Circuit-breaker 3p adjustable

Part no. **NZMN1-A125-NA**

Article no. **281573**

Powering Business Worldwide™

Delivery programme

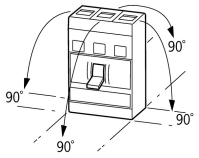
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			UL/CSA, IEC
Release system			Thermomagnetic release
Installation type			Fixed
Description			Switches conform to UL/CSA as well as the IEC regulations. IEC switching performance values are contained on the rating plate. Adjustable overload releases Ir
Frame size			NZM1
Number of poles			3 pole
Standard equipment			Box terminal
Switching capacity			
SCCR 480Y/277 V 60 Hz	I_{cu}	kA	35
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	A	125
Setting range			
Overload trip			
	I_r	A	100 - 125
Short-circuit releases			
Non-delayed	$I_i = I_n$ x …		6 - 10

Approvals

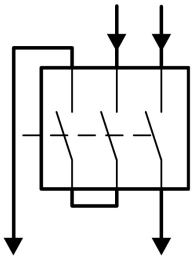
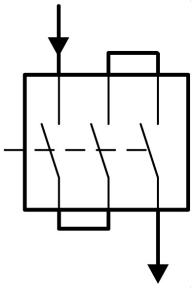
Product Standards	UL 489; CSA-C22.2 No. 5-09; IEC 60947-2; CE marking
UL File No.	E31593
UL CCN	DIVQ
CSA File No.	022086
CSA Class No.	1432-01
NA Certification	UL listed, CSA certified
Specially designed for NA	Yes
Suitable for	Feeder circuits, branch circuits
Current Limiting CB	Yes
Max. Voltage Rating	480Y/277 V
Degree of Protection	IEC: IP20; UL/CSA Type: -

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 to IEC 60068-2-78 Damp heat, cyclic to IEC 60068-2-30
Ambient temperature		°C	
Ambient temperature, storage		°C	- 40 - + 80
Operation		°C	- 25 … + 70
Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27		g	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
Weight		kg	1.046
Mounting position			

Mounting position			Vertical and 90° in all directions  With residual-current release XFI: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in adapter elements - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: - NZM3, N3: vertical, 90 ° left - NZM4, N4: vertical with remote operator: - NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: 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
Terminations			Tunnel terminal: IP10 Phase isolator and strip terminal: IP00
Other technical data (sheet catalogue)			Threshold and intermediate current, interrupting capacity Weight Temperature dependency, Derating Effective power loss

Circuit-breakers

Rated surge voltage invariability	U_{imp}		
Main contacts		V	6000
Auxiliary contacts		V	6000
Rated operational voltage	U_e	V AC	690
Rated operational voltage	U_e	V DC	500
			1) Details apply for 3 pole system protection circuit-breaker with thermomagnetic release NZMN(H)1(2)(3)-A... to 500 A. For rated operating voltage switching via 3 contacts: DC correction factor for instantaneous release response value: NZM1: 1.25, NZM2: 1.35, NZM3: 1.45 Set value for I_i at DC = set value I_i AC/correction factor DC **Switching of one pole via two series contacts**  **Switching of one pole via three series contacts** 
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	690
Use in unearthed supply systems		V	≦690

Switching capacity

Rated short-circuit making capacity	I_{cm}		
240 V	I_{cm}	kA	187
400/415 V	I_{cm}	kA	105
440 V 50/60 Hz	I_{cm}	kA	74
525 V 50/60 Hz	I_{cm}	kA	40
690 V 50/60 H	Ic	kA	17
Rated short-circuit breaking capacity I_{cn}	I_{cn}		
Icu to IEC/EN 60947 test cycle O-t-CO	Icu	kA	

