### **DATASHEET - NZMB1-A32**



Circuit-breaker, 3p, 32A

Part no. NZMB1-A32 Catalog No. 280989

**EL-Nummer** (Norway)

0004358977



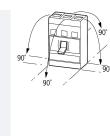


Delivery program			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Thermomagnetic release
Construction size			NZM1
Number of poles			3 pole
Standard equipment			Box terminal
Switching capacity			
400/415 V 50 Hz	I <sub>cu</sub>	kA	25
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	32
Setting range			
Overload trip			
4	l <sub>r</sub>	A	25 - 32
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		350 A fixed
Short-circuit releases			
min.		Α	350

#### **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	c	°C	- 40 - + 70
Operation	c	°C	-25 - +70
Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27	Ç	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	1	V AC	300
Mounting position			Vertical and 90° in all directions



With XFI earth-fault release:
- NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit
- NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit:
- NZM3, N3: vertical, 90° right/left
- NZM4, N4: vertical

			- 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)			Temperature dependency, Derating
Circuit-breakers			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	32
Rated surge voltage invariability	$U_{imp}$		
Main contacts		V	6000
Auxiliary contacts		V	6000
Rated operational voltage	U <sub>e</sub>	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>		
Icu to IEC/EN 60947 test cycle 0-t-C0	lcu	kA	
240 V 50/60 Hz	I <sub>cu</sub>	kA	30
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	25
			25
440 V 50/60 Hz	I <sub>cu</sub>	kA	23
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			A
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			

1 x (10 - 16)

