### DATASHEET - NZMB1-A50



Circuit-breaker, 3p, 50A

NZMB1-A50 259076

0004358701

Powering Business Worldwide<sup>\*</sup>

EL-Nummer (Norway)

Part no.

Catalog No.

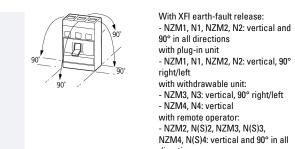
Similar to illustration

### **Delivery program**

Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Thermomagnetic release
Construction size			NZM1
Number of poles			3 pole
Standard equipment			Box terminal
Switching capacity			
400/415 V 50 Hz	l <sub>cu</sub>	kA	25
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	А	50
Setting range			
Overload trip			
द	l <sub>r</sub>	A	40 - 50
Short-circuit releases			
Non-delayed	l <sub>i</sub> = l <sub>n</sub> x		6 - 10
Short-circuit releases	I <sub>rm</sub>	A	300 - 500

# Technical data

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			
Ambient temperature, storage	٩(	С	- 40 - + 70
Operation	٥(	С	-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 EN 61140			
Between auxiliary contacts and main contacts	V	AC	500
between the auxiliary contacts	V	AC	300
Mounting position			Vertical and 90° in all directions



			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)			Temperature dependency, Derating
Circuit-breakers			
Rated current = rated uninterrupted current	$I_n = I_u$	А	50
Rated surge voltage invariability	U <sub>imp</sub>		
Main contacts		V	6000
Auxiliary contacts		V	6000
Rated operational voltage	Ue	V AC	440
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	690
Use in unearthed supply systems		V	≦ 440
Switching capacity			
Rated short-circuit making capacity	I <sub>cm</sub>		
240 V	I <sub>cm</sub>	kA	63
400/415 V	I <sub>cm</sub>	kA	53
440 V 50/60 Hz	I <sub>cm</sub>	kA	53
Rated short-circuit breaking capacity I <sub>cn</sub>			-
	I <sub>cn</sub>	1.4	
Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	20
240 V 50/60 Hz	I <sub>cu</sub>	kA	30
400/415 V 50/60 Hz	l <sub>cu</sub>	kA	25
440 V 50/60 Hz	Icu	kA	25
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
240 V 50/60 Hz	I <sub>cs</sub>	kA	30
400/415 V 50/60 Hz	I <sub>cs</sub>	kA	25
440 V 50/60 Hz	I <sub>cs</sub>	kA	18.5
			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Utilization category to IEC/EN 60947-2			Α
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		7500
415 V 50/60 Hz	Operations		7500
Max. operating frequency		Ops/h	120
Total break time at short-circuit		ms	< 10
Terminal capacity			
Standard equipment			Box terminal
Optional accessories			Screw connection Tunnel terminal connection on rear
Round copper conductor			
Box terminal			
Solid		mm <sup>2</sup>	1 x (10 - 16)

			2 x (6 - 16)
Stranded		mm <sup>2</sup>	1 x (10 - 70) <sup>3)</sup> 2 x (6-25)
			$^{3)}$ Up to 95 $\mathrm{mm^2}\mathrm{can}$ be connected depending on the cable manufacturer.
Tunnel terminal			
Solid		mm <sup>2</sup>	1 x 16
Stranded			
1-hole		mm <sup>2</sup>	1 x (25 - 95)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm <sup>2</sup>	1 x (10 - 16) 2 x (6 - 16)
Stranded		mm <sup>2</sup>	1 x (10 - 70) <sup>3)</sup> 2 x 25
			$^{3)}$ Up to 95 $\rm mm^2$ can be connected depending on the cable manufacturer.
Al circular conductor			
Tunnel terminal			
Solid		mm <sup>2</sup>	1 x 16
Stranded			
Stranded		mm <sup>2</sup>	1 x (25 - 95)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm <sup>2</sup>	1 x (10 - 16) 2 x (10 - 16)
Stranded		mm <sup>2</sup>	1 x (25 - 35) 2 x (25 - 35)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	2 x 9 x 0.8
	max.	mm	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			10 - 5
	min.	mm	12 x 5
Control ophics	max.	mm	16 x 5
Control cables		2	1 × (0.75 - 2.5)
		mm <sup>2</sup>	1 × (0.75 - 2.5) 2 × (0.75 - 1.5)

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	50
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	13.2
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.

