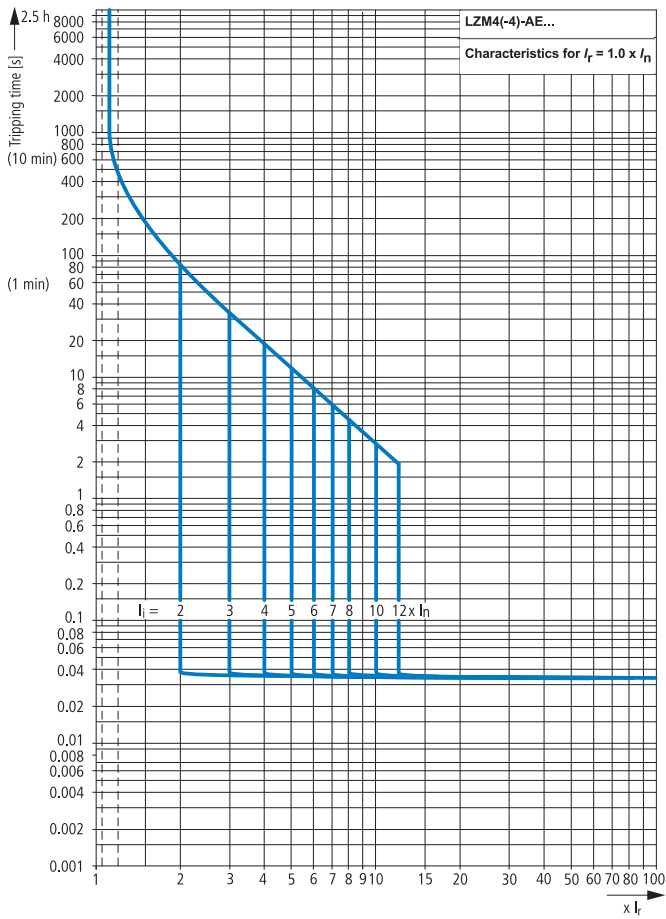


System and line protection with LZM3...-AE...

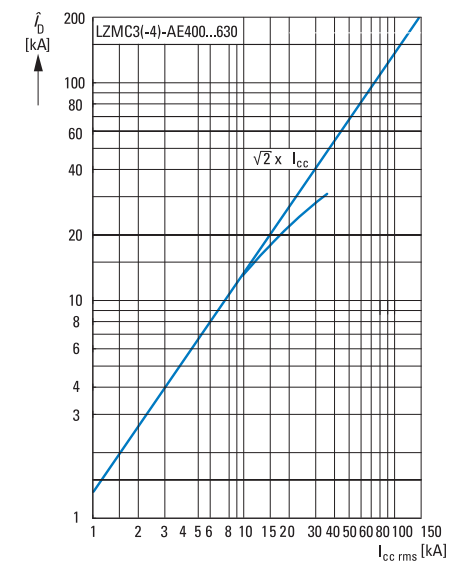
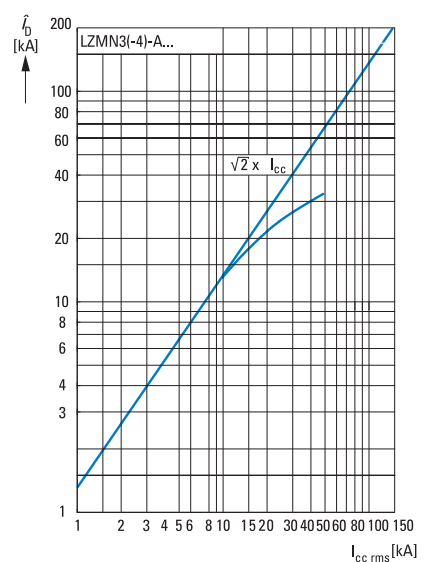
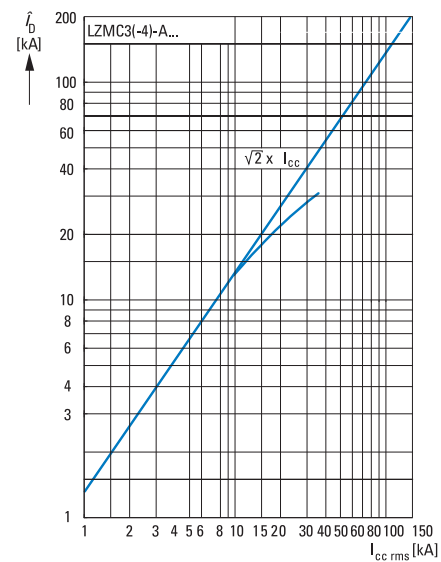
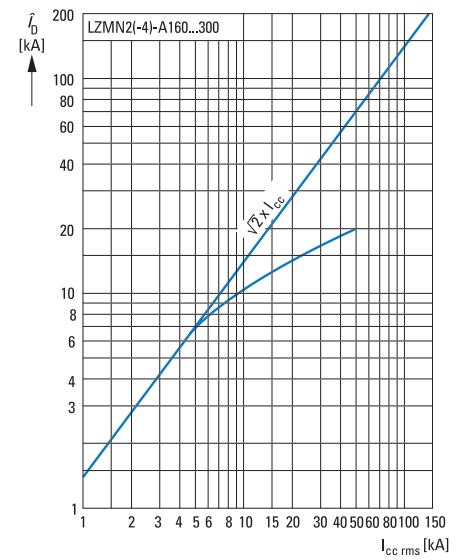
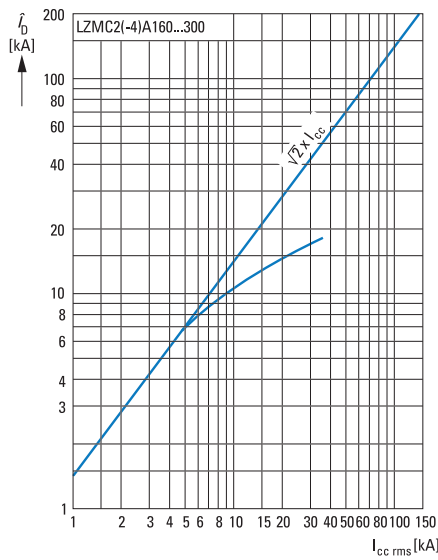
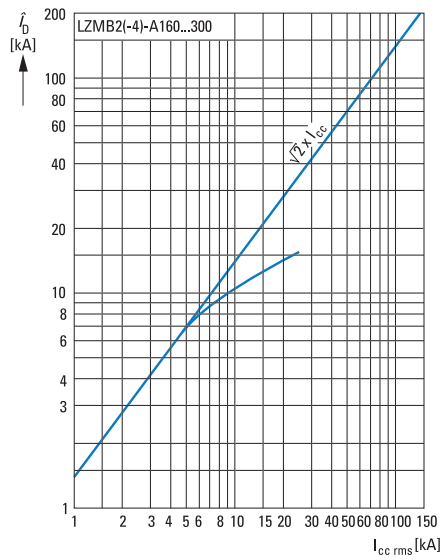
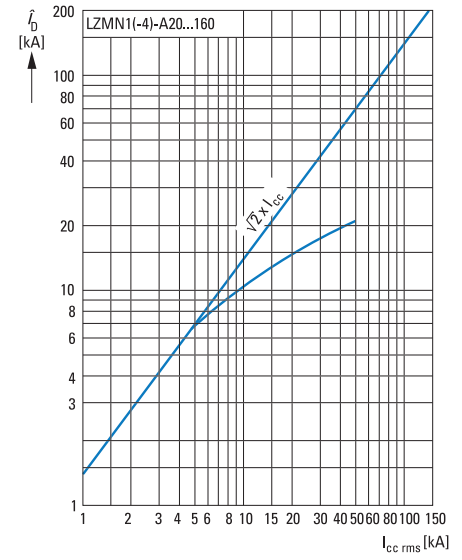
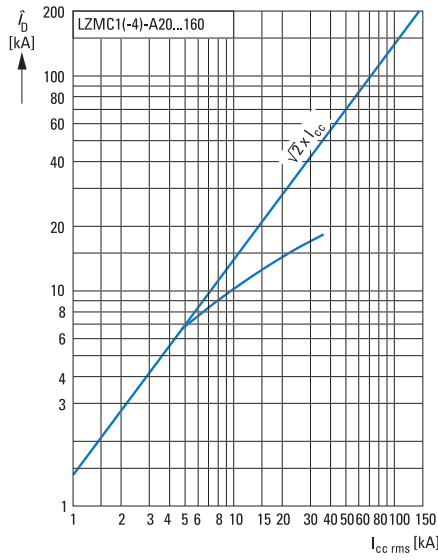
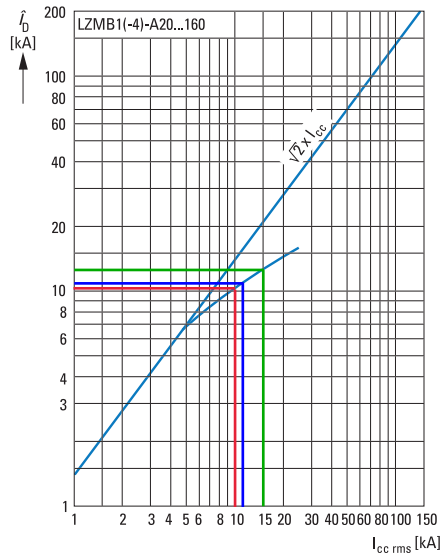


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System and line protection with LZM4



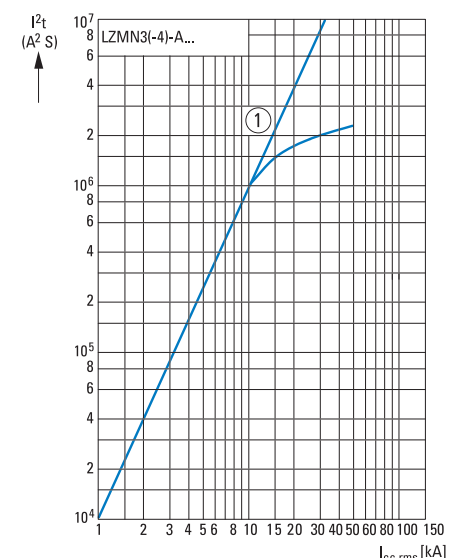
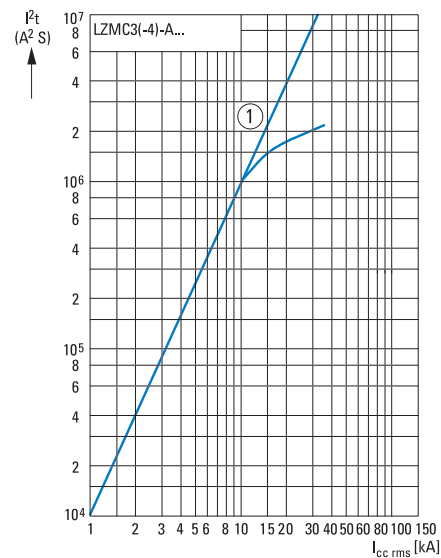
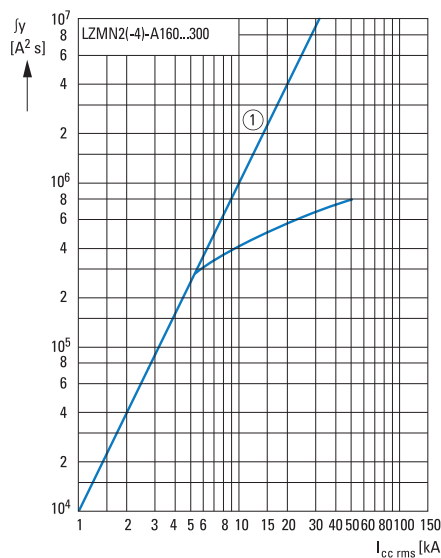
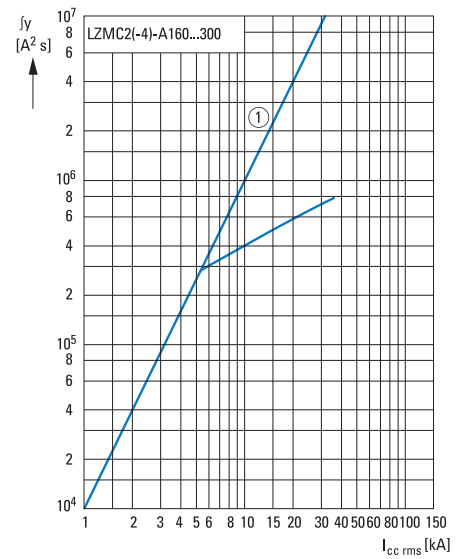
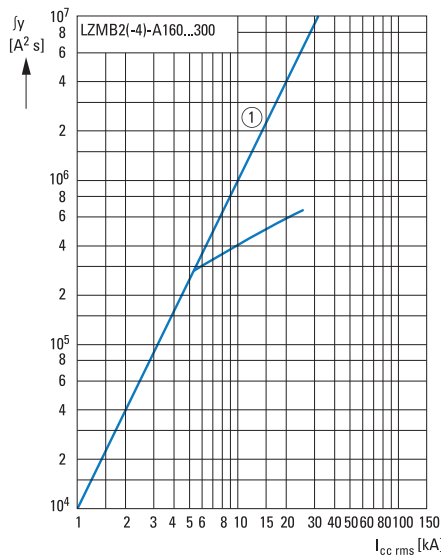
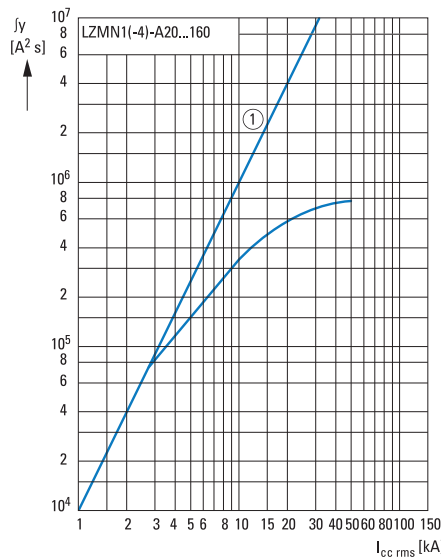
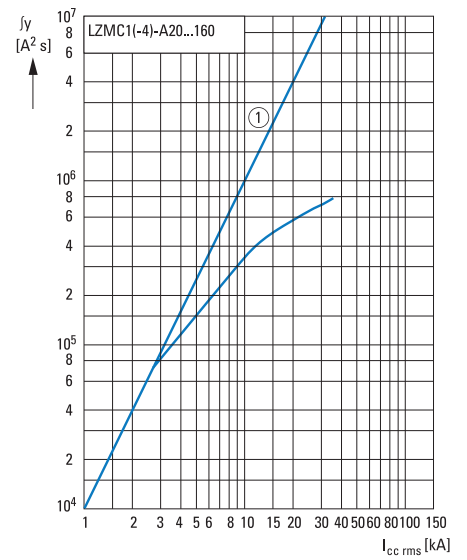
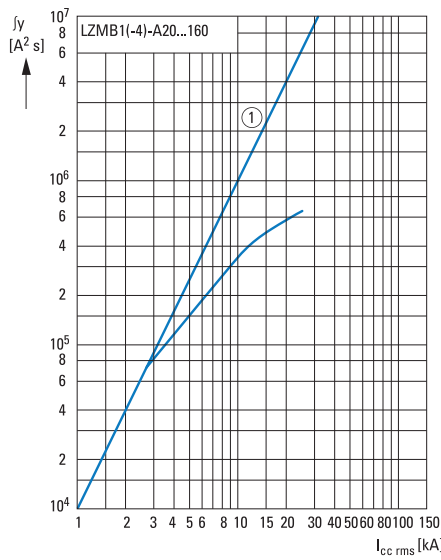
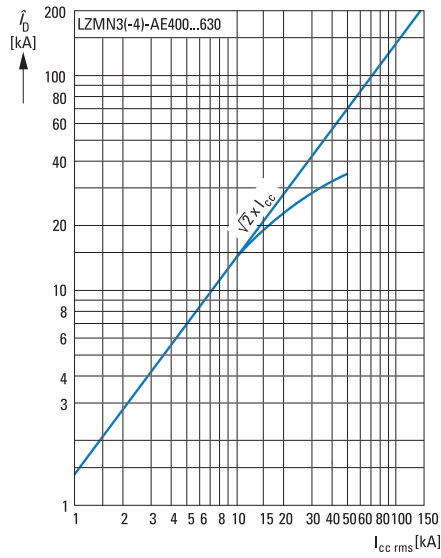
Let-through current \hat{i}_D