240 V 50/60 Hz	I_{cu}	kA	85
400/415 V 50/60 Hz	I_{cu}	kA	50
440 V 50/60 Hz	I_{cu}	kA	35
525 V 50/60 Hz	I_{cu}	kA	20
690 V 50/60 Hz	I_{cu}	kA	10
500 V DC	I_{cu}	kA	15
Ics to IEC/EN 60947 test cycle O-t-CO-t-CO	Ics	kA	
240 V 50/60 Hz	I_{cs}	kA	85
400/415 V 50/60 Hz	I_{cs}	kA	50
440 V 50/60 Hz	I_{cs}	kA	35
525 V 50/60 Hz	I_{cs}	kA	10
690 V 50/60 Hz	Ics	kA	7.5
Maximum low-voltage h.b.c. fuse		A gG/gL	315
			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Technical data that diverge from products for the IEC market Switching capacity of NA switches (UL489, CSA 22.2 No. 5.1) Short-circuit current rating SCCR			
SCCR 240 V 60 Hz	I_{cu}	kA	85
SCCR 480Y/277 V 60 Hz	I_{cu}	kA	35
Utilization category to IEC/EN 60947-2			A
Rated making and breaking capacity			
Rated operational current	I_e	A	
AC-1			
400/415 V 50/60 Hz	I_e	A	160
415 V	I_e	A	125
690 V 50/60 Hz	I_e	A	160
AC--3			
400/415 V 50/60 Hz	I_e	A	125
415 V	I_e	A	125
690 V 50/60 Hz	I_e	A	125
DC - -1			
500 V DC	I_e	CSA	125
DC - 3			
500 V DC	I_e	CSA	125
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1			
400 V V 50/60 Hz	Operations		10000
415 V V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
AC--3			
400 V 50/60 Hz	Operations		7500
415 V 50/60 Hz	Operations		7500
690 V 50/60 Hz	Operations		5000
DC - -1			
500 V DC		Operations	10000
DC - 3			
500 V DC	Operations		5000
Max. operating frequency		Ops/h	120
Current heat losses per pole at I_u are based on the maximum rated operational current of the frame size.		W	16.7

			For current heat loss per pole the specification refers to the maximum rated operational current of the frame size.
Total downtime in a short-circuit		ms	< 10

