

Type: NZMB2-A160 Article No.: 259088 Sales text Circuit-breaker3p systems/cable prot.



Ordering information				
Number of poles			3-pole	
Description			Terminal screws standard, terminals as accessories	
Rated current = rated uninterrupted current	<i>I</i> u	А	160	
Setting range				
Overload releases	<i>I</i> r	А	125160	
Switching capacity				
Switching capacity		kA	25	
Release system			Thermomagnetic release	
Frame size			NZM2	

Notes concerning the product group

IEC/EN 60947-2

Adjustable overload release I_r

• 0.8 ... 1 × I_n (ex–works 0.8 × I_n)

Adjustable short-circuit release *l*_i

• 6 ... 10 × /

1

n

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• (ex-works 6 × I
• )
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– NZM...–A40: 8 ... 10 × I_n (ex–works 8 × I_n)

Fixed short-circuit release *l*_i

- 350 A at *I*_n = 20 ... 32 A
- 1280 A at *I*_n = 160 A (NZM1)

Notes concerning the product group

Notes for terminals 262240

Protection against direct contactImage: Singer and back of hand proof to VDE 0106 Part 100Climatic proofingImage: Singer and back of hand proof to VDE 0106 Part 100Climatic proofingImage: Singer and back of hand proof to VDE 0106 Part 100Ambient temperatureImage: Singer and back of hand proof could be constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30Ambient temperatureImage: Singer and back of hand proof could be constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30Ambient temperatureImage: Singer and back of hand proof could be constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30Ambient temperatureImage: Singer and back of hand proof could be constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30Ambient temperatureImage: Singer and back of hand proof could be constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30Ambient temperatureImage: Singer and back of hand proof could be constant temperatureAmbient temperatureImage: Singer and back of hand proof could be constant temperatureAmbient temperatureImage: Singer and back of hand proof could be constant temperatureAmbient temperatureImage: Singer and back of hand proof could be constant temperatureAmbient temperatureImage: Singer and back of hand proof could be constant temperatureAmbient temperatureImage: Singer and back of hand proof could be constant temperatureSinger and part 101/A1Image: Singer and back of hand proof could be constant temperature <th>General</th> <th> </th> <th></th>	General	 	
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60068-2-27)Image: selection of the selection of t	Operation	°C	25+70
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WeightImage: Second	between the auxiliary contacts	V AC	300
Weightkg2,345Mounting positionImage: Second se	Dimensions		
Mounting position Image: Constraint of the second seco	Weight		
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Degree of protection In the operating controls area: Device IP20 (basic degree of	Mounting position		
Device In the operating controls area: IP20 (basic degree of	Direction of incoming supply		As required
Device IP20 (basic degree of	Degree of protection		
	Device		IP20 (basic degree of

TerminationsTunnel terminal: IP10 Phase isolator and strip terminal: IP00Circuit-breakersRated impulse withstand voltage U_{imp} $<<Main contacts<\vee<Main contacts<\vee<Auxiliary contacts<\vee<Rated operational voltageU_e\vee AC<Overvoltage category/pollutiondegreeU_i\vee<Rated insulation voltageU_i\vee<For use in IT electrical powernetworksV_i<<Switching capacityV_i<<Rated short-circuit making capacityI_{cm}KA<440 \veeI_{cm}KA<<<440 \veeI_{cm}KA<<<<<<<<<>>240 \veeV_iV_i<<<<V_i<$	
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400/415 V 50/60 Hz I _{cu} kA 25	
415 V AC <i>I</i> _{cu} kA 25	
440 V 50/60 Hz I _{cu} kA 25	
<i>I</i> _{cu} to IEC/EN 60947 operating sequence O-t-CO-t-CO	
240 V 50/60 Hz I _{cs} kA 30	
400/415 V 50/60 Hz I _{cs} kA 25	
415 V AC <i>I</i> _{cs} kA 25	
up to 440 V 50/60 Hz I _{cs} kA 18,5	
Maximum low-voltage h.b.c. fuse A gG/gL 355	
Technical data, divergent from the products for the IEC marketSwitching capacity NA switches (UL489, CSA 22.2 No. 5.1)	
240 V 60 Hz kA 35	