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LZM1, LZM2, LZM3

Let-through energy I^2t



				Rated uninterrupted current max. 160 A		
				LZMB1	LZMC1	LZMN1
General						
Standards				IEC/EN 60947		
Protection against direct contact				Finger and back of hand proof to VDE 0106 Part 100		
Climatic proofing				Damp heat, constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30		
Ambient temperature						
Storage		°C		-25...+70		
Operation		°C		-25...+70		
Mechanical shock resistance (IEC/EN 60068-2-27)				20 (half-sinusoidal shock 20 ms)		
Safe isolation to VDE 0106 Part 101 and Part 101/A1						
Between auxiliary contacts and main contacts		V AC		500		
between the auxiliary contacts		V AC		300		
Mounting position				Vertical and 90° in all directions		
Direction of incoming supply				As required		
Degree of protection						
Device				In the operating controls area: IP20 (basic degree of protection)		
Enclosures				With insulating surround: IP40, with door coupling rotary handle: IP66		
Terminals				Tunnel terminal: IP10 Phase isolator and strip terminal: IP00		
Circuit-breakers						
Rated impulse withstand voltage U_{imp}						
Main contacts		V		6000	6000	6000
Auxiliary contacts		V		6000	6000	6000
Rated operational voltage	U_e	V AC		440	440	440
Overtoltage category/pollution degree				III/3	III/3	III/3
Rated insulation voltage	U_i	V		690	690	690
Switching capacity						
Rated short-circuit making capacity						
240 V	I_{cm}	kA		63	121	187
400/415 V	I_{cm}	kA		53	76	105
440 V	I_{cm}	kA		53	63	74
Rated short-circuit breaking capacity I_{cn}						
I_{cu} to IEC/EN 60947 operating sequence O-t-CO	240 V 50/60 Hz	I_{cu}	kA	30	55	85
	400/415 V 50/60 Hz	I_{cu}	kA	25	36	50
	440 V 50/60Hz	I_{cu}	kA	12,5	18	25
I_{cs} to IEC/EN 60947 operating sequence O-t-CO-t-CO	240 V 50/60 Hz	I_{cs}	kA	30	55	85
	400/415 V 50/60 Hz	I_{cs}	kA	25	36	50
	440 V 50/60Hz	I_{cs}	kA	9	13	18
Maximum low-voltage h.b.c. fuse ¹⁾		A gG/gL		LZM.1-...20...100: 200 LZM.1-...125, 160: 315		
Utilization category to IEC/EN 60947-2				A	A	A
Rated short-time withstand current						
t = 0.3 s	I_{cw}	kA		-	-	-
t = 1 s	I_{cw}	kA		-	-	-
Rated making and breaking capacity						
Rated operational current	AC-1 400/415 V 50/60 Hz	I_e	A	160	160	160
Lifespan, mechanical		Operations		10000	10000	10000
Maximum operating frequency		Ops/h		120	120	120
Lifespan, electrical						
	AC-1 400/415 V 50/60 Hz	Operations		5000	5000	7500
Current heat loss at I_u ²⁾		W		36.1	36.1	36.1
Total opening delay at short-circuit		ms		< 10	< 10	< 10

Notes

¹⁾ Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker

²⁾ For current heat loss the specification refers to the maximum nominal current of the frame size

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LZM...1, LZM...2, LZM...3, LZM...4

Rated uninterrupted current max. 300 A			Rated uninterrupted current max. 630 A		Rated uninterrupted current max. 1000 A
LZMB2	LZMC2	LZMN2	LZMC3	LZMN3	LZMN4
IEC/EN 60947,					
Finger and back of hand proof to VDE 0106 Part 100					
Damp heat, constant, according to IEC 60068-2-78					
Damp heat, cyclical to IEC 60068-2-30					
-25...+70					
-25...+70					
20 (half-sinusoidal shock 20 ms)					
500					
300					
Vertical and 90° in all directions					
As required					
In the operating controls area: IP20 (basic degree of protection)					
With insulating surround: IP40, with door coupling rotary handle: IP66					
Tunnel terminal: IP10					
Phase isolator and strip terminal: IP00					
8000	8000	8000	8000	8000	8000
6000	6000	6000	6000	6000	6000
440	440	440	440	440	440
III/3	III/3	III/3	III/3	III/3	III/3
690	690	690	690	1000	1000
63	121	187	121	187	105
53	76	105	76	105	105
53	63	74	63	74	74
30	55	85	55	85	50
25	36	50	36	50	50
12.5	18	25	18	25	25
30	55	85	55	85	37
25	36	50	36	50	37
9	13	18	13	18	18
355	355	355	LZMN3-...250, 400: 400 LZMN3-...500, 630: 630		
A	A	A	A	A	B
-	-	1.9	3.3	3.3	19.2
-	-	1.9	3.3	3.3	19.2
300	300	300	630	630	1000
10000	10000	10000	7500	7500	5000
120	120	120	60	60	60
5000	5000	7500	2500	2500	1500
58.3	58.3	58.3	119	119	111
< 10	< 10	< 10	< 10	< 10	< 25

			LN1(-4) max. 160 A	LN2(-4) max. 250 A	LN3(-4) max. 630 A	LN4(-4) max. 1000 A
Switch-disconnectors						
Rated impulse withstand voltage						
Main contacts	U_{imp}	V	6000	8000	8000	8000
Auxiliary contacts	U_{imp}	V	6000	6000	6000	6000
Rated operational voltage	U_e	V AC	690	690	690	690
Rated uninterrupted current max.						
IEC/EN 60947-2 annex L	I_u	A	160	250	630	1000
Overvoltage category/pollution degree						
			III/3	III/3	III/3	III/3
Rated Insulation voltage	U_i	V AC	690	690	1000	1000
For use in IT electrical power networks		V	690	690	690	525
Switching capacity						
Rated short-circuit making capacity	I_{cm}	kA	2.8	5.5	25	53
Rated short-time withstand current						
t = 0.3 s	I_{cw}	kA	2	3.5	12	25
t = 1 s	I_{cw}	kA	2	3.5	12	25
Rated conditional short-circuit current						
With back-up fuse		A gG/gL	PN1(N1)63...125: 125 PN1(N1)-160: 160	PN2(N2)-160...250: 250	PN3(N3)-400...630: 630	N4-630...1000: 2 x 500
400 ... 415 V		kA	100	100	100	100
With downstream fuse		A gG/gL	LN1-63...125: 125 LN1-160: 160	LN2-160...250: 250	LN3-400...630: 630	LN4-630...1000: 2 x 500
400 ... 415 V		kA	100	100	100	100
Rated making and breaking capacity						
Rated operational current, AC-23B						
415 V	I_e	A	160	250	630	1000
Lifespan, mechanical	Operations		10000	10000	7500	5000
Maximum operating frequency		Ops./h	120	120	60	60
Lifespan, electrical to IEC/EN 60947-4-1 section B						
AC-1						
400/415 V	Operations		5000	5000	2500	1500
AC-23B						
400/415 V	Operations		200	200	200	100
Current heat loss at $I_u^{1)}$						
		W	29.2	48	107	111

Notes

¹⁾ The current heat loss ratings refer to the maximum current rating of the frame size.

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Device Type	Release Type	Response values of the overload release at temperatures deviating from the reference temperatures						
		Temperature compensation coefficient						
		20 °C	30 °C	40 °C	50 °C	60 °C	65 °C	70 °C
Thermomagnetic release (TM)								
System protection		Protection of systems (reference temperature 40 °C)						
LZM...1(-4)-A15...80	TM	1.14	1.07	1	0.93	0.86	0.83	0.79
LZM...1(-4)-A90...125	TM	1.14	1.07	1	0.93	0.86	0.83	0.79
LZM...1(-4)-A160	TM	1.08	1.04	1	0.96	0.92	0.90	0.88
LZM...2(-4)-A15...200	TM	1.04	1.02	1	0.98	0.96	0.95	0.94
LZM...2(-4)-A250	TM	1.04	1.02	1	0.98	0.96	0.95	0.94
LZM...3(-4)-A250...500	TM	11.12	1.06	1	0.94	0.88	0.85	0.82

Notes With temperatures which deviate from the reference temperature, a slight change of the overload protection properties occurs. In order to determine the release time using the tripping characteristics the temperature compensation coefficient in accordance with the table must be considered.
 Example: An LZM1-A100 is calibrated for a reference temperature of 40 °C.
 What happens when it is operated at an ambient temperature of 60 °C ?
 At 60 °C, the temperature compensation coefficient of 0.86 results in a reduced operating current of $I_r = 100 \text{ A} \times 0.86 = 86 \text{ A}$.
 In other words at an ambient temperature of 60 °C the LZM1-A100 trips as if it were set to 86 A.

Device Type	Release Type	Reduction of the rated operational current (derating) under particular ambient conditions (according to IEC 947)						
		Derating coefficient						
		20 °C	30 °C	40 °C	50 °C	60 °C	65 °C	70 °C
Thermomagnetic release (TM)								
System protection		Protection of systems (reference temperature 40 °C)						
LZM...1(-4)-A15...80	TM	1	1	1	1	1	1	1
LZM...1(-4)-A90...125	TM	1	1	1	1	0.86	0.83	0.80
LZM...1(-4)-A160	TM	1	1	1	0.95	0.90	0.85	0.80
LZM...2(-4)-A15...200	TM	1	1	1	1	1	1	1
LZM...2(-4)-A250	TM	1	1	1	1	0.90	0.85	0.80
LZM...3(-4)-A250...500	TM	1	1	1	0.94	0.88	0.85	0.82
Electronic release (E)								
System protection								
LZM...3(-4)-AE630	E	1	1	1	1	0.90	0.85	0.80
LZM...4(-4)-AE800...1000	E	1	1	1	1	1	1	1

Notes The derating coefficient must be considered in accordance with the following table in order to determine the maximum permissible current loading at different ambient temperatures.
 Example: An LZM2-A250 should be operated at an ambient temperature of 65 °C.
 How high is the permissible rated operational current I_e ?
 At 65 °C the derating coefficient is 0.85, this means $I_e = 250 \text{ A} \times 0.85 = 212.5 \text{ A}$.
 The LZM2-A250 may be operated at an ambient temperature of 65 °C with a maximum $I_e = 212.5 \text{ A}$.

Weight	kg
Circuit-breaker	
LZM...1-...	1.046
LZM...1-4-...	1.325
LZM...2-...	2.345
LZM...2-4-...	3.5
LZM...3-...	6.34
LZM...3-4-...	8.4
LZM...4-...	21
LZM...4-4-...	27

LZM up to 500 A with thermomagnetic release (3- and 4-pole)

I_n [A]	LZM1- A...		LZM2- A...		LZM3- A	
	P [W]	R [μOhm]	P [W]	R [μOhm]	P [W]	R [μOhm]
20	9.8	8180	5.1	4250	—	—
25	8.8	4680	8	4250	—	—
26	—	—	—	—	—	—
30	—	—	—	—	—	—
32	9.3	3030	9.6	3140	—	—
33	—	—	—	—	—	—
35	—	—	—	—	—	—
40	10.7	2220	14	2800	—	—
45	—	—	—	—	—	—
50	13.2	1760	17	2270	—	—
60	—	—	—	—	—	—
63	14.2	1190	20.2	1700	—	—
70	—	—	—	—	—	—
80	16.3	850	20.5	1070	—	—
90	—	—	—	—	—	—
100	21.9	730	25.7	855	—	—
110	—	—	—	—	—	—
125	26.7	570	27.8	589	—	—
150	—	—	—	—	—	—
160	36.1	460	38.4	427	—	—
175	—	—	—	—	—	—
200	—	—	48	332	—	—
225	—	—	—	—	—	—
250	—	—	58.1	310	68	384
300	—	—	83.7	310	79	256
400	—	—	—	—	72	151
500	—	—	—	—	93	124

Notes The values stated in the table apply for 3- and 4-pole fixed mounted devices with an equal load distribution.
 On 4-pole devices the current in the N-conductor is equal to zero.
 The total resistive load is the measured value for a 3-pole or a 4-pole switch.
 The total heat dissipation is the value measured at I_n , 50/60Hz for a 3-pole or 4-pole switch.
 The heat dissipation can be calculated with the formula: $P = 3 \times R \times I^2$

LZM up to 1000 A with electronic release (3- and 4-pole)

LZM3	LZM4
R [μ Ohm]	R [μ Ohm]
100	37

Notes The values stated in the table apply for 3- and 4-pole devices with an equal load distribution.
 On 4-pole devices the current in the N-conductor is equal to zero.
 The total resistive load is the measured value for a 3-pole or a 4-pole switch (independent of I_n and the type of release).
 The heat dissipation can be calculated with the formula: $P = 3 \times R \times I^2$

				LZM1 160 A	$I_n^{1)}$ A	LZM2 300 A	$I_n^{1)}$
Terminal capacities							
Standard equipment				Box terminal		Screw terminal	
Accessories				Screw connection Tunnel terminal Connection on rear		Box terminal Tunnel terminal Connection on rear	
Rated power of coil							
Box terminal	Solid		mm ²	1 x (10 – 16) 2 x (6 – 16)	160	1 x (4 – 16) 2 x (4 – 16)	300
			mm ²	1 x (25 – 70) 2 x 25	160	1 x (25 – 185) 2 x (25 – 70)	300
Tunnel terminal	Stranded	Single hole	mm ²	1 x 16	160	1 x 16	300
			mm ²	1 x (25 – 95)	160	1 x (25 – 185)	300
			mm ²	–	–	–	–
			mm ²	–	–	–	–
		4-hole	mm ²	–	–	–	–
Bolt terminal and rear-side connection							
Direct on the switch	Solid		mm ²	1 x (10 – 16) 2 x (6 – 16)	160	1 x (4 – 16) 2 x (4 – 16)	300
			mm ²	1 x (25 – 70) ³⁾ 2 x 25	160	1 x (25 – 185) 2 x (25 – 70)	300
Module plate	Single hole	min.	mm ²	–	–	–	–
		max.	mm ²	–	–	–	–
Module plate	Double hole	min.	mm ²	–	–	–	–
		max.	mm ²	–	–	–	–
Connection width extension				mm ²	–	–	–
Al conductors, Al cable							
Tunnel terminal	Stranded	Single hole	mm ²	1 x 16	160	1 x 16	250
			mm ²	1 x (25 – 95)	160	1 x (25 – 185)2)	250
			mm ²	–	–	–	–
			mm ²	–	–	–	–
		4-hole	mm ²	–	–	–	–
Bolt terminal and rear-side connection							
Direct on the switch	Solid		mm ²	1 x (10 – 16) 2 x (10 – 16)	160	1 x (10 – 16) 2 x (10 – 16)	250
			mm ²	1 x (25 – 35) 2 x (25 – 35)	160	1 x (25 – 50) 2 x (25 – 50)	250
Module plate	Single hole	min.	mm ²	–	–	–	–
		max.	mm ²	–	–	–	–
Module plate Double hole				mm ²	–	–	–
Connection width extension							
Cu strip (number of segments x width x segment thickness)							
Box terminal		min.	mm	2 x 9 x 0.8	160	2 x 9 x 0.8	300
		max.	mm	9 x 9 x 0.8	160	10 x 16 x 0.8	300
Flat conductor terminal		min.	mm	–	–	–	–
		max.	mm	–	–	–	–
Module plate Single hole				mm	–	–	–
Bolt terminal and rear-side connection							
Flat copper strip, with holes		min.	mm	–	–	2 x 16 x 0.8	300
Flat copper strip, with holes		max.	mm	–	–	10 x 16 x 0.8	300
Connection width extension				mm ²	–	–	–
Copper busbar (width x thickness)							
Bolt terminal and rear-side connection							
Screw connection				M6		M8	
Direct on the switch		min.	mm	12 x 5	160	16 x 5	300
		max.	mm	16 x 5	160	20 x 5	300
Module plate	Single hole	min.	mm	–	–	–	–
		max.	mm	–	–	–	–
Module plate Double hole				mm	–	–	–
Connection width extension				mm	–	–	–
				mm	–	–	–

Notes

¹⁾ The rated currents I_n have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation. The engineering standards which apply in each case must be observed.

²⁾ depending on the cable manufacturer up to 240 mm² can be connected.

³⁾ depending on the cable manufacturer up to 95 mm² can be connected.

				LZM3 630 A	$I_n^{1)}$ A	LZM4 1000 A	$I_n^{1)}$
Terminal capacities							
Standard equipment				Screw terminal		Screw terminal	
Accessories				Box terminal Tunnel terminal Connection on rear		Tunnel terminal Connection on rear Strip terminal	
Rated power of coil							
Box terminal	Solid	mm ²		2 x 16	500	–	–
		Stranded		1 x (1 x (35 – 240) 2 x (25 – 120))	500	–	–
Tunnel terminal	Solid	mm ²					
		Stranded	Single hole	mm ²	1 x (25 – 185)	350	–
	Double hole fitting		mm ²	1 x (50 – 240) 2 x (50 – 240)	630 2 x 185	–	–
	4-hole		mm ²	–	–	4 x (50 – 240)	1000
Bolt terminal and rear-side connection							
Direct on the switch	Solid	mm ²		1 x 16 2 x 16	630 2 x 185		
		Stranded		1 x (25 – 240) 2 x (25 – 240)	630 2 x 185	1 x (120 ... 185) 4 x (50 ... 185)	1000
Module plate	Single hole	min.	mm ²	–	–	1 x (120 – 300)	1000
		max.	mm ²	–	–	2 x (95 – 300)	1000
Module plate	Double hole	min.	mm ²	–	–	2 x (95 – 185)	1000
		max.	mm ²	–	–	4 x (35 – 185)	1000
Connection width extension		mm ²		2 x 300	630 2 x 185	4 x 300 6 x (95 – 240)	1000 4 x 240
Al conductors, Al cable							
Tunnel terminal	Solid	mm ²		1 x 16	350	–	–
		Stranded	Single hole	mm ²	1 x (25 – 185) ²⁾	350	–
	Double hole fitting		mm ²	1 x (50 – 240) 2 x (50 – 240)	630	–	–
	4-hole		mm ²	–	–	4 x (50 – 240)	1000
Bolt terminal and rear-side connection							
Direct on the switch	Solid	mm ²		1 x 16 2 x (10 – 16)	400	–	–
		Stranded		1 x (25 – 120) 2 x (25 – 120)	400	–	–
Module plate	Single hole	min.	mm ²	–	–	1 x (185 – 240)	pleases inquire
		max.	mm ²	–	–	2 x (70 – 185)	pleases inquire
Module plate	Double hole	mm ²		–	–	4 x 50	–
Connection width extension		mm ²			2 x 240 6 x (70 – 240)		pleases inquire
Cu strip (number of segments x width x segment thickness)							
Box terminal	min.		mm	6 x 16 x 0.8	630	–	–
	max.		mm	10 x 24 x 1.0 + 5 x 24 x 1.0 (2 x) 8 x 24 x 1.0	630	–	–
Flat conductor terminal	min.		mm	–	–	6 x 16 x 0.8	1000
	max.		mm	–	–	(2 x) 10 x 32 x 1.0	1000
Module plate	Single hole		mm	–	–	(2 x) 10 x 50 x 1.0	1000 (2 x) 10 x 40 x 1.0
Bolt terminal and rear-side connection							
Flat copper strip, with holes		min.	mm	6 x 16 x 0.8	630	(2 x) 10 x 50 x 1.0	1000
Flat copper strip, with holes		max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0	630	(2 x) 10 x 50 x 1.0	1000
Connection width extension		mm ²		(2 x) 10 x 50 x 1.0	630	(2 x) 10 x 80 x 1.0	1000 2 x (10 x 50 x 1.0)
Copper busbar (width x thickness)							
Bolt terminal and rear-side connection							
Screw connection				M10		M10	
Direct on the switch	min.		mm	20 x 5	630	25 x 5	1000
	max.		mm	30 x 10 +30 x 5	630	2 x (50 x 10) 2 x (80 x 10)	1000
Module plate	Single hole	min.	mm	–	–	25 x 5	1000
		max.	mm	–	–	2 x (50 x 10)	2 x (40 x 10)
Module plate	Double hole	mm		–	–	2 x (50 x 10)	1000
Connection width extension		min.	mm	–	630	60 x 10	1000
		max.	mm	2 x (10 x 50)	10 x 40	2 x (80 x 10)	2 x (50 x 10)

Notes

¹⁾ The rated currents I_n have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation. The engineering standards which apply in each case must be observed.