Terminal capacity

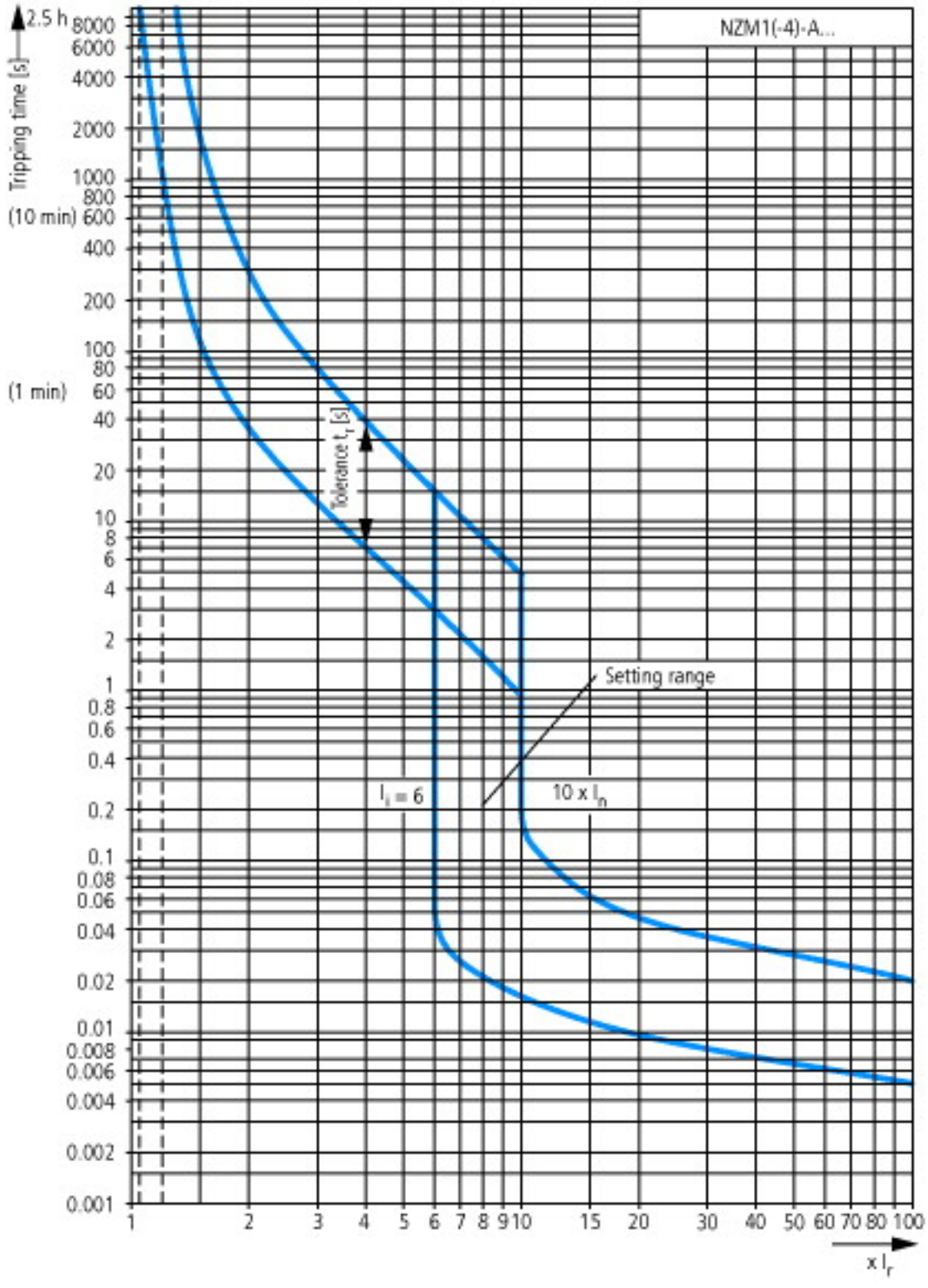
Standard equipment			Box terminal
Overview			Basic equipment Box terminal ● - - - Screw connection - ● ● ● Accessories Box terminal - ● ● - Screw connection ● - - ● Tunnel terminal ● ● ● ● Connection on rear ● ● ● ● Flat conductor terminal - - - ●
Round copper conductor			
Box terminal			
Solid		mm^2	1 x (12 … 6)
Stranded		mm^2	1 x (4 … 2/0)
Tunnel terminal			
Solid		mm^2	1 x 6
Stranded		mm^2	
Stranded		mm^2	1 x (4 … 3/0)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm^2	1 x (12 … 6) 2 x (9 … 6)
Stranded		mm^2	1 x (4 … 2/0)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm^2	2 x 9 x 0.8
	max.	mm^2	9 x 9 x 0.8
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M6
Direct on the switch			
	min.	mm^2	12 x 5
	max.	mm^2	16 x 5
Control cables			
		mm^2	1 x (18 … 14) 2 x (18 … 16)