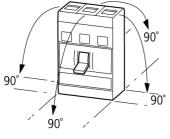
480V 60Hz		kA	25
600 V 60 Hz		kA	18
Utilization category to IEC/EN			
60947–2			A
Lifespan, mechanical	Operations		20000
Maximum operating frequency			
Max. operating frequency		Ops/h	120
Lifespan, electrical			
AC-1			
400/415 V 50/60 Hz	Operations		10000
415 V	Operations		10000
AC3			
400/415 V 50/60 Hz	Operations		6500
415 V	Operations		6500
Current heat loss per pole at I_{u}		W	19
Current heat loss (3–pole) at $I_{\rm u}$		W	19
Overload releases			
to IEC/EN 60947, VDE 0660			
Temperature compensation to IEC/EN 60947 Residual error in the range –25 °C/+70 °C (reference temperature 30 °C)		%/K	0
Temperature compensation			0
Frequency range		ms	< 10
Terminal capacities			
Standard equipment			Screw terminal
Accessories			Box terminal Tunnel terminal Connection on rear
Rated power of coil			
Box terminal			
Solid		mm ²	1 × (4 – 16) 2 × (4 – 16)
Stranded		mm ²	1 × (25 – 185) 2 × (25 – 70)
Tunnel terminal			
Solid		mm ²	1 × 16
Stranded			
Single hole		mm ²	1 × (25 – 185)
Bolt terminal and rear-side connection			

Direct on the switch			
Solid		mm ²	1 × (4 – 16) 2 × (4 – 16)
Stranded		mm ²	1 × (25 – 185) 2 × (25 – 70)
Al conductors, Cu cable			
Tunnel terminal			
Solid		mm ²	1 × 16
Stranded			
Single hole		mm ²	1 × (25 – 185) je nach Kabelhersteller bis zu 240 mm² anschließbar
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm ²	1 × (10 – 16) 2 × (10 – 16)
Stranded		mm ²	1 × (25 – 50) 2 × (25 – 50)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm ²	2 × 9 × 0.8
	max.	mm ²	10 × 16 × 0.8
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	2 × 16 × 0.8
Flat copper strip, with holes	max.	mm	10 × 16 × 0.8
Copper busbar (width × thickness)			
Bolt terminal and rear-side connection			
Screw connection			M8
Direct on the switch			
	min.	mm ²	16 × 5
	max.	mm ²	20 × 5
Notes			
Notes			For rated operational voltage the following applies: DC voltage values on request For switching capacity of NA switches with NZM1–NA the following applies: 480Y/277 V from 60 A

	For rated operational current AC-3 at NZMB2, NZMN2, NZMH2, NZM4 the following applies: 400 V: max. 650 kW; 600 V: max. 600 kW For switching capacity of NA switches with NZML2 and NZML3 the following applies: current limiting switch to UL489 For overload release temperature compensation NZM2 thermomagnetic the following applies: with NZM11160: 0.4 For switching capacity of NA switches with NZML4 at 240 V 60 Hz the following applies: please enquire The current heat loss per pole ratings refer to the maximum current rating of the frame size.
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Mounting position

Vertical and 90° in all directions



With plug-in adapter NZM2, N(S)2: vertical, 90 $^\circ$ right/left

With withdrawable unit NZM3, N(S)3: vertical, 90° left NZM4, N(S)4: vertical with remote operator: NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° to all directions with residual current release NZM2: vertical and 90° to all directions

Overview

Basic equipment				
Box terminal	٠	—	—	—
Screw connection	—	٠	٠	٠
Accessories				
Box terminal	-	٠	٠	_
Screw connection	٠	_	_	٠
Tunnel terminal	٠	٠	٠	٠
Connection on rear	٠	٠	٠	٠
Flat conductor terminal	_	_	_	٠

Notes

For rated operational voltage switching on 3 contacts the following applies: DC correction factor for instantaneous release response value NZM1: 1.25, NZM2: 1.35

Setting for l_i at DC = setting l_i AC/DC correction factor

Details apply for 3–pole system protection circuit–breaker with thermomagnetic release NZM(H)1(2)–A...

Switching of one pole via two series contacts

Switching of one pole via three series contacts





For NA switch switching capacity with NZM...1–...(C)NA the following applies: 480 Y/277 V from 60 A

For AC–3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW

For NA switch switching capacity with NZML2 and NZML3 the following applies: Current Limiting switch to UL489

For 3-pole system protection circuit-breaker the AC-3 specification is not applicable

For NA switch switching capacity with NZML4 at 240 V 60 Hz the following applies: on request

For current heat loss per pole the specification refers to the maximum nominal current of the frame size.