²⁾ depending on the cable manufacturer up to 240 mm² can be connected.

³⁾ depending on the cable manufacturer up to 95 mm² can be connected.

at AC = 50/60 Hz

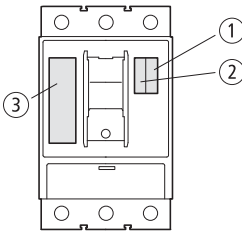
M22-K...

NZM-CK...

Auxiliary contacts

			M22-K...	NZM-CK...
Rated operational voltage				
AC	U _e	V AC	500	230
DC	U _e	V DC	220	220
Conventional thermal current				
	I _{th} = I _e	A	4	4
Rated operational current				
AC-15	115 V	I _e A	4	4
	230 V	I _e A	4	4
	400 V	I _e A	2	–
	500 V	I _e A	1	–
DC-13	24 V	I _e A	3	3
	42 V	I _e A	1.7	1
	60 V	I _e A	1.2	0.8
	110 V	I _e A	0.8	0.5
	220 V	I _e A	0.3	0.2
Short-circuit protection				
max. fuse		A gG/gL	10	10
Max. miniature circuit-breaker		A	PKZM0-10/FAZ-B6	FAZ-B6/B1
Terminal capacities				
Solid or flexible conductor with ferrule		mm ²	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.5 – 1.5) 2 x (0.5 – 0.75)
		AWG	1 x (18 – 14) 2 x (18 – 14)	1 x (18 – 14) 2 x (18 – 14)

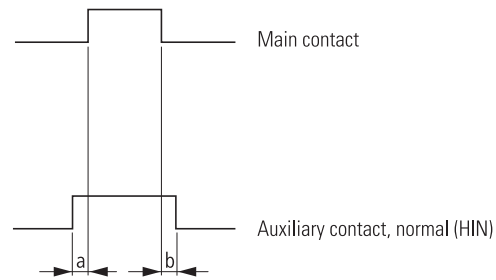
Maximum equipment and position of the internal accessories

	③	②	①	
	-XHIV(2S) or -XA or -XU	HIA	HIN ¹⁾	Contacts per slot with HIA and HIN
	LZM1, LN1	1	1	1 N/O
	LZM2, LN2	1	1	1 N/C
	LZM3, LN3	1	1	2 N/O
	LZM4, LN4	1	2	2 N/C

N/O = normally open contact
N/C = normally closed contact

¹⁾ On combination with remote operator NZM-XR..., the right slot for standard auxiliary contacts HIN can be equipped only with single contacts.

Time differences ON-OFF



	Time difference a (ms)		Motor operators		Time difference b (ms)		Motor operators			
	Manual operation		HIN		Manual operation		HIN			
	K10	K01	K10	K01	K10	K01	K10	K01		
LZM1	0	2.5	-	-	0	2.5	-	-		
LZM2	3.5	6.5	2.5	4.5	3	4.5	3	4		
LZM3	4	8	2	4	3.5	8	3	6.5		
LZM4	7	11	on request	on request	12	15	on request	on request		

xEnergy

NZM...-XU, NZM...-XA...

			NZM1(2/3)-XU...	NZM4-XU...		
Undervoltage release						
Rated control voltage						
Alternating voltage at 50/60 Hz	U_s	V AC	24...440	24...440		
DC	U_s	V DC	24	24		
Operating range						
Drop-out voltage		$x U_s$	0.35 – 0.7	0.35 – 0.7		
Pick-up voltage		$x U_s$	0.85 – 1.1	0.85 – 1.1		
Power consumption						
AC						
Pick-up AC		VA	1.5	3.6		
Sealing AC		VA	1.5	3.6		
DC						
Pick-up DC		W	0.8	2.5		
Sealing DC		W	0.8	2.5		
Max. opening delay (response time until the main circuits open)		ms	19	23		
Minimum command time		ms	10 – 15	10 ... 15		
Terminal capacities						
Solid or flexible conductor with ferrule		mm ²	1 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)	2 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)		
		AWG	1 x (18 ... 14) 2 x (18 ... 14)	1 x (18 ... 14) 2 x (18 ... 14)		
			NZM1(2/3)-XA...	NZM4-XA...		
Shunt release						
Rated control voltage						
AC	U_s	V AC	24...440	24...440		
DC	U_s	V DC	24	24		
Frequency range		Hz	0 – 400	0 – 400		
Operating range						
AC		$x U_s$	0.7...1.1	0.7...1.1		
DC		$x U_s$	0.7...1.1	0.7...1.1		
Power consumption						
Pick-up AC/DC		VA/W	2.5	2.5		
Sealing AC/DC		VA/W	2.5	2.5		
Max. opening delay (response time until the main circuits open)		ms	20	22		
Duty factor		ms	∞	∞		
Minimum command time		ms	10 ... 15	10 ... 15		
Terminal capacities						
Solid or flexible conductor with ferrule		mm ²	21 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)	1 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)		
		AWG	1 x (18 ... 14) 2 x (18 ... 14)	1 x (18 ... 14) 2 x (18 ... 14)		

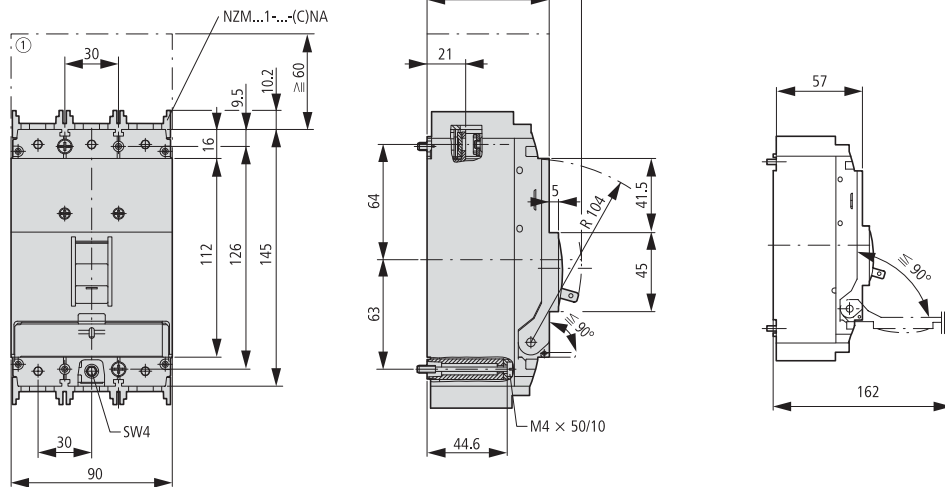
			NZM2-XR...	NZM3-XR...	NZM4-XR...	
Remote operator						
Rated control voltage						
AC	U_s	V AC	208...440	208...440	208...440	
DC	U_s	V DC	24	24	24	
Operating range						
AC	U_s		0.85...1.1	0.85...1.1	0.85...1.1	
DC	U_s		0.85...1.1	0.85...1.1	0.85...1.1	
Motor rating						
AC	208 ... 240 V AC	VA	350	350	350	
	380 ... 440 V AC	VA	350	350	350	
DC	24 ... 30 V DC	W	250	250	250	
Rated power of coil						
AC	208 ... 240 V AC	VA	270	270	270	
	380 ... 440 V AC	VA	270	270	270	
DC	24 ... 30 V DC	W	210	210	210	
Total make time						
		ms	60	80	100	
Total opening delay						
		ms	300	1000	3000	
Minimum signal duration						
	with switch on	ms	30	30	30	
	with switch off	ms	150	250	500	
Lifespan, mechanical						
		Operations	20000	15000	10000	
Maximum operating frequency						
		Ops./h	120	60	20	
Terminal capacities						
	Solid or flexible conductor with ferrule	mm ²	0.75 ... 2.5	0.75 ... 2.5	0.75 ... 2.5	
		AWG	18 ... 14	18 ... 14	18 ... 14	

xEnergy

Circuit-breaker

3 pole

LZMB1
LZMC1
LZMN1
LN1

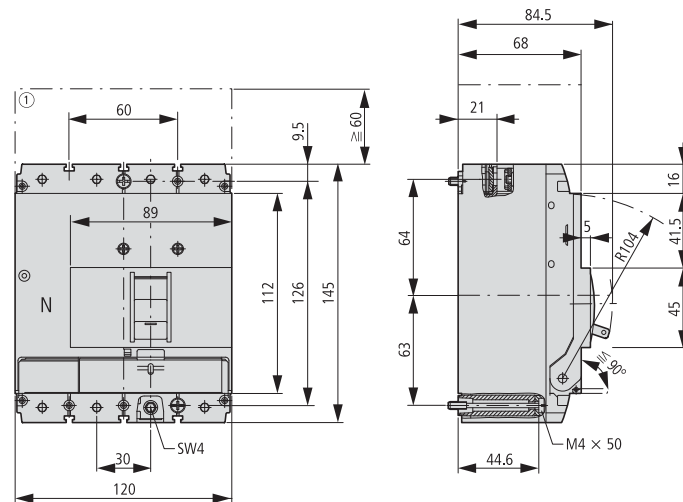


① Blow out area, minimum clearance to other parts > 60 mm

Circuit-breaker

4 pole

LZMB1-4
LZMC1-4
LZMN1-4
LN1-4



① Blow out area, minimum clearance to other parts > 60 mm

Covers

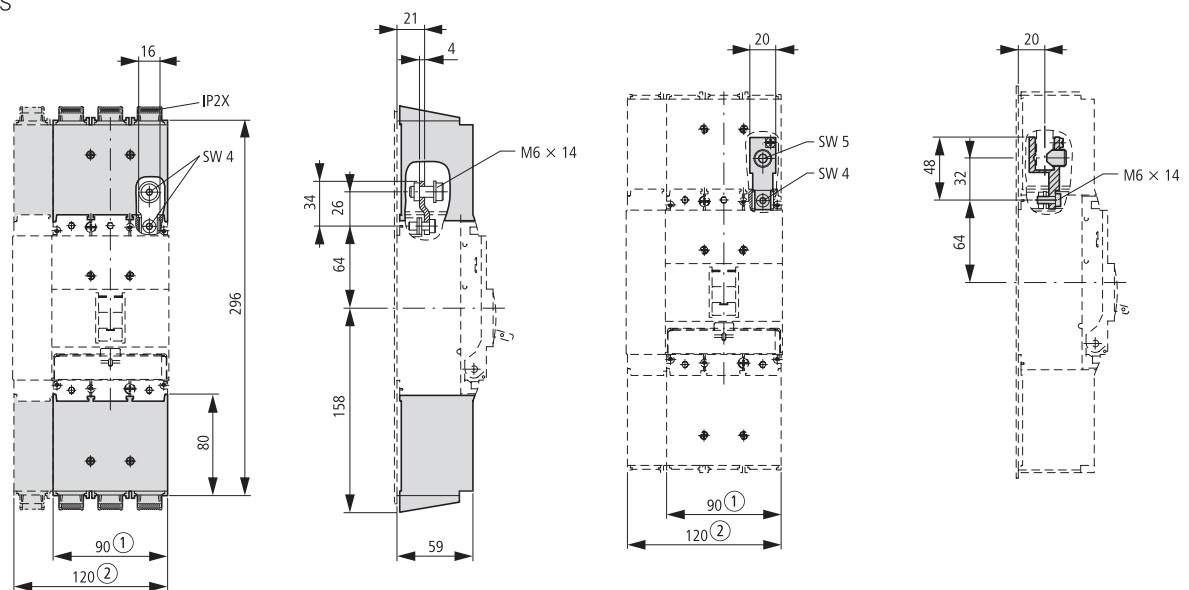
NZM1(-4)-XKSA

Screws connection

NZM1(-4)-XKS

Tunnel terminal

NZM1(-4)-XKA



① 3 pole
② 4 pole

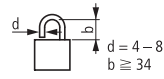
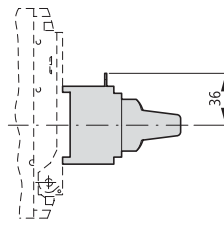
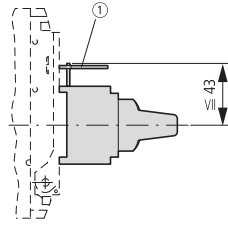
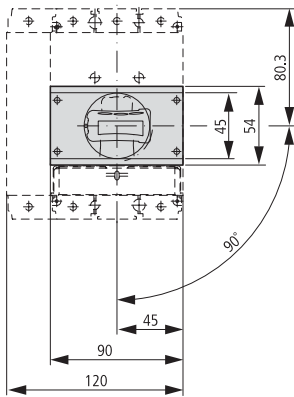
① 3 pole
② 4 pole

Rotary drive

Rotary handle on circuit-breaker

NZM1-XDV
NZM1-XDVR

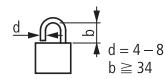
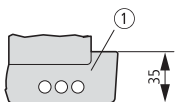
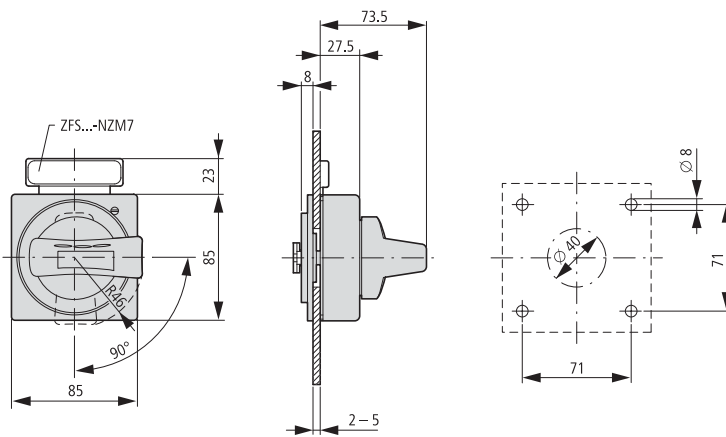
NZM1-XDTV



① Up to 3 padlocks

Door coupling rotary handle

NZM1-XTVD(R)

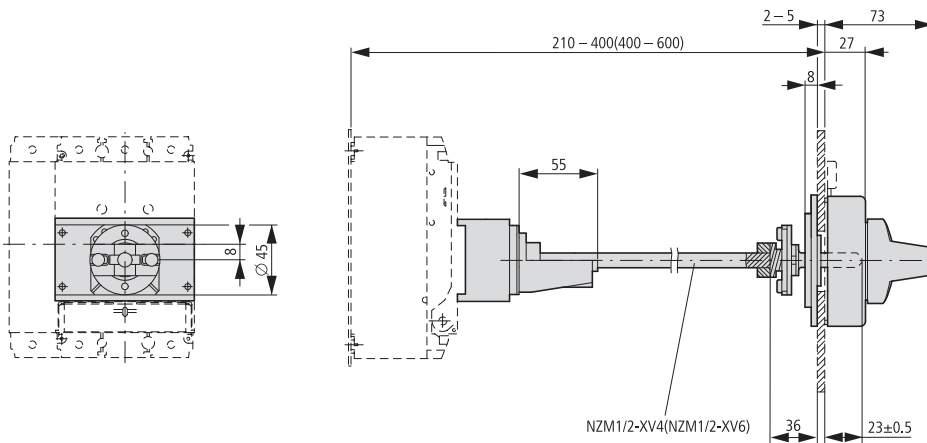


① Up to 3 padlocks

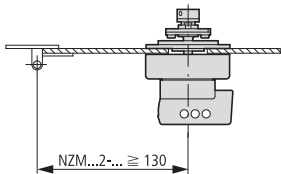
xEnergy

Door coupling rotary handle with extension shaft

NZM1-XTVD(V)(R)
NZM1/2-XV4(6)