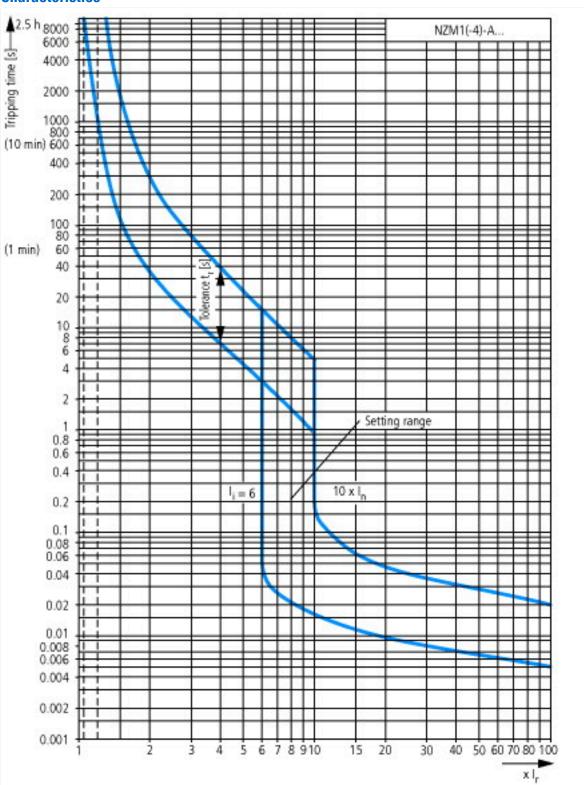
10.3 Degree of protection of ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9 Insulation properties	
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

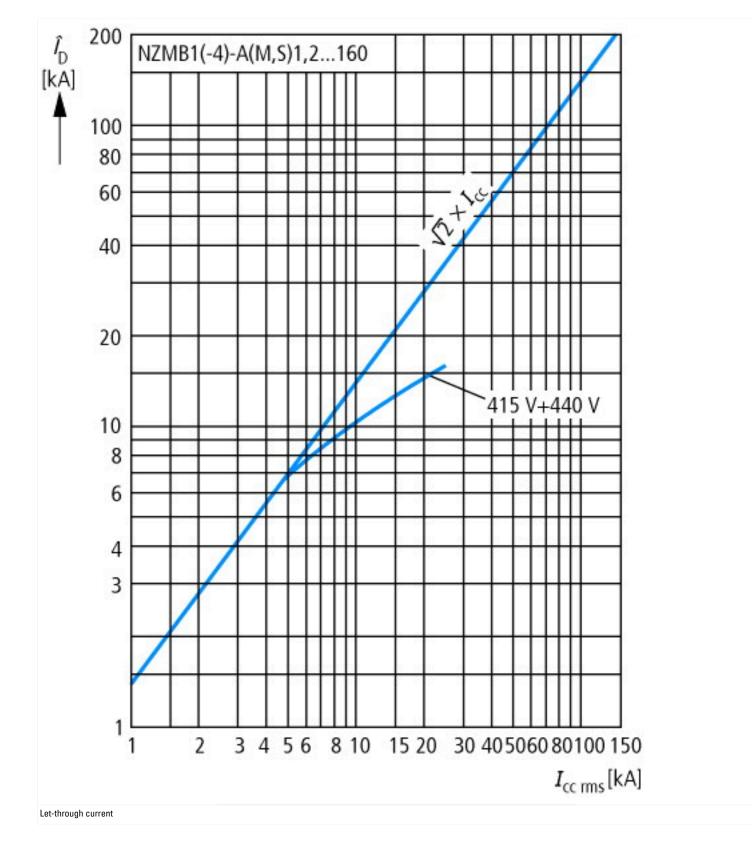
#### **Technical data ETIM 7.0**

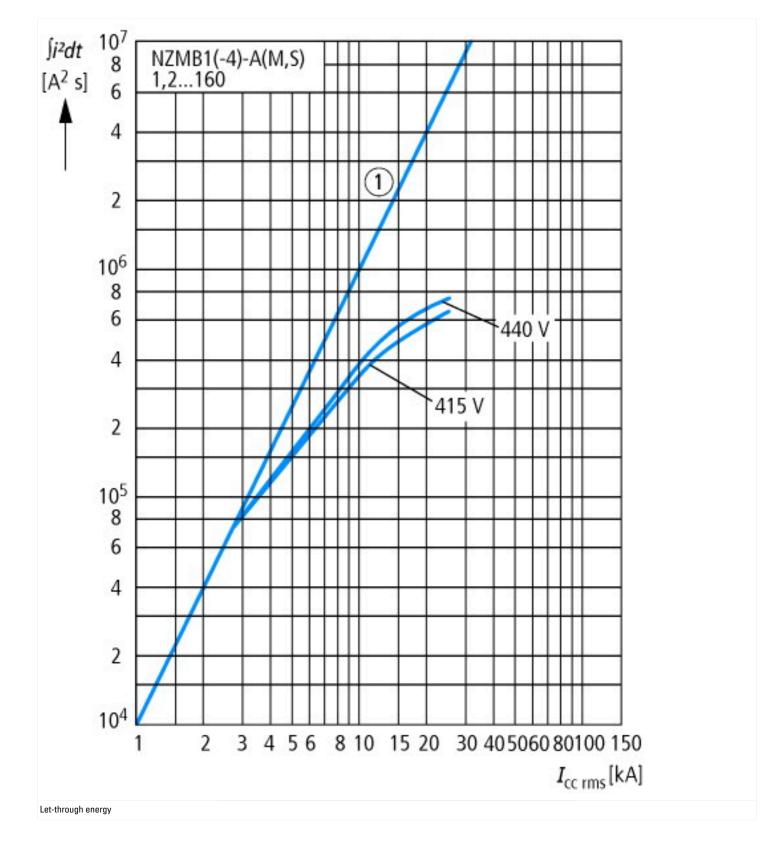
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