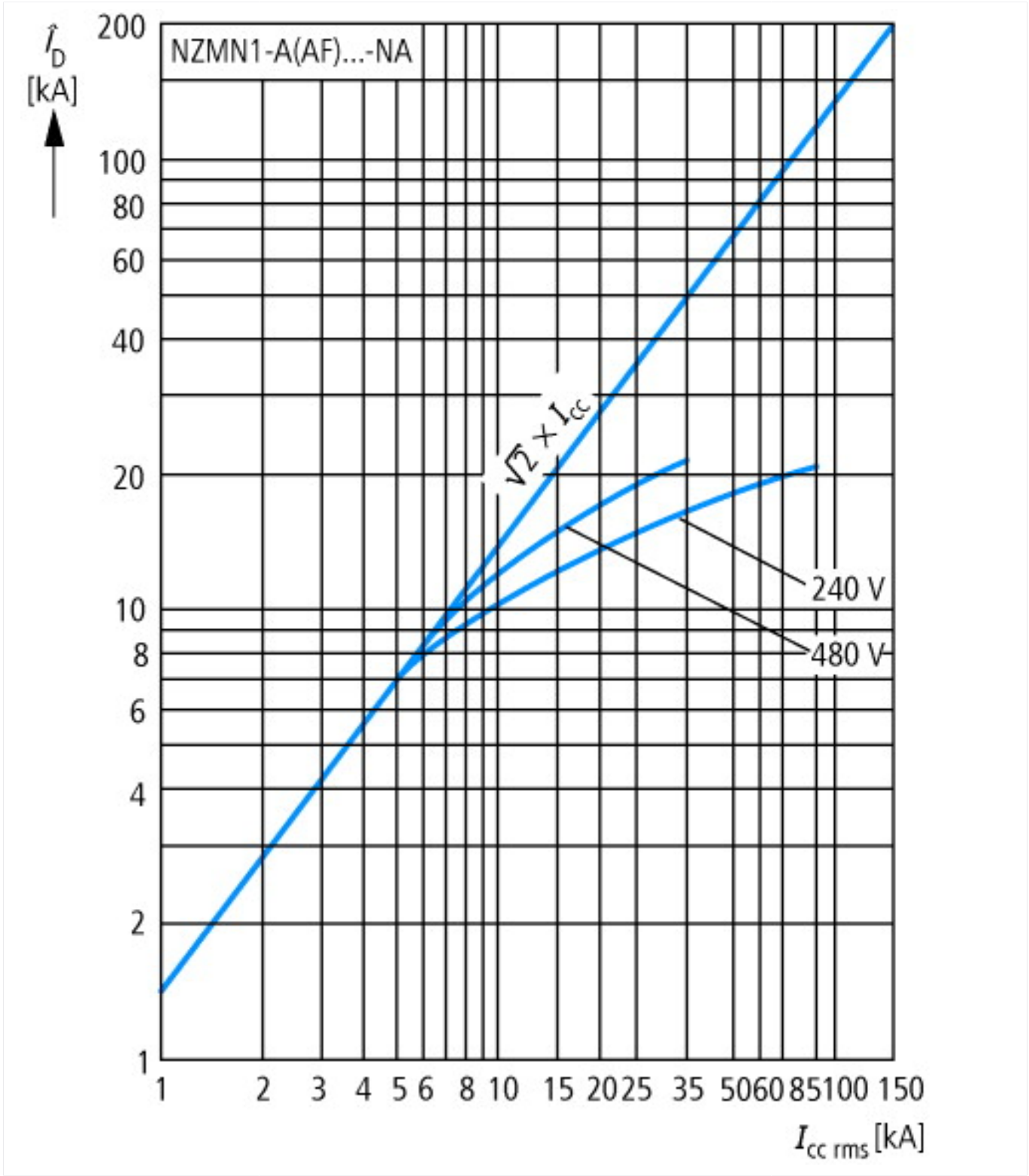
Technical data ETIM 4.0

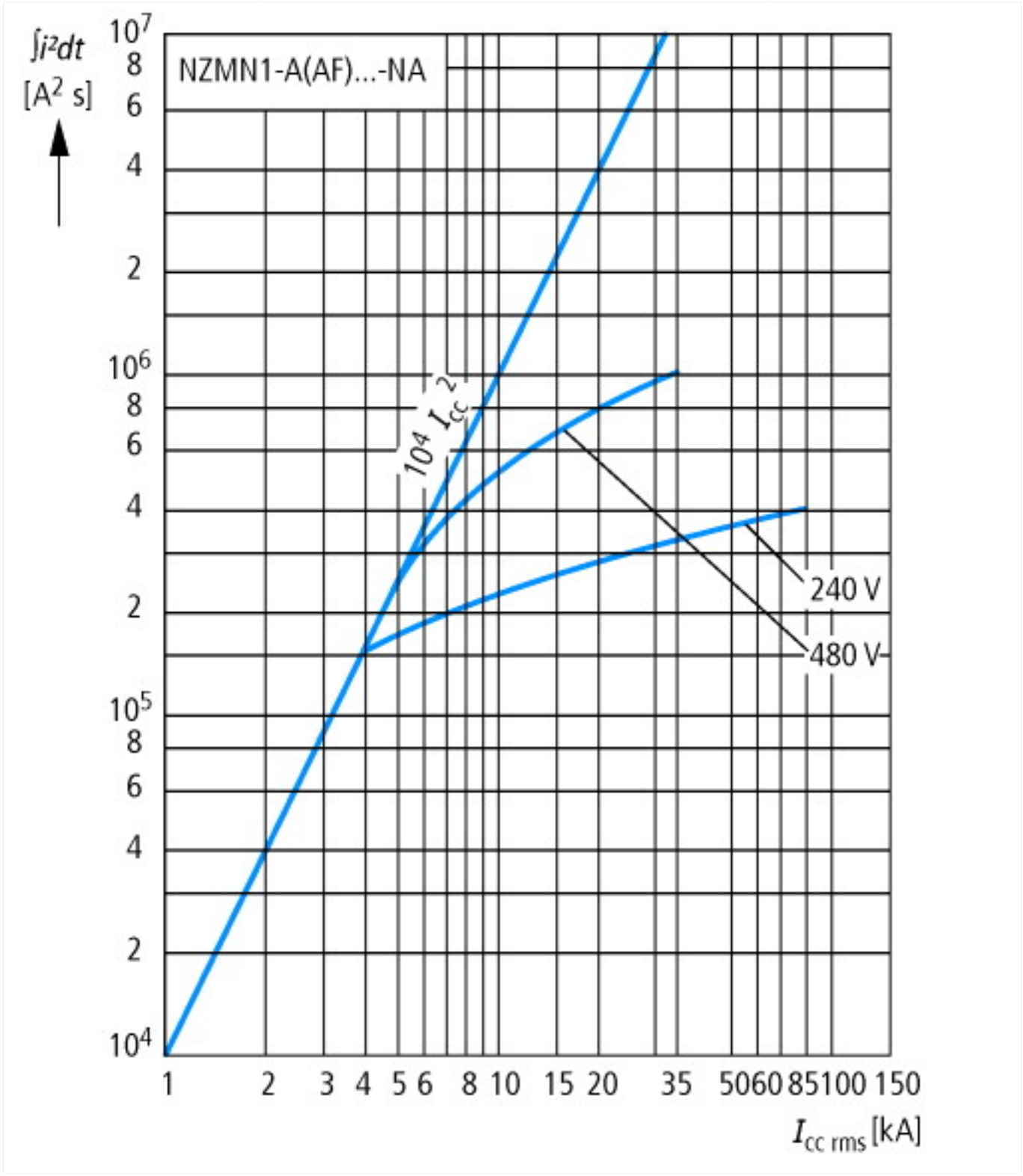
Number of poles		3
Rated uninterrupted current Iu	A	125
Number of auxiliary contacts as N/Cs		0
Number of auxiliary contacts as N/Os		0
Device construction		Built-in device fixed built-in technique
With under voltage release		No
Motor operator optional		YES
Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting		No
Setting range non-delayed short-circuit release	A	1250

Setting range short-term delayed short-circuit release		A	0
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz		kA	50
Switched-off indicator available			No
Type of control element			Toggle lever
Connection type main current circuit			Box terminal
Motor operator integrated			No
Position of connection for main circuit			Front connection
Protection type (IP)			IP20
Number of auxiliary contacts as changeover contact			0
Setting range of overload releases		A	125