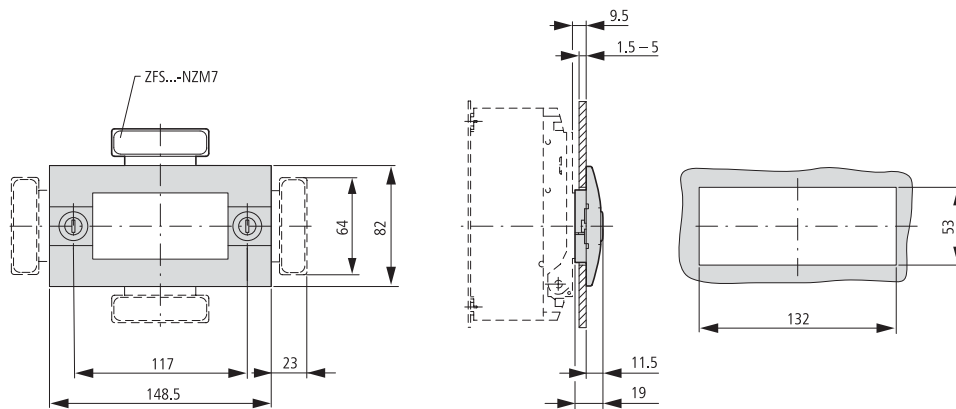
Minimum door coupling rotary handle clearance from door pivot point



Insulating surrounds

NZM1-XBR

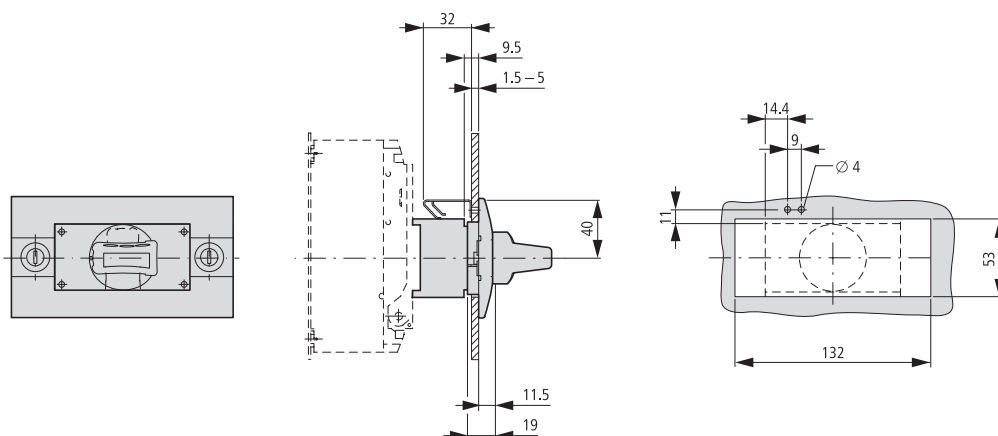
⓪ Mounting aperture



Rotary handle on switch with door interlock

NZM1-XDTV(R)

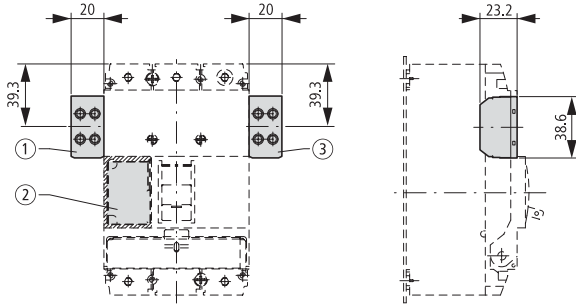
⓪ Mounting aperture



Dimensions

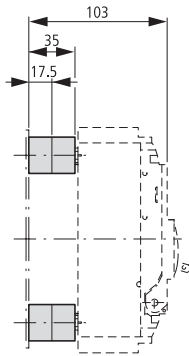
NZM1...HIV, NZM1-XMV

Undervoltage release
Shunt release
Early-make auxiliary contacts

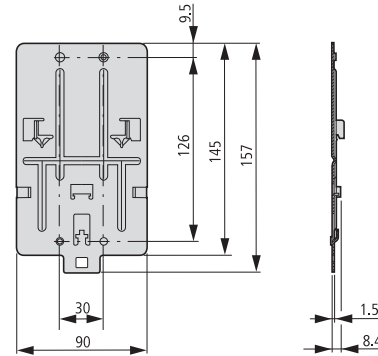


- ① NZM1-XA(HIV)
NZM1-XU(HIV)(20)
NZM1-XHIV
- ② NZM1-XA(HIV)(L)
NZM1-XU(V)(HIV)(L)(20)
NZM1-XHIV(L)
- ③ NZM1-XHIVR

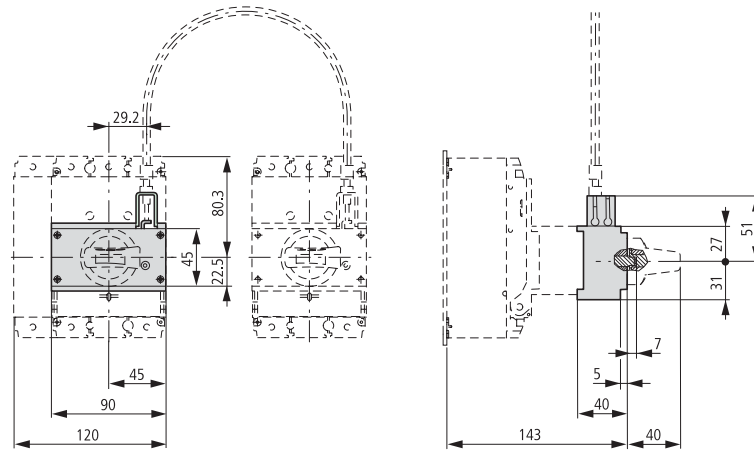
Spacers
NZM1/2-XAB



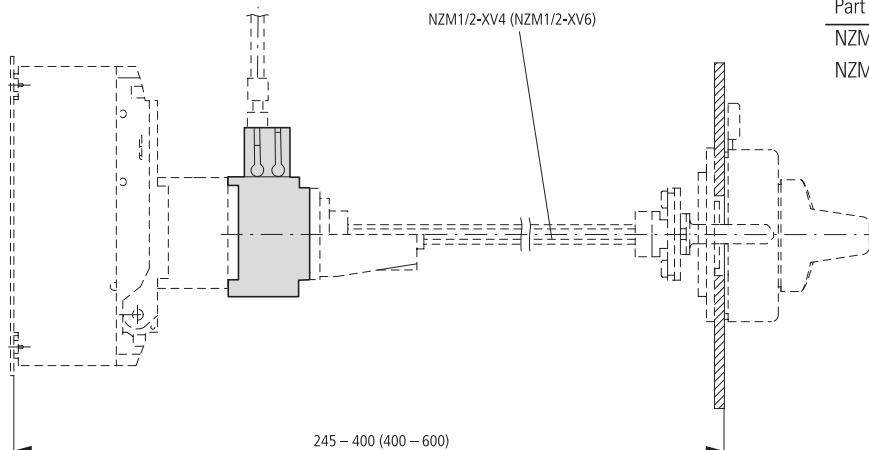
Clip plate
NZM1-XC35



Mechanical interlock
NZM1-XMV + NZM1-XDV(R)



NZM1-XMV + NZM1-XTVD(V)(R)



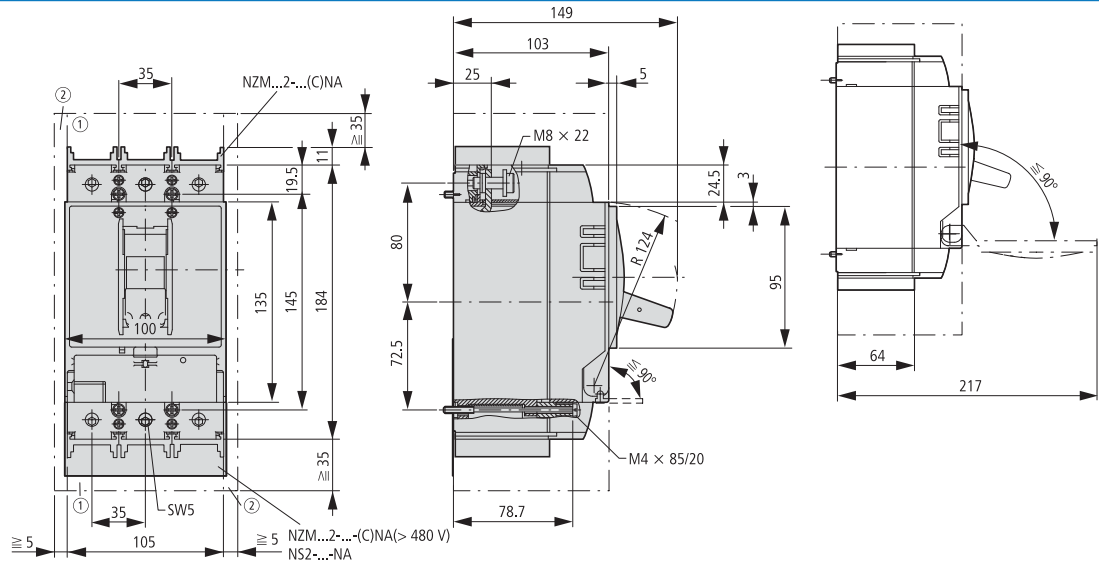
Part no.	x
NZM1/2-XV4	245 - 400
NZM1/2-XV6	400 - 600

xEnergy

Circuit-breaker

3 pole

LZMB2
LZMC2
LZMN2
LN2

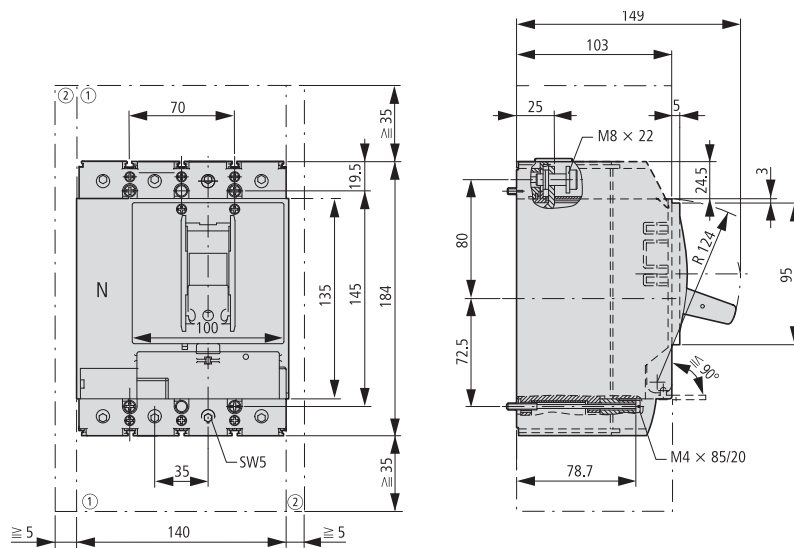


- ① Blow out area, minimum distance to other parts ≥ 35 mm
- ② Minimum distance to adjacent parts ≥ 5 mm

Circuit-breaker

4 pole

LZMB2-4
LZMC2-4
LZMN2-4
LN2-4



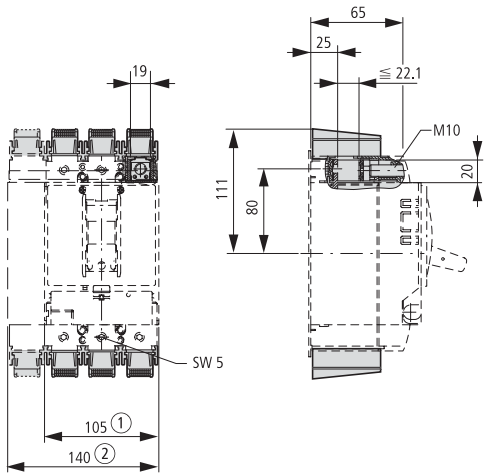
- ① Blow out area, minimum distance to other parts ≥ 35 mm
- ② Minimum distance to adjacent parts ≥ 5 mm

Dimensions

NZM2...-XK..., Rotary drive

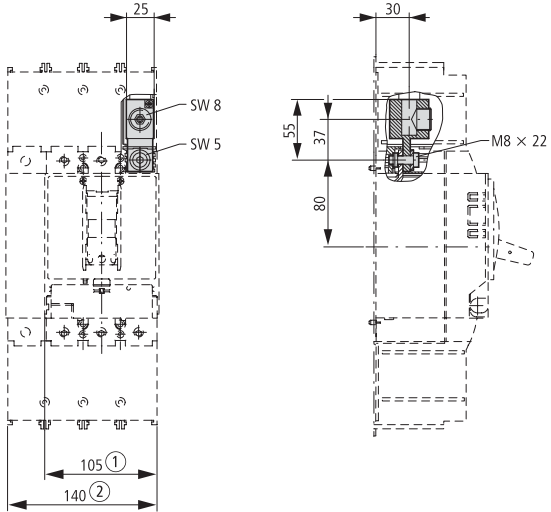
Box terminal

(+)NZM2(-4)-...-XKC(O)(U)



Tunnel terminal

NZM2(-4)-XKA



- ① 3 pole
- ② 4 pole

Covers

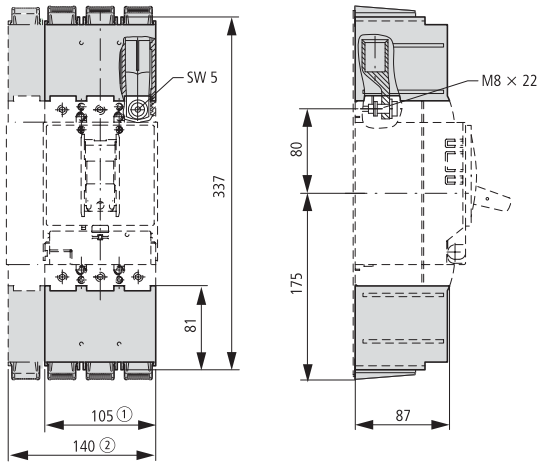
NZM2(-4)-XKSA

Cable lug

NZM2-XKS185

IP2X protection against contact with a finger for shroud

NZM2(-4)-XIPA

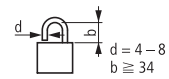
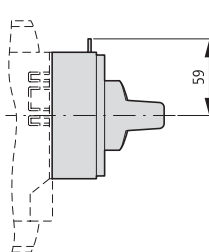
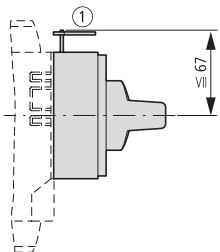
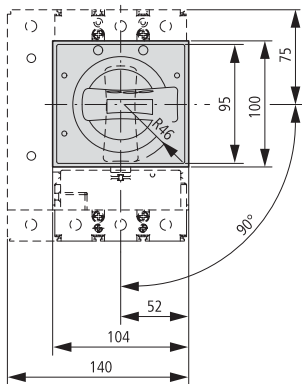


Rotary drive

Rotary handle on circuit-breaker

NZM2-XDV

NZM2-XDTV



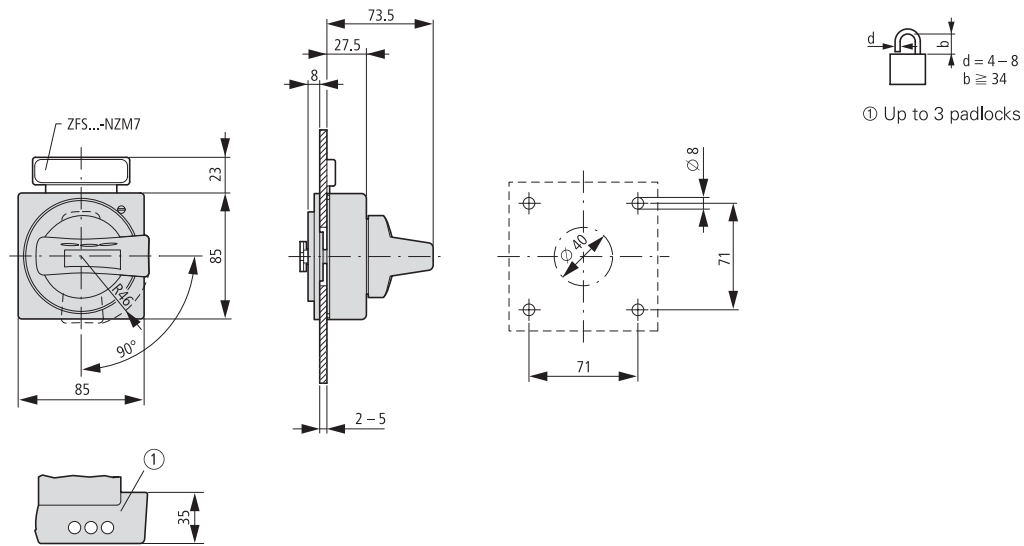
① Up to 3 padlocks

NZM2-XTV..., NZM1/2-XV4(6)

xEnergy

Door coupling rotary handle

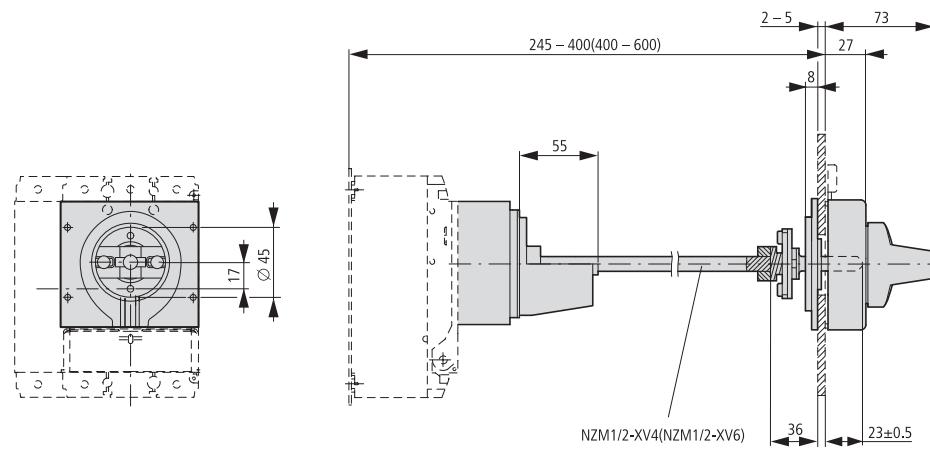
NZM2-XTVD(V)(R)...