For 3–pole system protection circuit–breaker the following applies: 690 V

For 3–pole system protection circuit–breaker the following applies: 400/415 V 7500 switching operations

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

[≦] 1600 A

Higher switching capacity on request

Notes

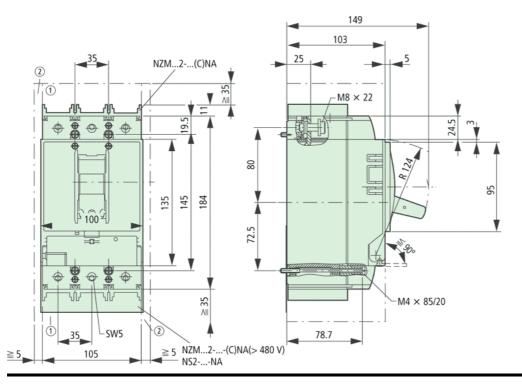
XSV = plug-in unit

XAV = withdrawable unit

TM = thermomagnetic

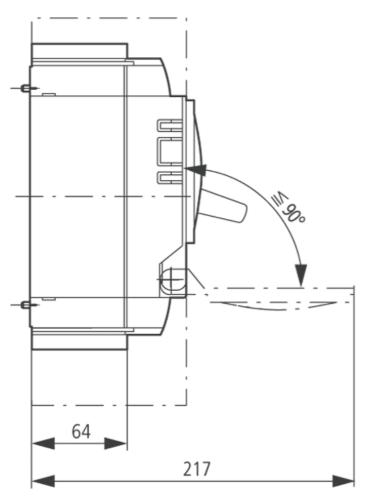
E = electronic

Dimensions

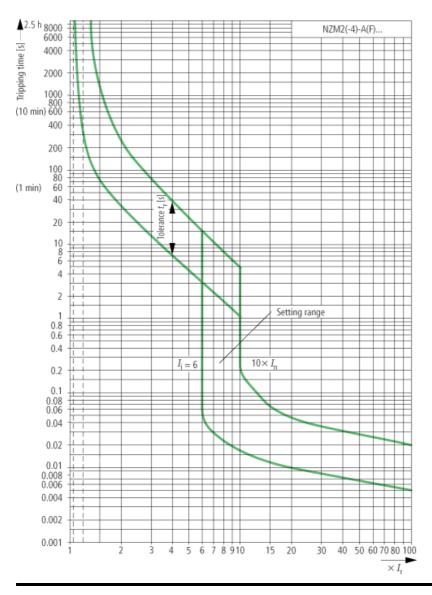


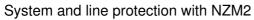
Blow out area, minimum distance to other parts 35 mm Minimum distance to adjacent parts 5 mm

Dimensions

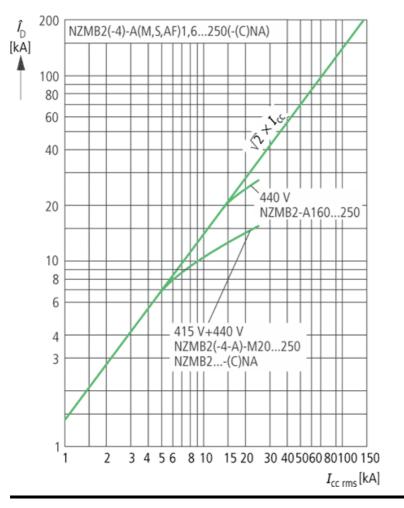


Characteristic curve



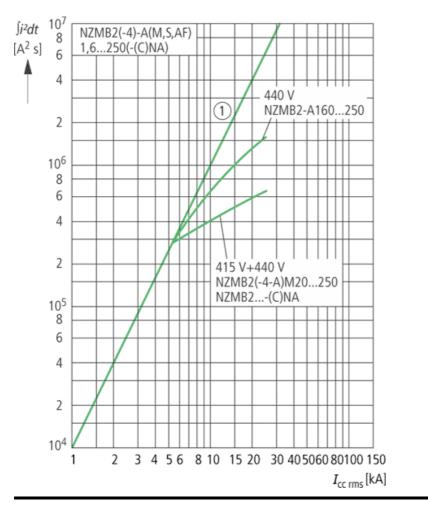


Characteristic curve



Let-through current \hat{i}_{D} Let-through energy Pt

Characteristic curve



1 half-shaft

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