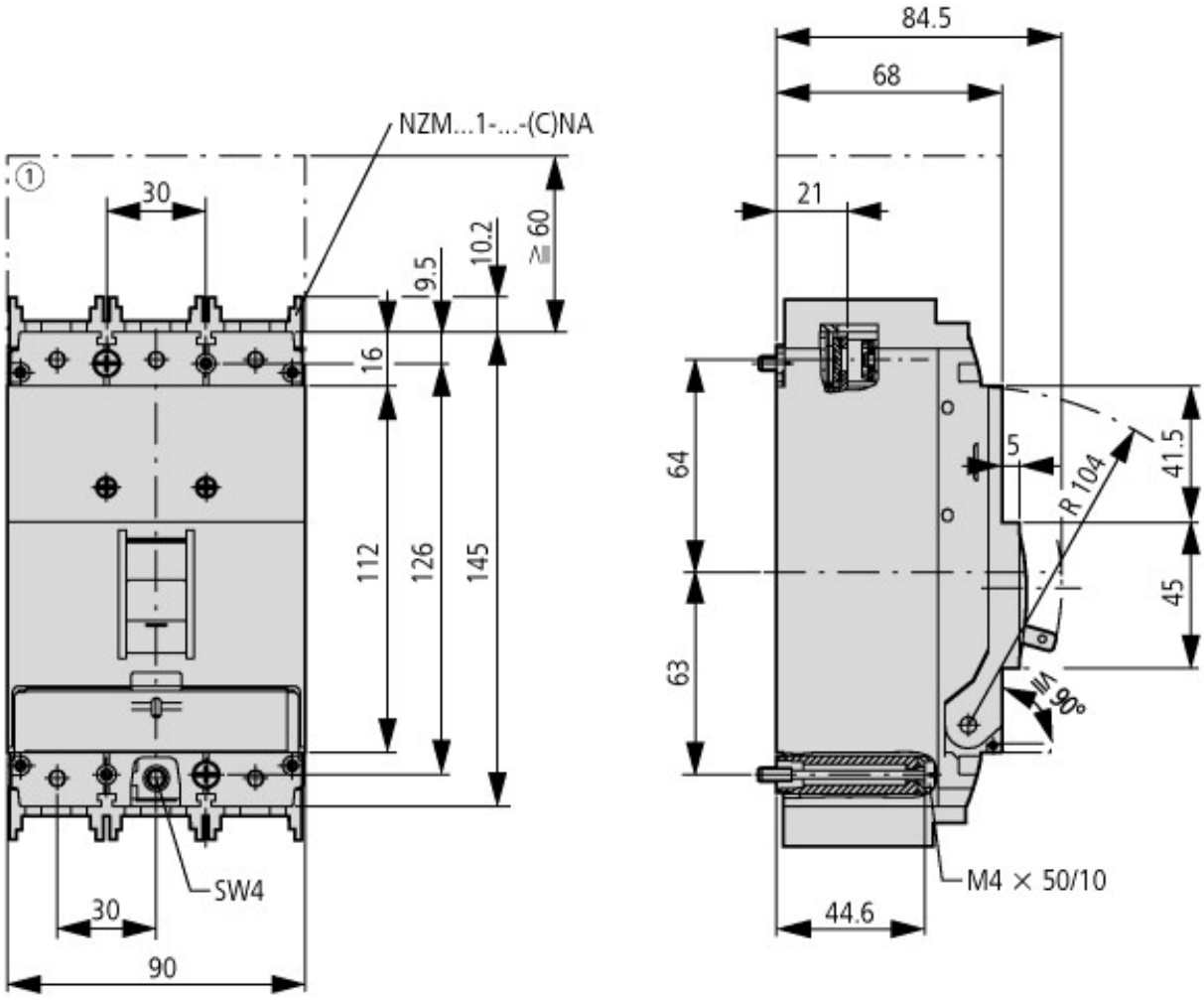
Characteristics



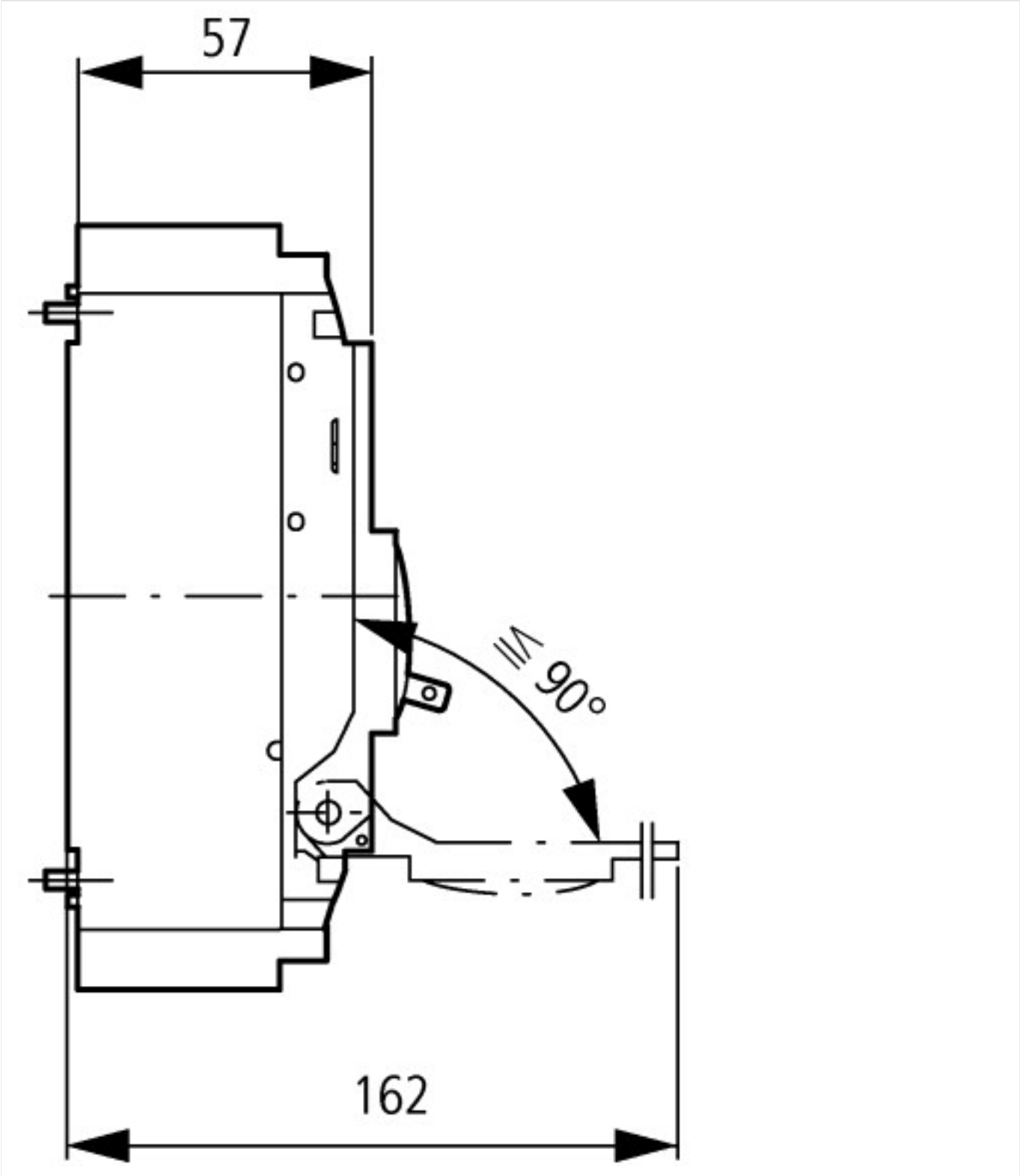

NZMN1-A(AF)...-NA
$\hat{I}_D$ [kA]
200
100
80
60
40
20
10
8
6
4
2
1
$\sqrt{2} \times I_{cc}$
240 V
480 V
1
2
3
4
5
6
8
10
15
20
25
35
50
60
85
100
150
$I_{cc\ rms}$ [kA]


∫i²dt
[A² s]
NZMN1-A(AF)...-NA
10⁷
8
6
4
2
10⁶
8
6
4
2
10⁵
8
6
4
2
10⁴
10⁴ I_cc²
240 V
480 V
1
2
3
4
5
6
8
10
15
20
35
50
60
85
100
150
I_cc rms [kA]

Dimensions



① Blow out area, minimum clearance to adjacent parts



Additional product information (links)

IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector	
IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01203004Z2012_03.pdf