Door coupling rotary handle with extension shaft

NZM2-XTVD(V)(R)

NZM1/2-XV4(6)

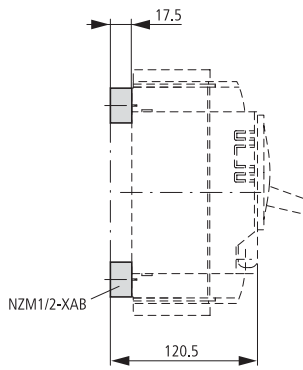


Dimensions

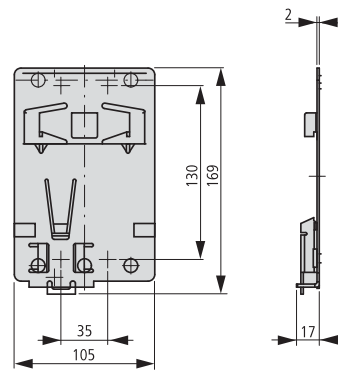
NZM...-XAB, NZM2-XBR, NZM2-XDTV...

Spacers

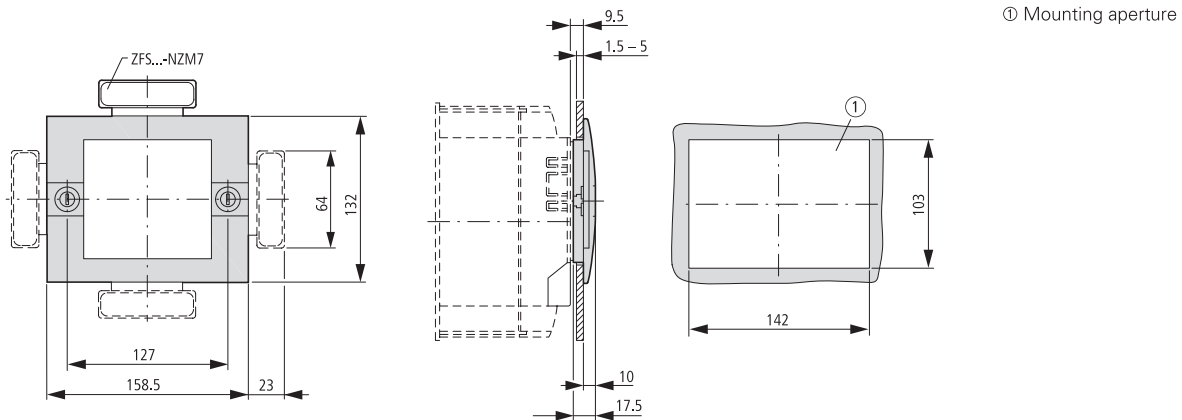
NZM1/2-XAB

**Clip plate**

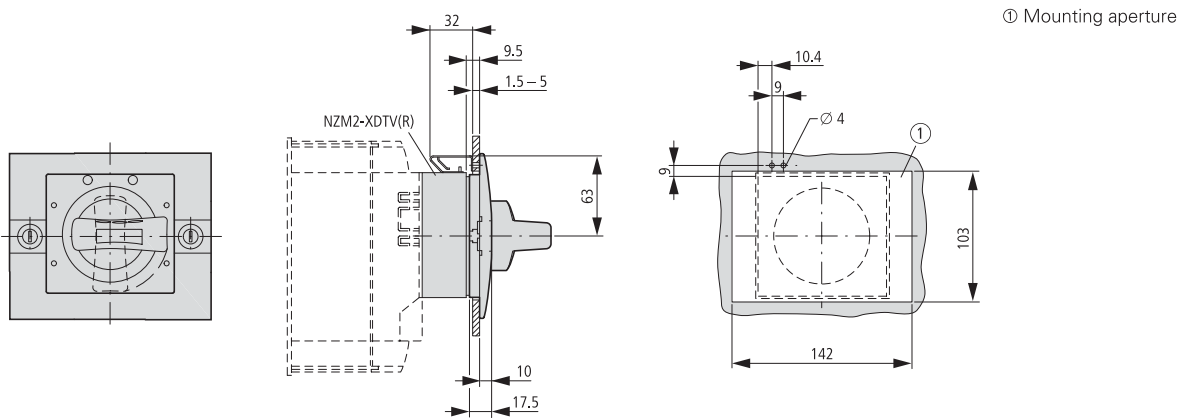
NZM2-XC75

**Insulating surrounds**

NZM2-XBR

**Rotary handle on switch with door interlock**

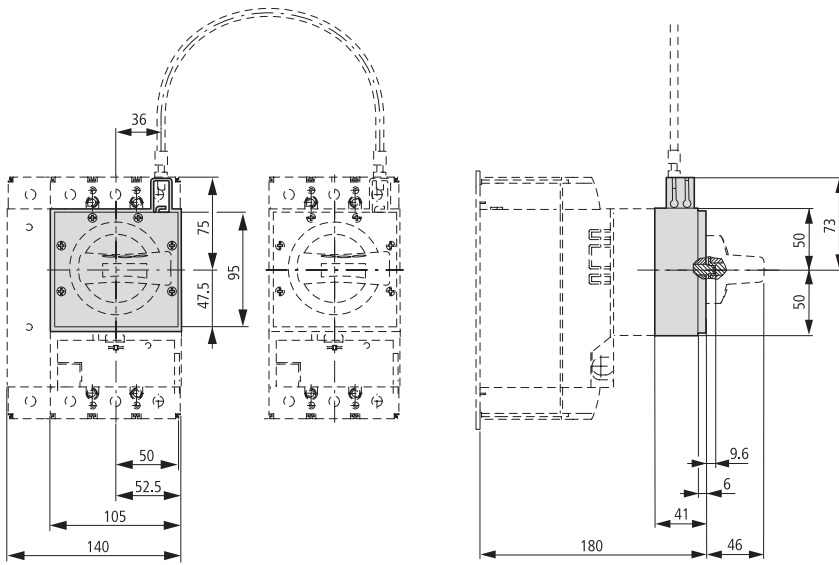
NZM2-XDTV(R)



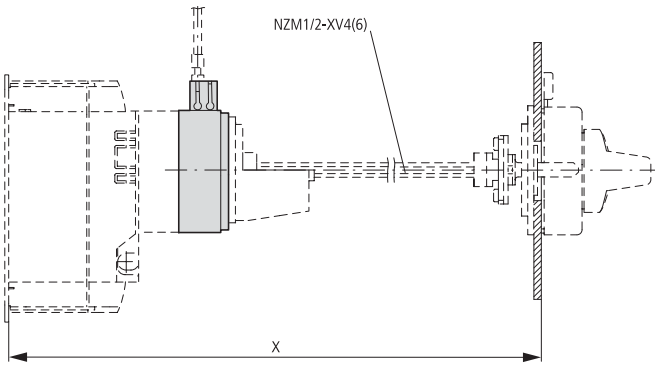
xEnergy

Mechanical interlock

NZM2-XMV + NZM2-XD

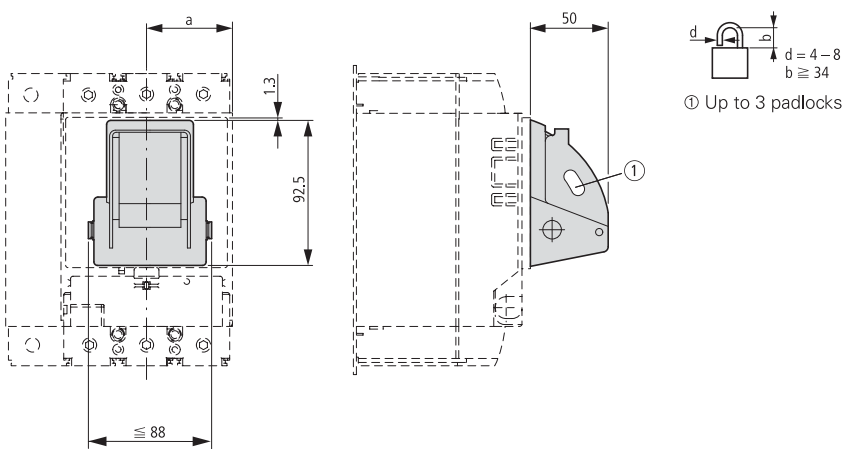


NZM2-XMV + NZM2-XTVD(V)(R)



Toggle lever locking device

NZM2/3-XKAV



Part no.	a
LZM2	52.5
LZM3	70

72 Size 2: accessories

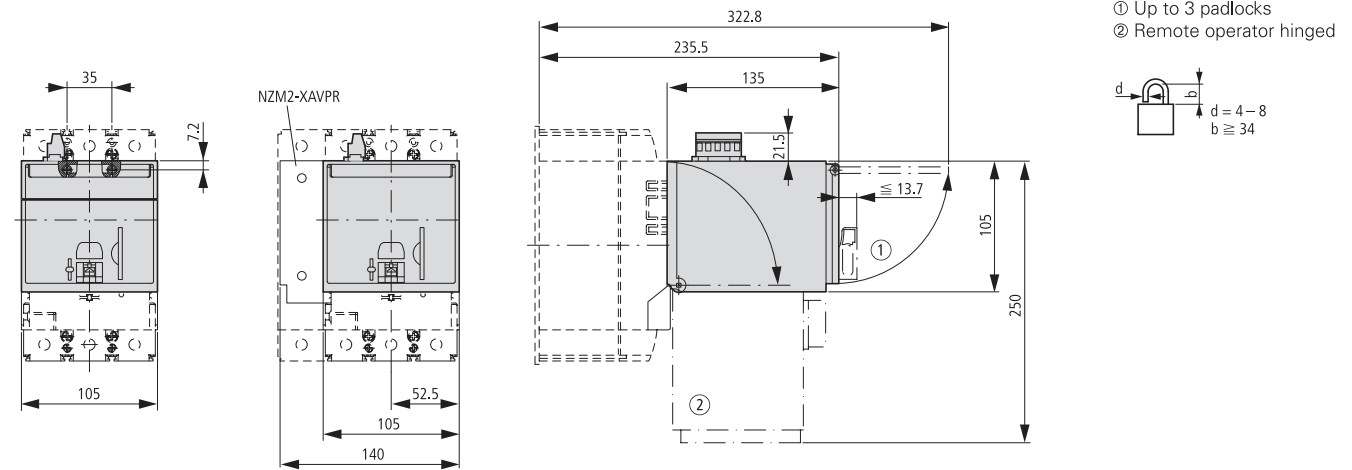
Dimensions

NZM2-XR..., -XAD...

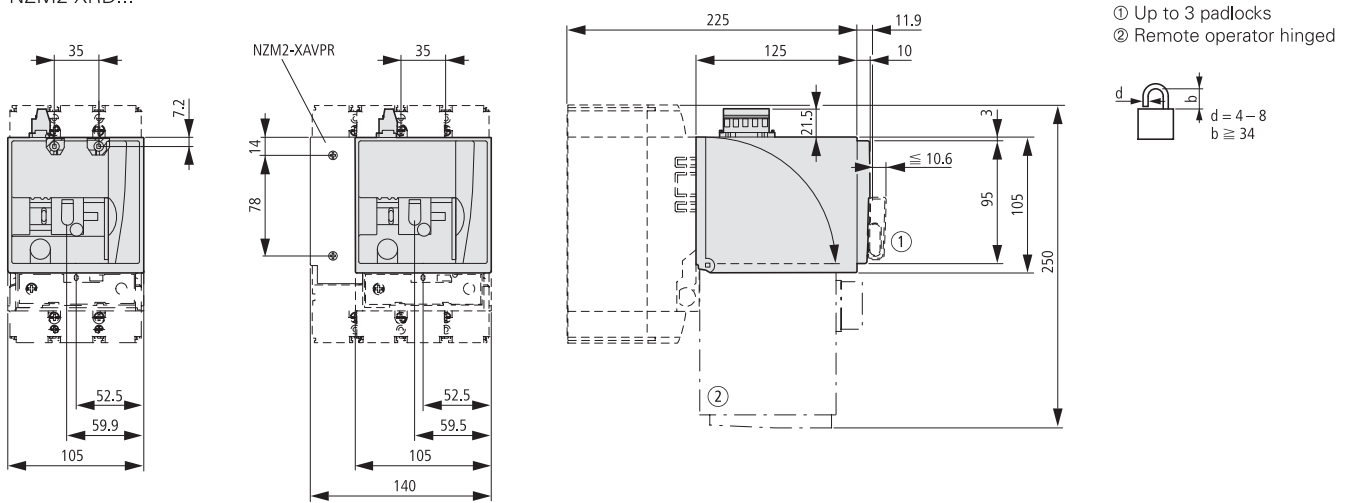
xEnergy

Remote operator

NZM2-XR...

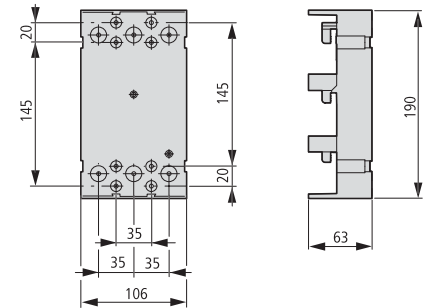


NZM2-XRD...



Component adapter

NZM2-XAD250

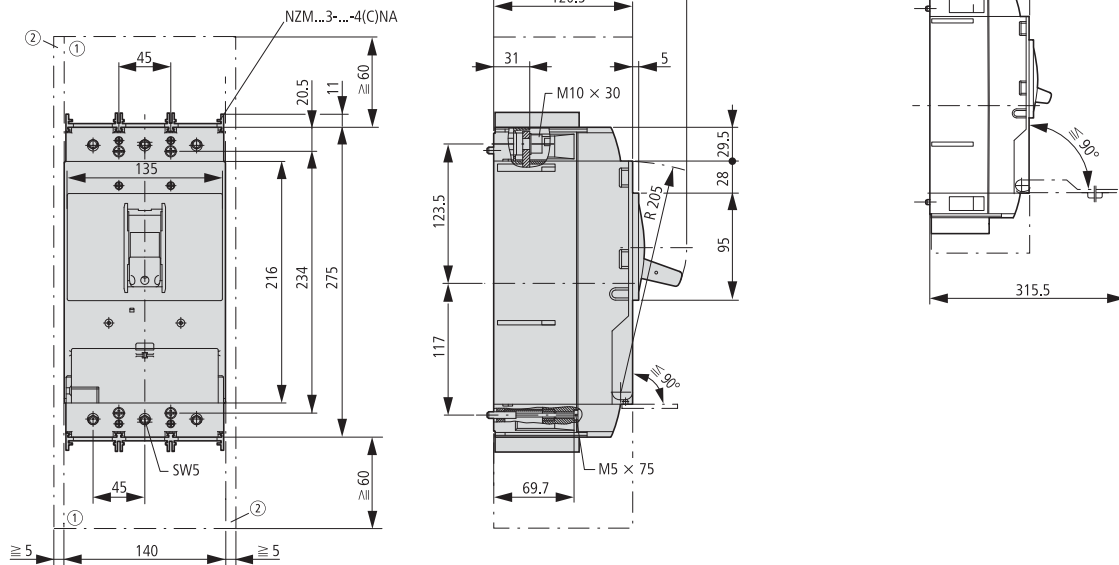


xEnergy

Circuit-breaker

3 pole

LZMC3
LZMN3
LN3

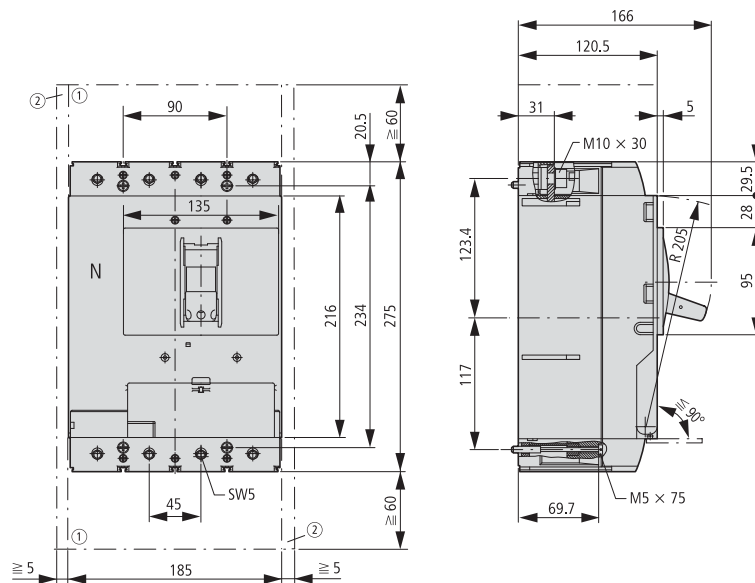


- ① Blow-out space, minimum distance to other parts ≥ 60 mm
- ② Minimum distance to adjacent parts ≥ 5 mm