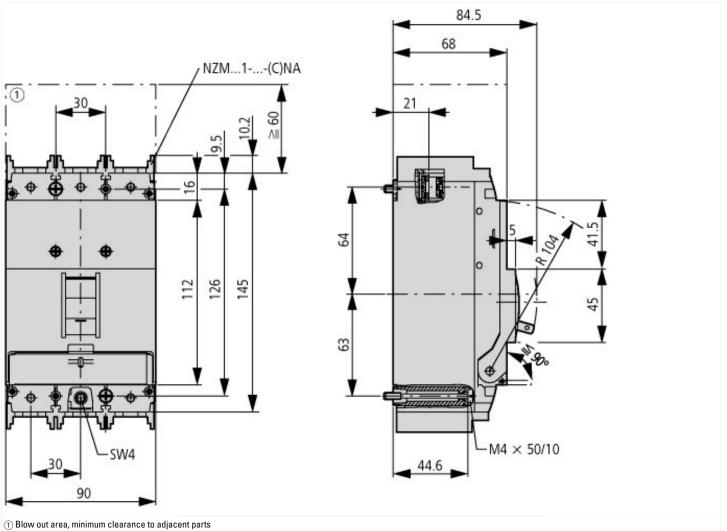
Rated permanent current lu	ŀ	4	50
Rated voltage	١	V	440 - 440
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	k	κA	25
Overload release current setting	ŀ	4	40 - 50
Adjustment range short-term delayed short-circuit release	A	4	0 - 0
Adjustment range undelayed short-circuit release	ŀ	4	300 - 500
Integrated earth fault protection			No
Type of electrical connection of main circuit			Frame clamp
Device construction			Built-in device fixed built-in technique
Suitable for DIN rail (top hat rail) mounting			No
DIN rail (top hat rail) mounting optional			Yes
Number of auxiliary contacts as normally closed contact			0
Number of auxiliary contacts as normally open contact			0
Number of auxiliary contacts as change-over contact			0
With switched-off indicator			No
With under voltage release			No
Number of poles			3
Position of connection for main current circuit			Front side
Type of control element			Rocker lever
Complete device with protection unit			Yes
Motor drive integrated			No
Motor drive optional			No
Degree of protection (IP)			IP20

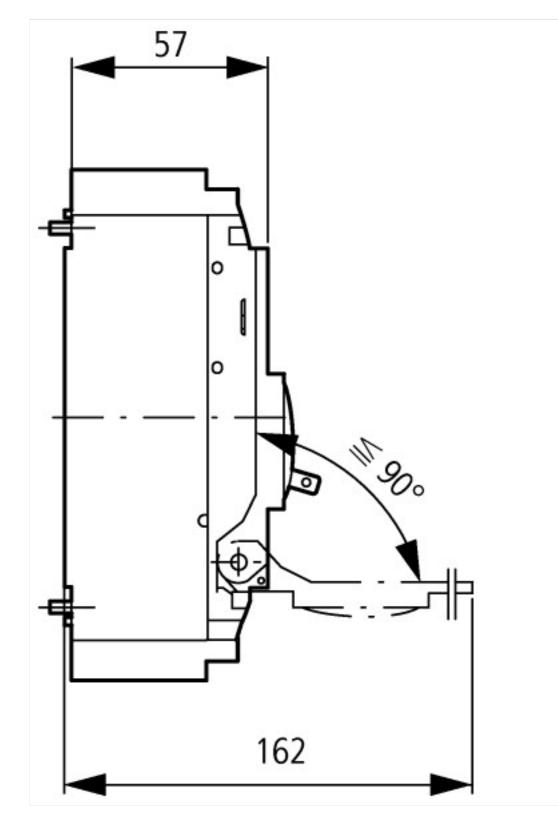












## Additional product information (links)

IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector				
IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01203004Z2015_11.pdf			
Temperature dependency, Derating	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172			
CurveSelect characteristics program	http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm the standard stand			
additional technical information for NZM power switch	ftp://ftp.moeller.net/DOCUMENTATION/PDF/nzm_technic_de_en.pdf			