Circuit-breaker

4 pole

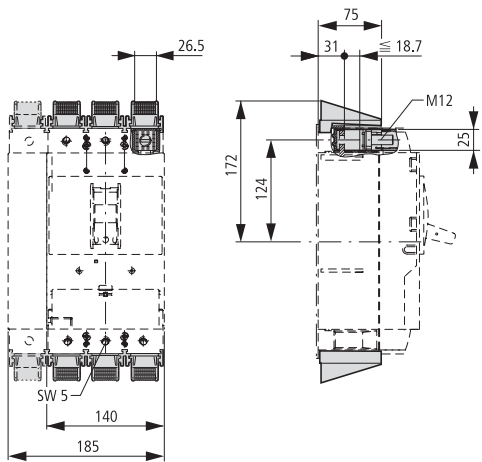
LZMC3-4
LZMN3-4
LN3-4



- ① Blow out area, minimum distance to other parts ≥ 35 mm
- ② Minimum distance to adjacent parts ≥ 5 mm

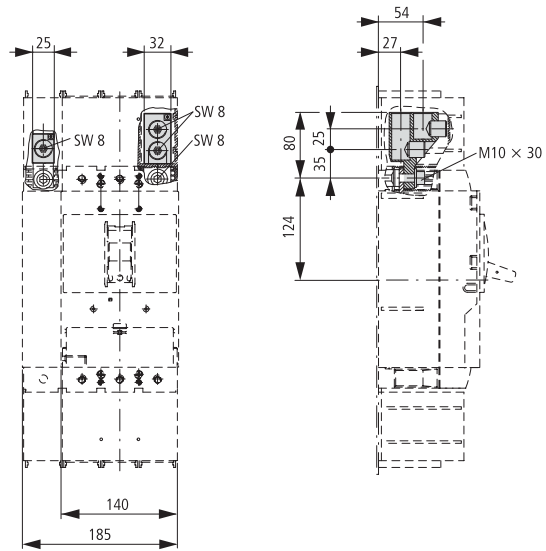
Box terminal

(+)NZM3(-4)-XKC(O)(U)



Tunnel terminal

NZM3(-4)-XKA1(2)

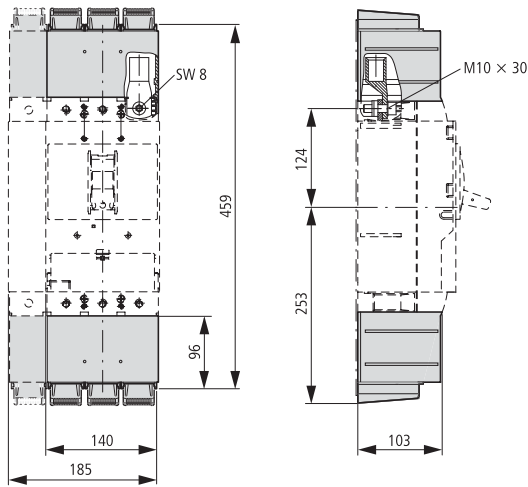


Covers

NZM3(-4)-XKSA

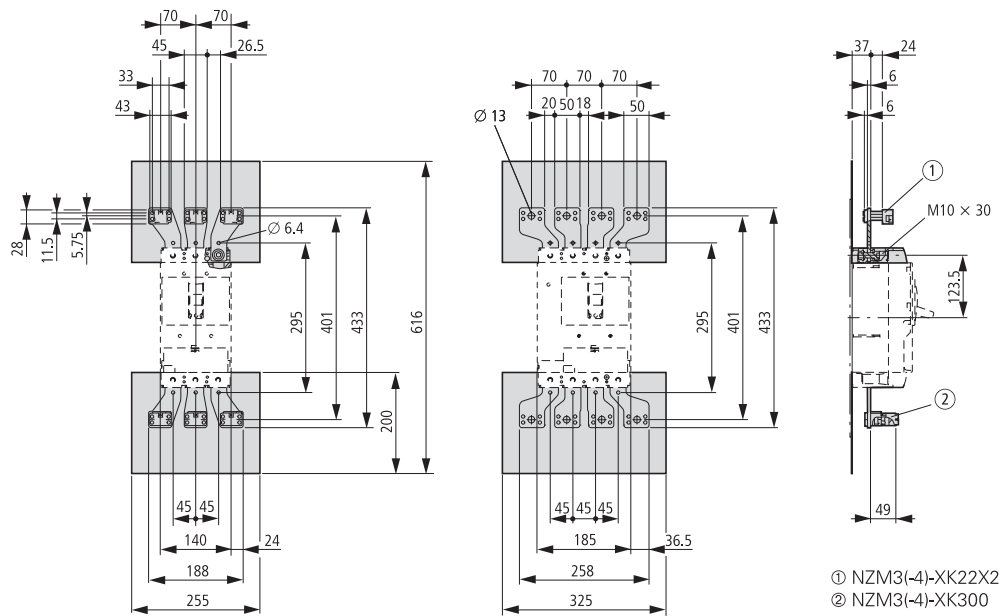
Cable lug

NZM3-XKS185



Connection width extension

NZM3(-4)-XKV70

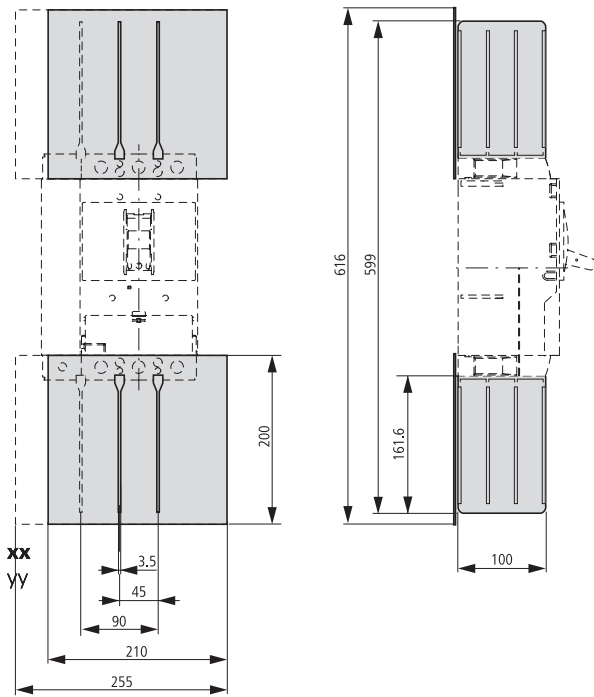


- ① NZM3(-4)-XK22X21
- ② NZM3(-4)-XK300

xEnergy

Phase isolators

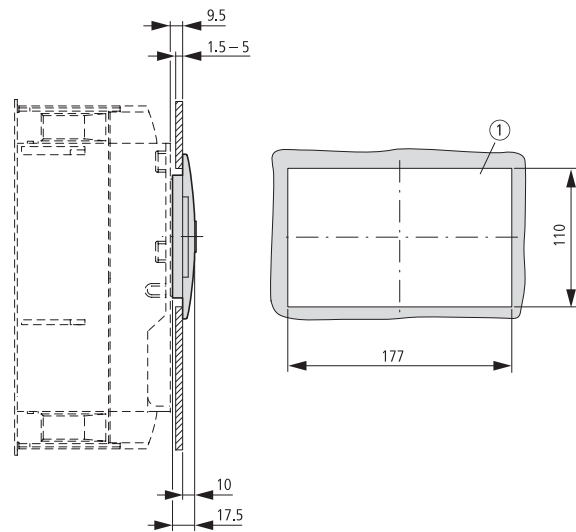
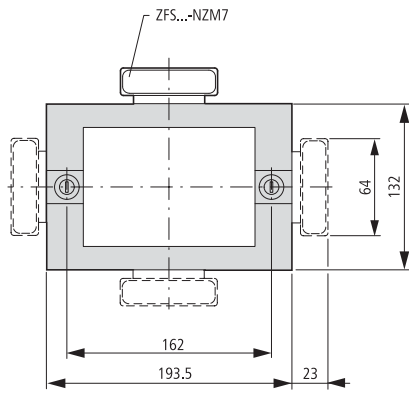
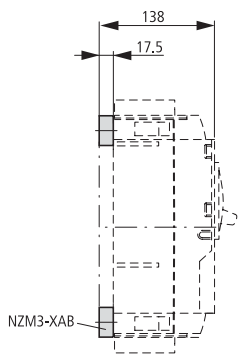
NZM3-4-XKP



Spacers
NZM3-XAB

Insulating surrounds
NZM3-XBR

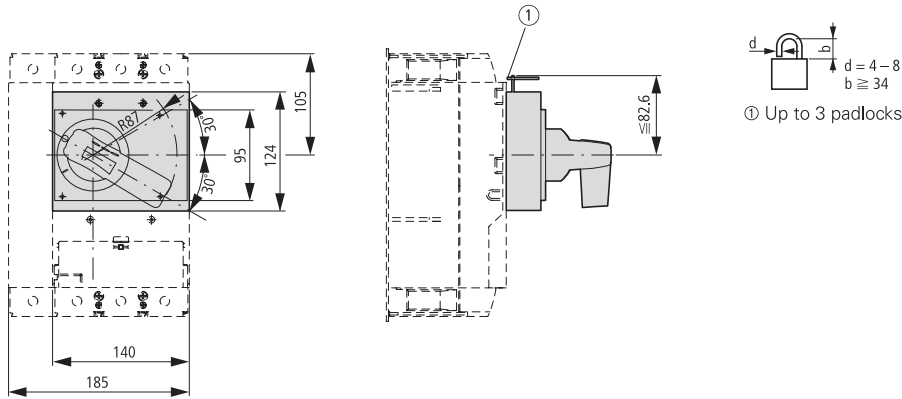
① Mounting aperture



Rotary drive

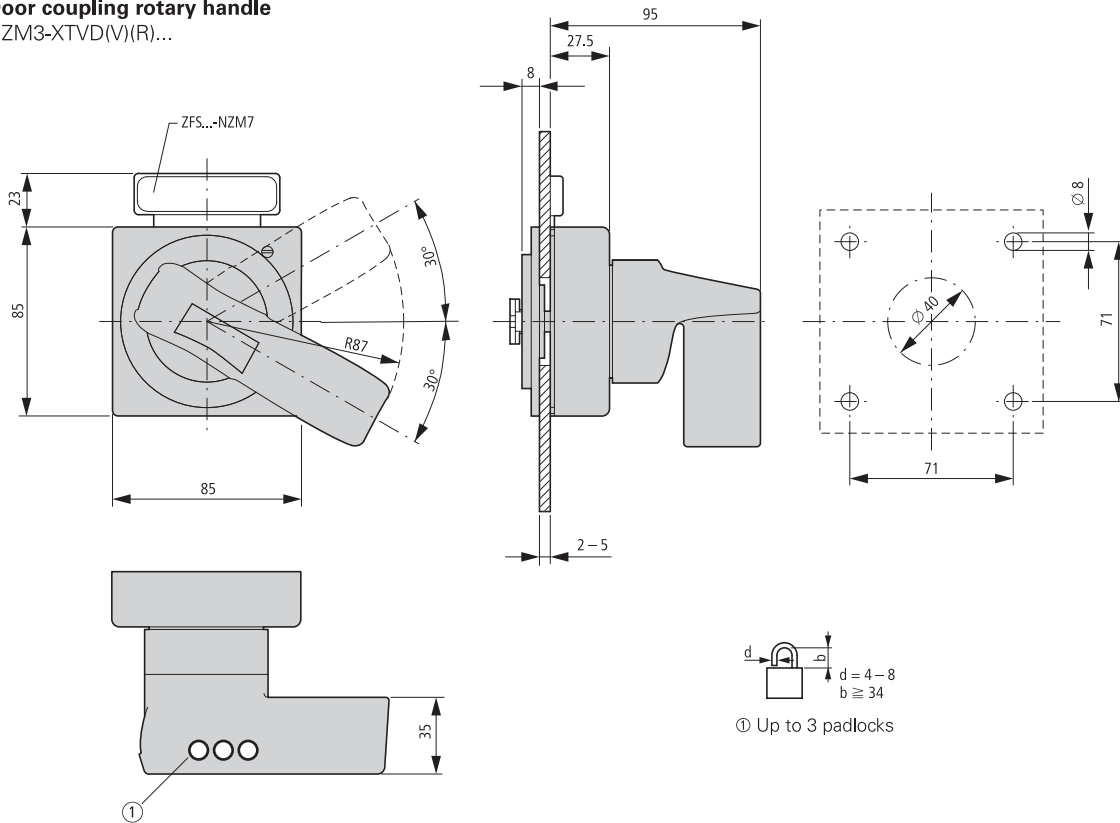
Rotary handle on circuit-breaker

NZM3-XDV



Door coupling rotary handle

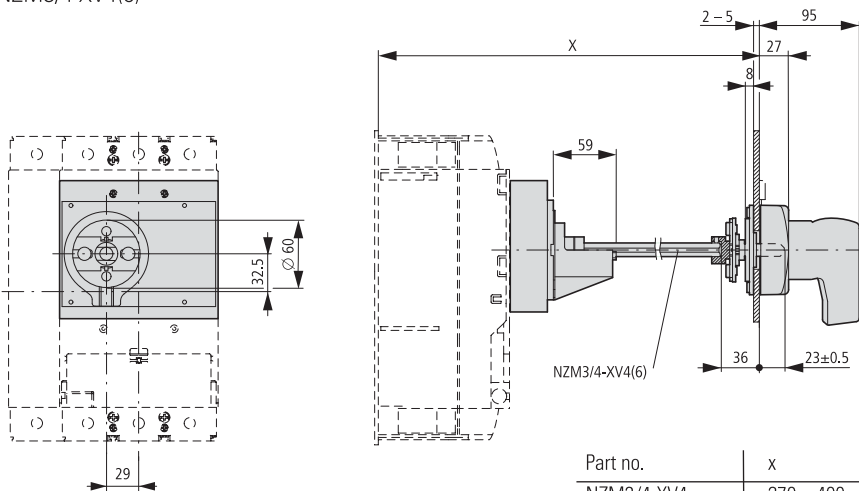
NZM3-XTVD(V)(R)...



Door coupling rotary handle with extension shaft

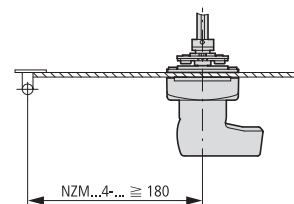
NZM3-XTVD(V)(R)

NZM3/4-XV4(6)



Part no.	x
NZM3/4-XV4	270 – 400
NZM3/4-XV6	400 – 600

Minimum door coupling rotary handle clearance from door pivot point

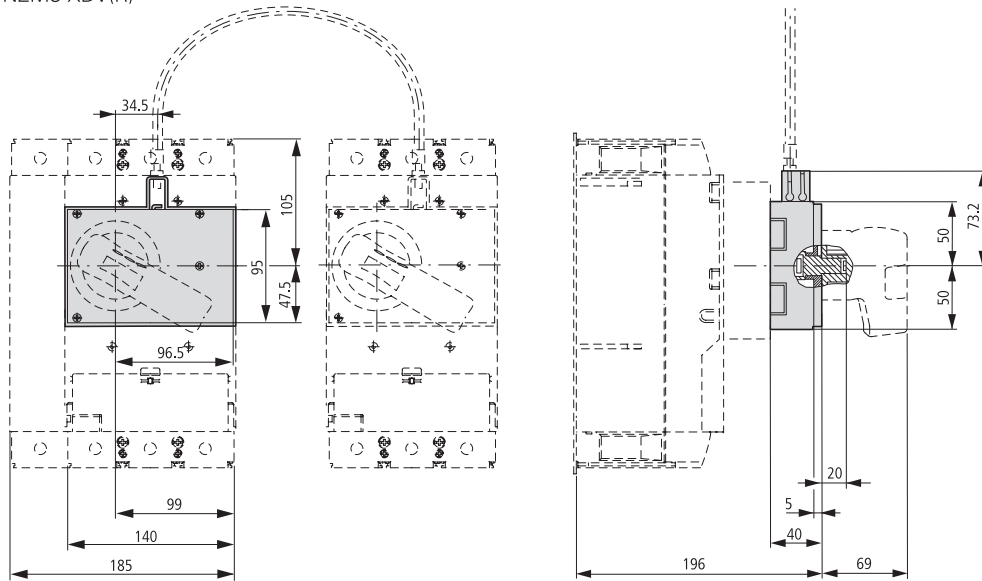


xEnergy

NZM3-XMV, NZM3-XAD..., NZM3-XR...

Mechanical interlock

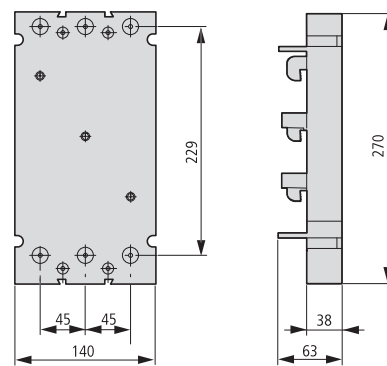
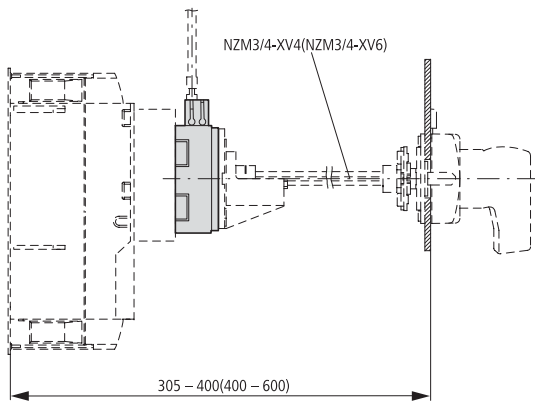
NZM3-XMV + NZM3-XDV(R)



NZM3-XMV + NZM3-XTVD(V)(R)

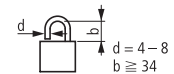
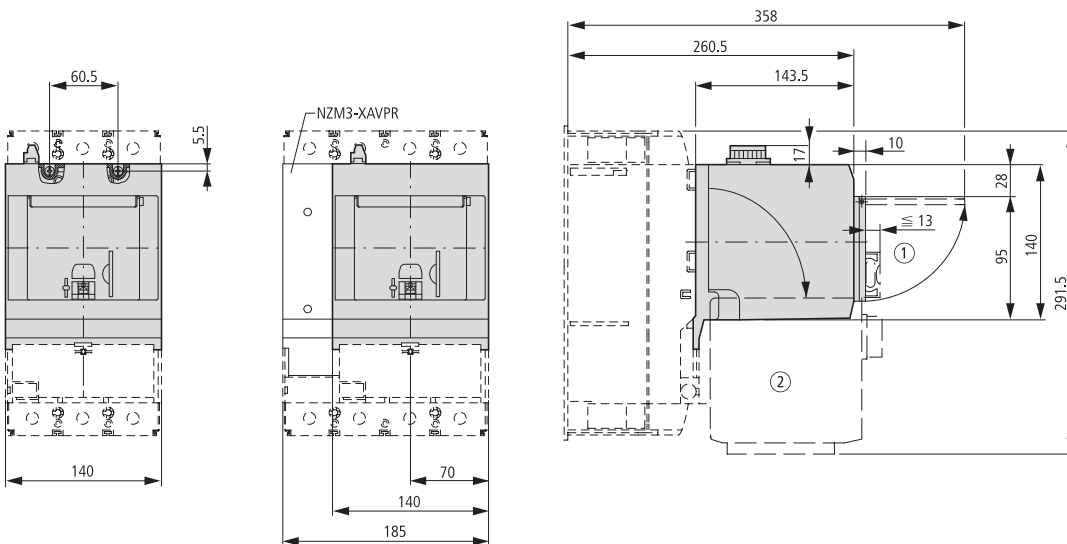
Component adapter

NZM3-XAD550

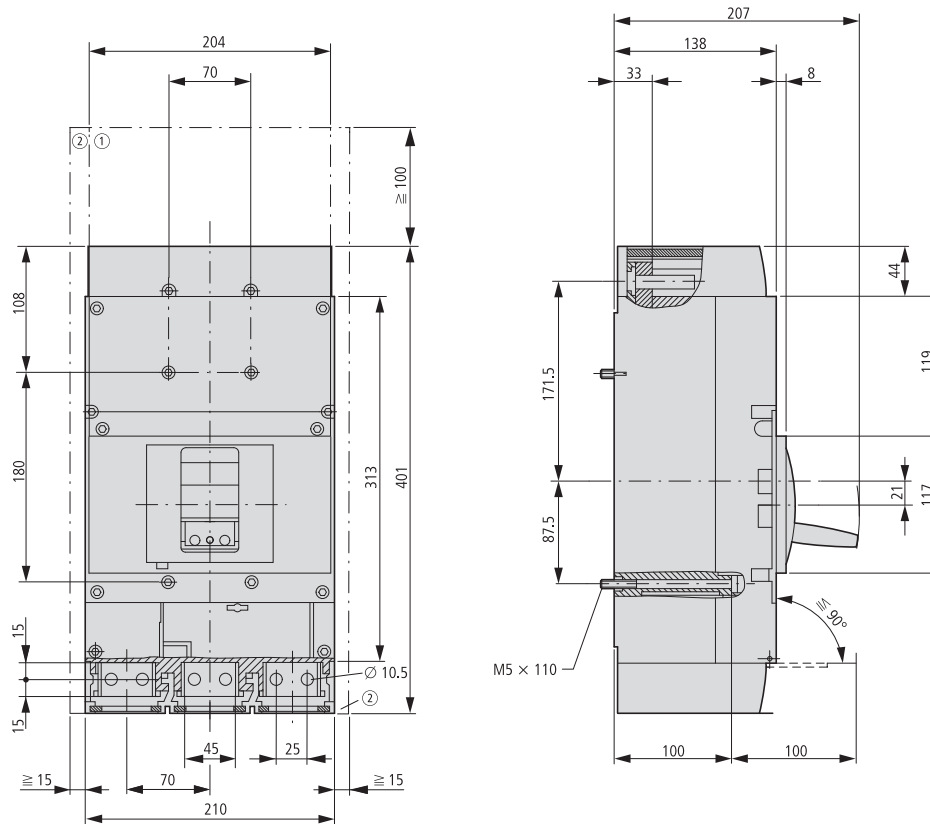


Remote operator

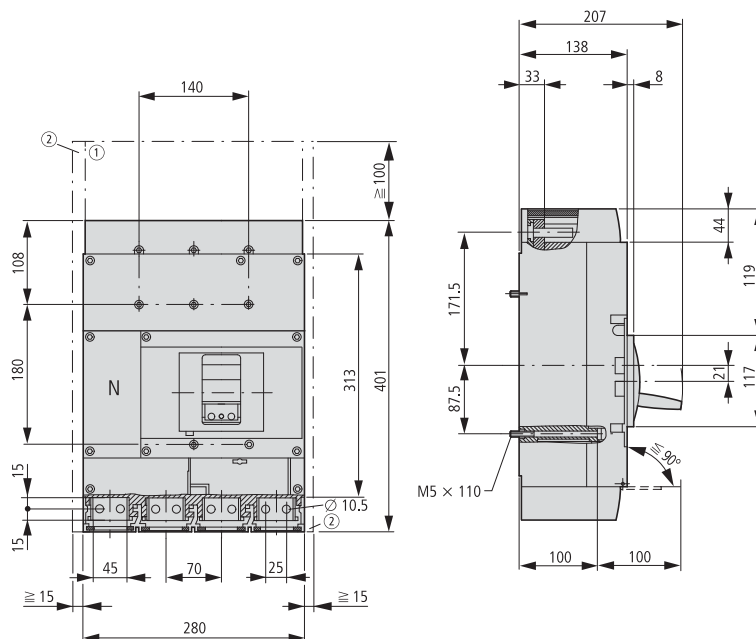
NZM3-XR...



① Up to 3 padlocks

Circuit-breaker**3 pole**LZMN4
LN4

- ① Blow out area, minimum distance to other parts ≥ 100 mm up to 690 V
 ② Minimum distance to adjacent parts ≥ 5 mm

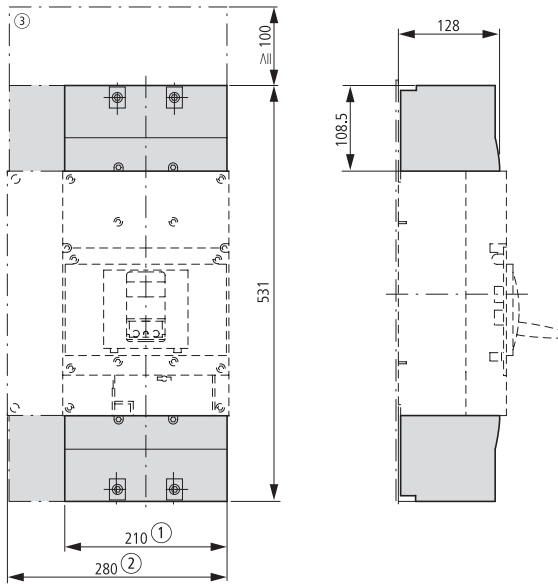
Circuit-breaker**4 pole**LZMN4-4
LN4-4

- ① Blow out area, minimum distance to other parts ≥ 100 mm up to 690 V
 ② Minimum distance to adjacent parts ≥ 5 mm

xEnergy

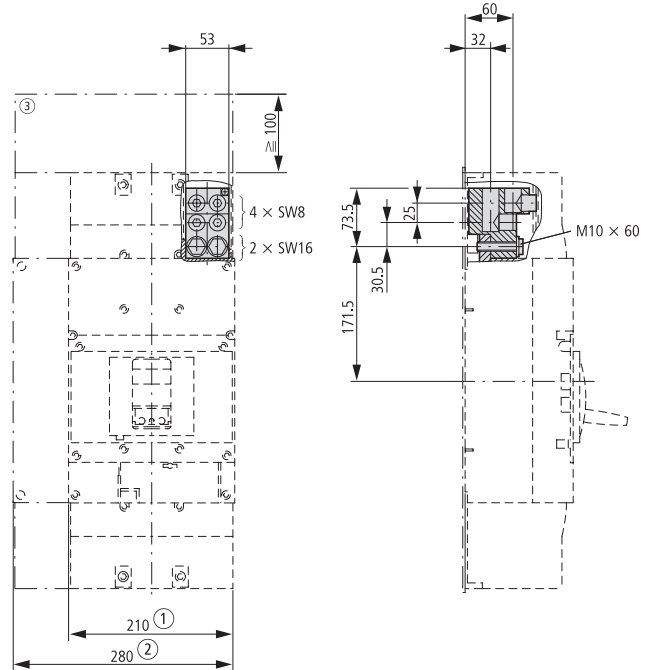
Covers

NZM4(-4)-XKSA



Tunnel terminal

NZM4-4-XKA



- ① 3 pole
- ② 4 pole
- ③ Clearance from conductive parts ≥ 100 mm up to 690 V

Screw connection

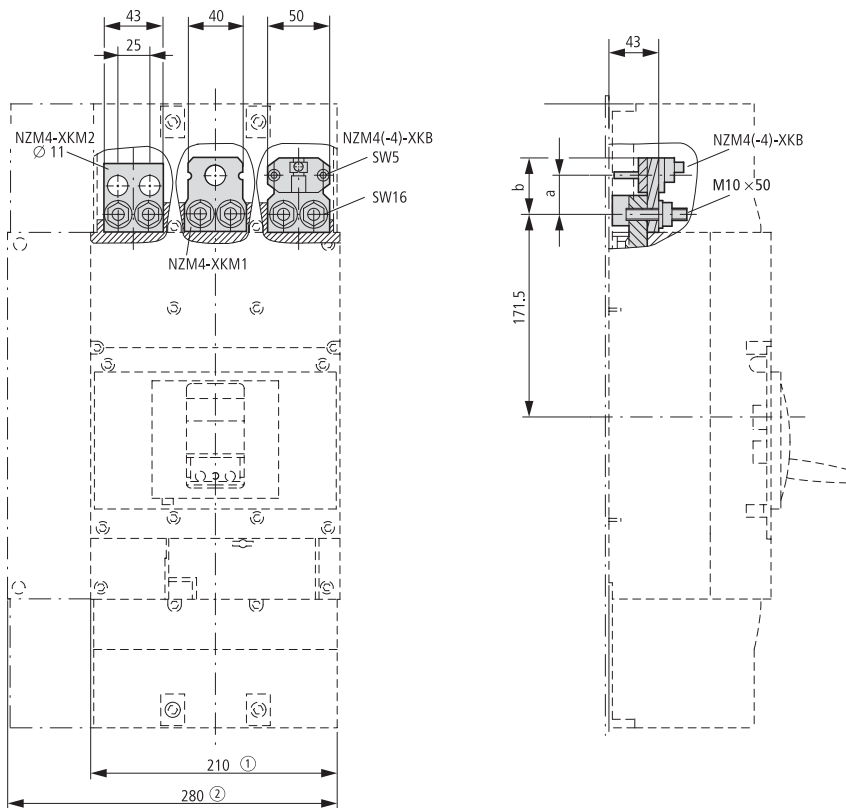
Module plate

Single hole
NZM4(-4)-XKM1
2-hole
NZM4(-4)-XKM2

Flat cable terminal

NZM4(-4)-XKB

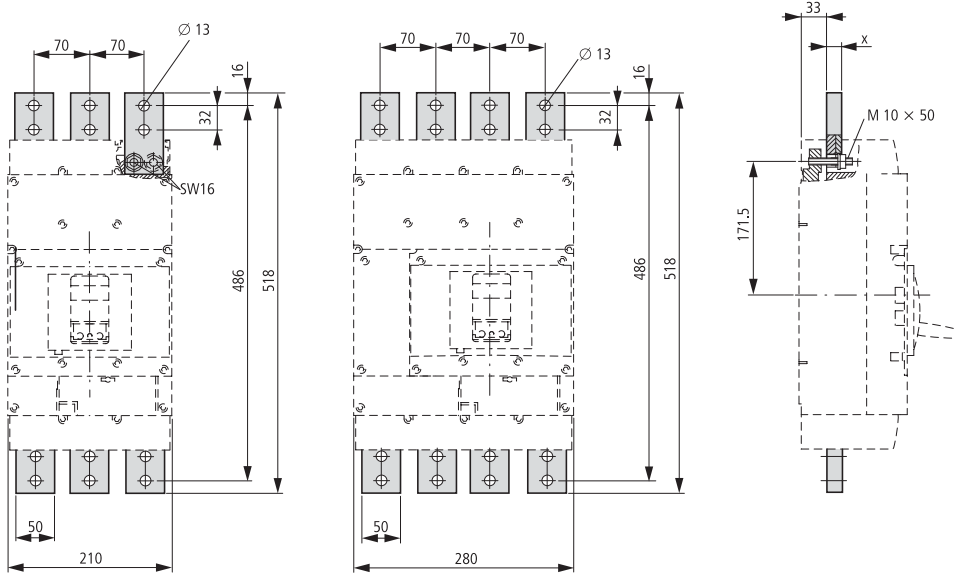
Part no.	a	b
NZM4(-4)-XKM	136	47
NZM4(-4)-XKM	232	40
NZM4(-4)-XKB	-	47



- ① 3 pole
- ② 4 pole
- ③ Clearance from conductive parts ≥ 100 mm up to 690 V

Module plate
2 holes, vertical

NZM4(-4)-XKM2S...

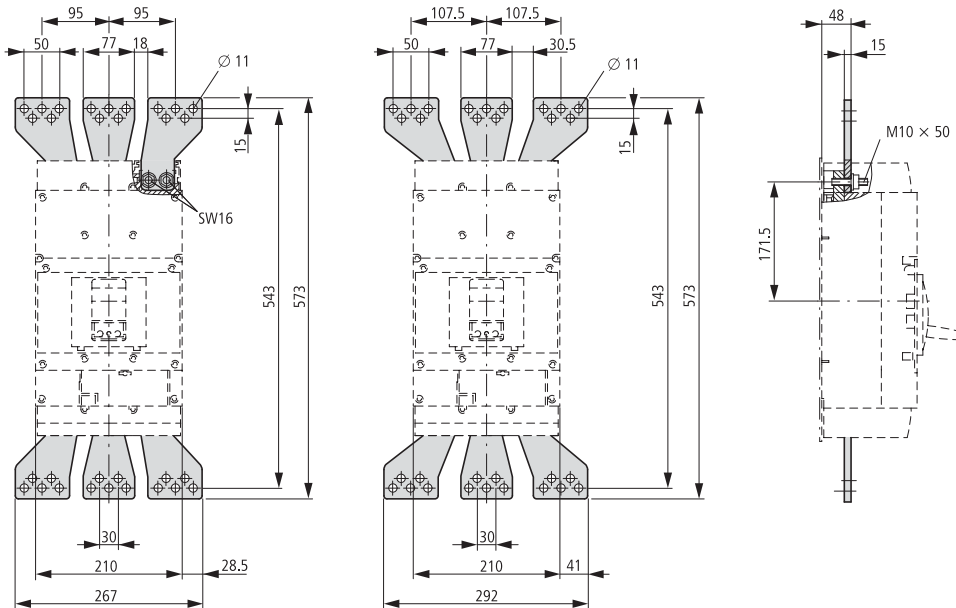


Part no.	x
NZM4(-4)-XKM2S-1250	12
NZM4(-4)-XKM2S-1600	20

Connection width extension

NZM4-XKV95

NZM4-XKV110

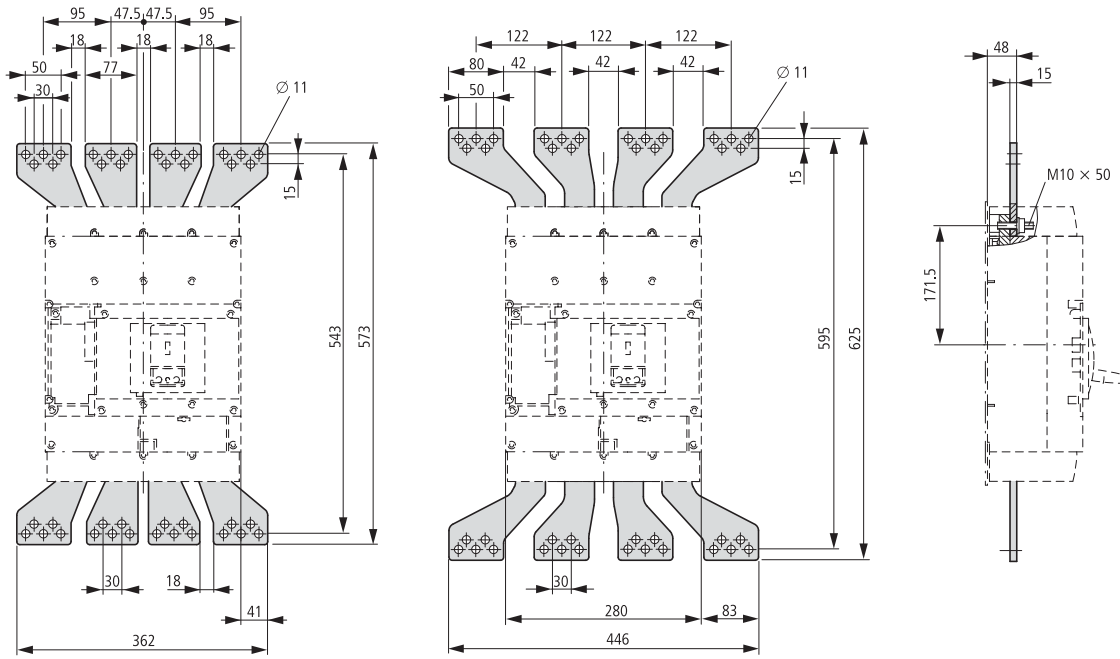


xEnergy

NZM4-XKV..., NZM4(-4)-XKP

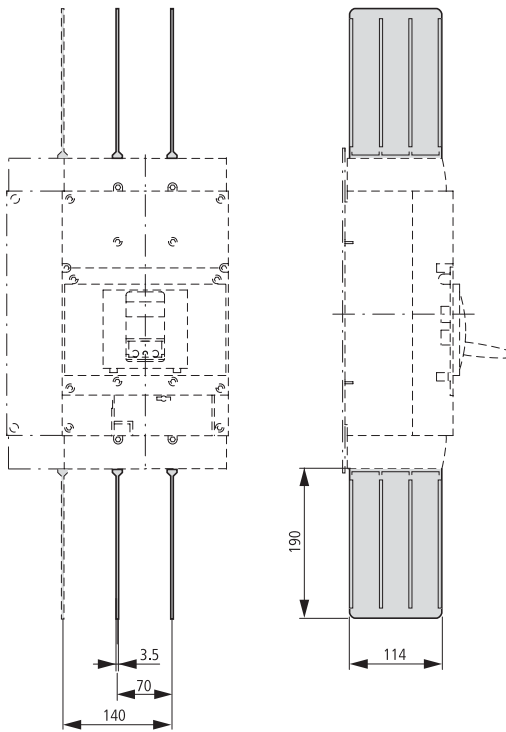
NZM4-4-XKV95

NZM4-4-XKV120



Phase isolators

NZM4-4-XKP

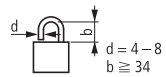
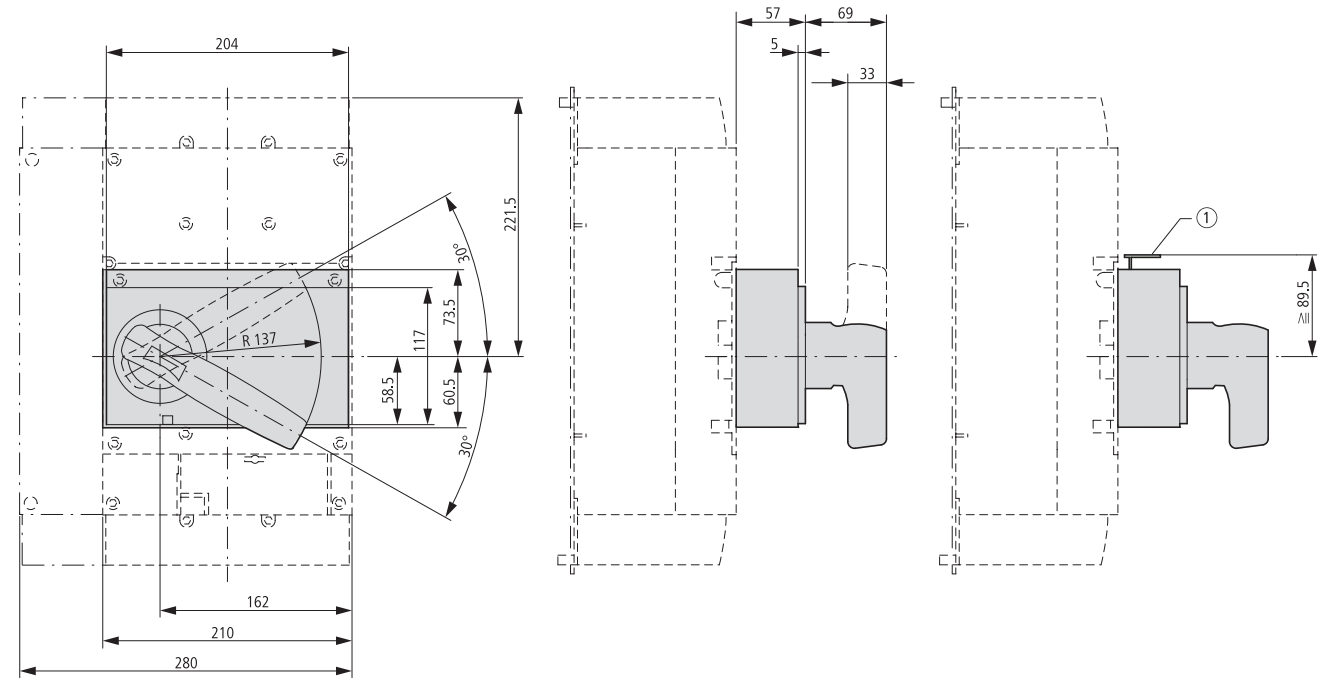


Dimensions

NZM4-XDV..., NZM4-XTVD...

Rotary handle on circuit-breaker

NZM4-XDV(R)

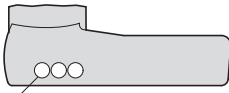
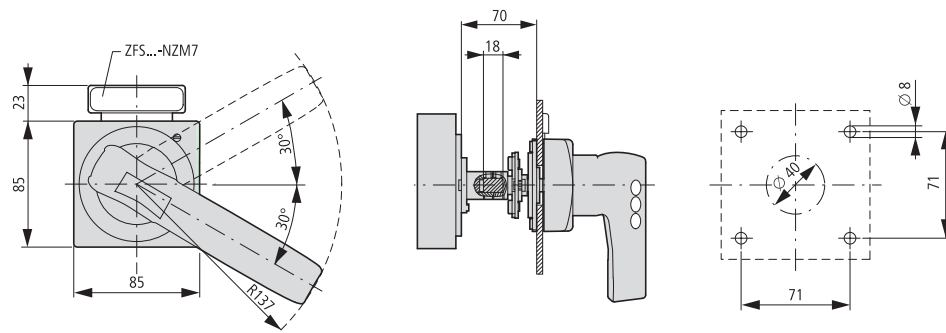


d = 4-8
b ≧ 34

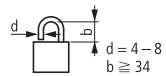
① Up to 3 padlocks

Door coupling rotary handle

NZM4-XTVD(V)(R)...



①



d = 4-8
b ≧ 34

① Up to 3 padlocks

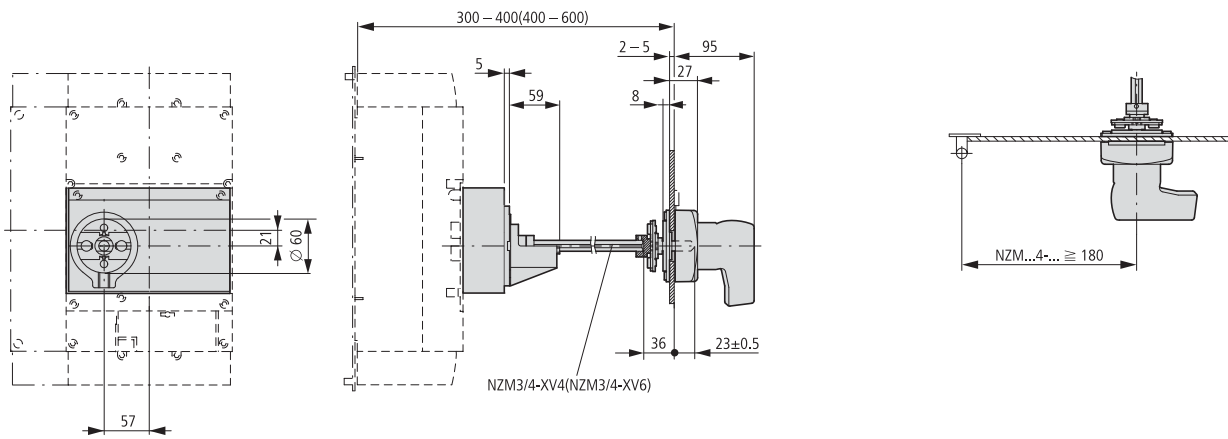
xEnergy

NZM4-XTVD..., NZM4...MV

Door coupling rotary handle with extension shaft

NZM4-XTVD(V)(R)
NZM3/4-XV4(6)

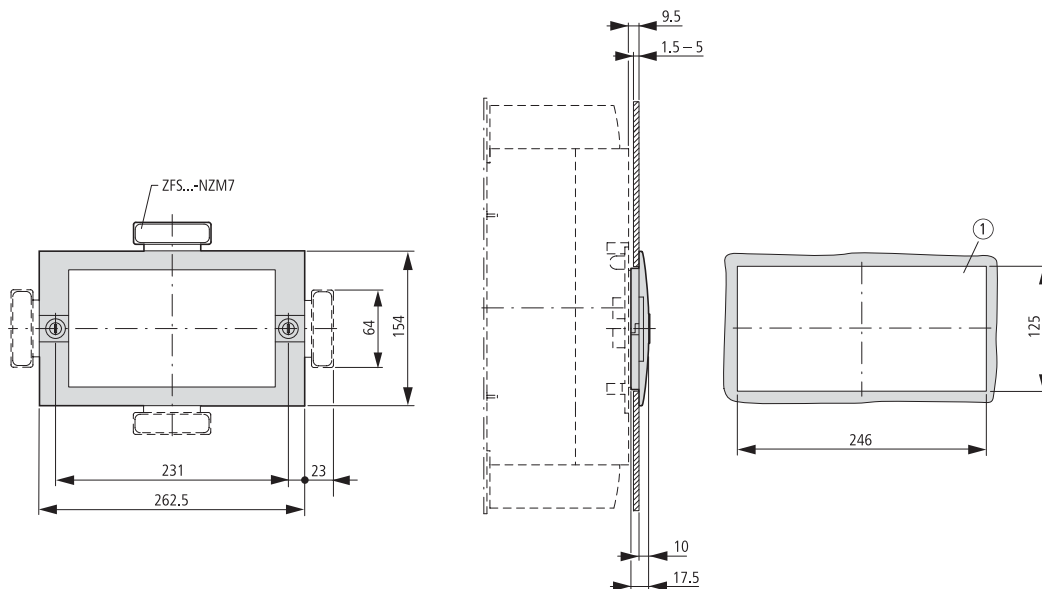
Minimum door coupling rotary handle clearance from door pivot point



Insulating surrounds

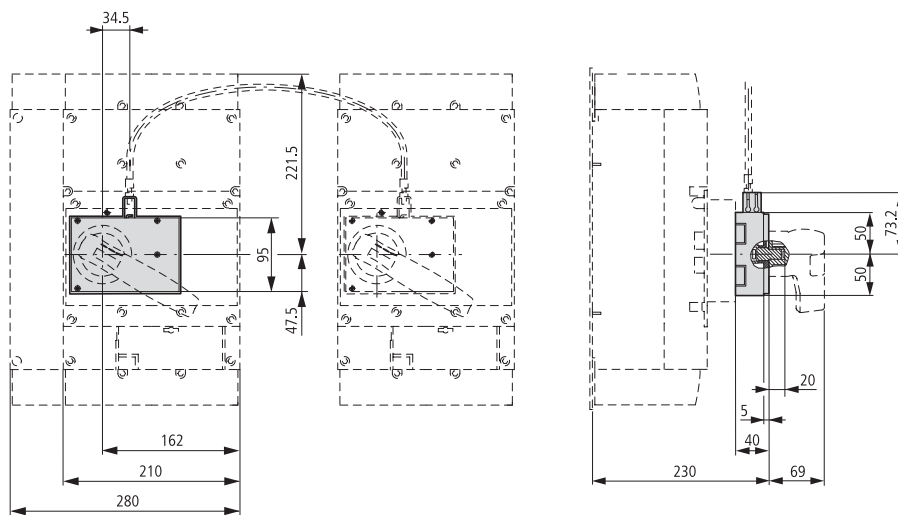
NZM4-XBR

⊙ Mounting aperture



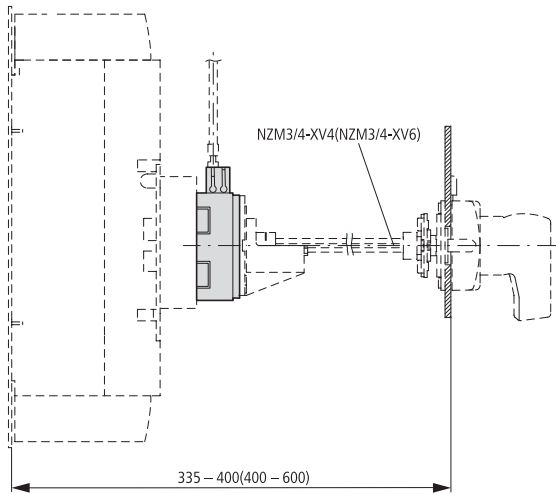
Mechanical interlock

NZM4-XMV + NZM4-XDV(R)



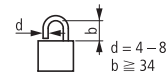
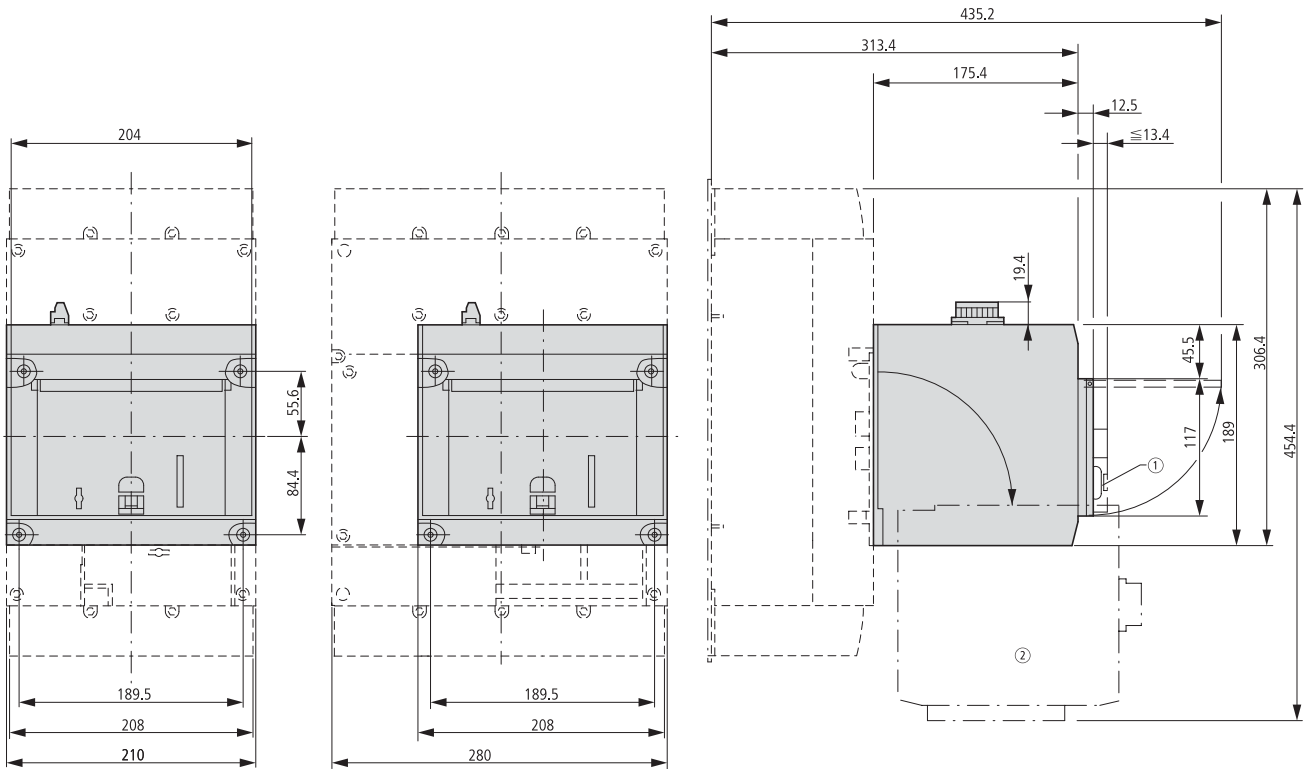
Mechanical interlock

NZM4-XMV + NZM4-XTVD(V)(R)



Remote operator

NZM4-XR...



① Up to 3 padlocks
Remote operator folded

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