 $Box\ terminal$ Solid

Tunnel terminal       mm²       1 x 16         Stranded       mm²       1 x (25 - 95)         Stranded of terminal and rear-side connection       mm²       1 x (25 - 95)         Bolt terminal and rear-side connection       mm²       1 x (10 - 16)         Solid       mm²       1 x (10 - 16)         Stranded       mm²       1 x (25 - 35)         x (25 - 35)       2 x (25 - 35)				2 x (6 - 16)
Tunnel terminal	Stranded		mm <sup>2</sup>	1 x (10 - 70) <sup>3)</sup> 2 x (6-25)
Solid         mm²         1 k (25 - 59)           Bolt terminal and rear-side connection         mm²         1 k (25 - 59)           Direct on the switch         mm²         1 k (10 - 16)           Solid         mm²         1 k (10 - 16)           Strandad         1 k (10 - 16)         1 k (10 - 10)           Victualar conductor         1 k (10 - 20)         1 k (10 - 20)           Solid         mm²         1 k (10 - 20)         1 k (10 - 20)           Solid         mm²         1 k (10 - 20)         1 k (10 - 20)           Solid         mm²         1 k (10 - 20)         1 k (10 - 20)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59)           Solid         mm²         1 k (25 - 59)         1 k (25 - 59) <td< td=""><td></td><td></td><td></td><td><math display="inline">^{3)}\mathrm{Up}</math> to 95 <math display="inline">\mathrm{mm^2}\mathrm{can}</math> be connected depending on the cable manufacturer.</td></td<>				$^{3)}\mathrm{Up}$ to 95 $\mathrm{mm^2}\mathrm{can}$ be connected depending on the cable manufacturer.
Stranded	Tunnel terminal			
1-hole	Solid		$\text{mm}^2$	1 x 16
	Stranded			
	1-hole		$mm^2$	1 x (25 - 95)
Solid Stranded Stranded Stranded Stranded Stranded Stranded Stranded Solid Stranded Solid Stranded Solid Stranded Solid Stranded Stranded Solid Sol	Bolt terminal and rear-side connection			
Stranded	Direct on the switch			
	Solid		mm <sup>2</sup>	1 x (10 - 16) 2 x (6 - 16)
Tunnel terminal   Tunnel ter	Stranded		mm <sup>2</sup>	
Tunnel terminal         Image: 1 x 16           Stranded         1 x (25 - 95)           Bolt terminal and rear-side connection         1 x (25 - 95)           Bolt terminal and rear-side connection         1 x (25 - 95)           Solid         mm²         1 x (10 - 16)           Stranded         x x (10 - 16)         x (10 - 16)           Stranded         x x (10 - 16)         x (25 - 35)           Su strip (number of segments x width x segment thickness)         x x (25 - 35)           Box terminal				$^{3)}\mathrm{Up}$ to 95 $\mathrm{mm^2}\mathrm{can}$ be connected depending on the cable manufacturer.
Solid Stranded Stranded Stranded Bolt terminal and rear-side connection Direct on the switch Stranded Stranded Solid Stranded Solid Stranded Solid Stranded	Al circular conductor			
Stranded Stranded Stranded  Stranded  Bolt terminal and rear-side connection  Direct on the switch  Solid Stranded	Tunnel terminal			
Stranded mm² 1 x (25 - 95)  Bolt terminal and rear-side connection  Direct on the switch  Solid  Stranded  Stranded  Stranded  Stranded  Stranded  Stranded  Stranded  Stranded  Mm² 1 x (10 - 16) 2 x (25 - 35) 2 x (25 - 35)  Stranded  Stranded  Min. mm 2 x 9 x 0.8  Sopper busbar (width x thickness)  Bolt terminal and rear-side connection  Screw connection  Screw connection  Screw connection  M6  M6  In x mm 12 x 5	Solid		$mm^2$	1 x 16
Bolt terminal and rear-side connection  Direct on the switch  Solid  Stranded  Stranded  Stranded  Min.  min.  min.  min.  min.  min.  pass 9 x 9 x 0.8  Copper busbar (width x thickness)  Bolt terminal and rear-side connection  Screw connection  Screw connection  Direct on the switch  min.  Mi	Stranded			
Direct on the switch	Stranded		$mm^2$	1 x (25 - 95)
Solid         mm²         1 x (10 - 16) 2 x (10 - 16)           Stranded         mm²         1 x (25 - 35) 2 x (25 - 35)           Bu strip (number of segments x width x segment thickness)         mm²         1 x (25 - 35) 2 x (25 - 35)           Box terminal         min.         mm         2 x 9 x 0.8           Copper busbar (width x thickness)         mm         9 x 9 x 0.8           Bolt terminal and rear-side connection         mm         9 x 9 x 0.8           Screw connection         M6           Direct on the switch         min.         mm         12 x 5	Bolt terminal and rear-side connection			
Stranded         mm²         1 x (25 - 35)         2 x (25 - 35)           Su strip (number of segments x width x segment thickness)         rmm²         1 x (25 - 35)         x (25 - 35)           Box terminal         min.         mm         2 x 9 x 0.8           Copper busbar (width x thickness)         mm         9 x 9 x 0.8           Copper busbar (width x thickness)         mm         M6           Screw connection         M6         M6           Direct on the switch         min.         mm         12 x 5	Direct on the switch			
2 x (25 - 35)  Busterminal  min. mm 2 x 9 x 0.8  Copper busbar (width x thickness)  Bolt terminal and rear-side connection  Screw connection  Direct on the switch  min. mm 12 x 5	Solid		mm <sup>2</sup>	
Box terminal         min.         mm         2x 9 x 0.8           copper busbar (width x thickness)         max.         mm         9x 9 x 0.8           Bolt terminal and rear-side connection         mm         F         F           Screw connection         M6         M6           Direct on the switch         min.         mm         12x 5	Stranded		mm <sup>2</sup>	
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  Direct on the switch min. mm 12 x 5	Cu strip (number of segments x width x segment thickness)			
max. mm 9 x 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 12 x 5	Box terminal			
Copper busbar (width x thickness)  Bolt terminal and rear-side connection  Screw connection  Direct on the switch  min. mm 12 x 5		min.	mm	
Bolt terminal and rear-side connection  Screw connection  Direct on the switch  min. mm 12 x 5			mm	9 x 9 x 0.8
Screw connection M6  Direct on the switch M6  min. mm 12 x 5		mm		
Direct on the switch min. mm 12 x 5				
min. mm 12 x 5				Mb
	Direct on the switch	mai m	mm	12 v E
IIIdX.				
Control cables	Control cables	ıllax.	IIIIII	10.4.3
	CONTROL CAMES		2	1 v /0.75 - 2.5)
$mm^2                                   $			mm <sup>2</sup>	2 x (0.75 - 1.5)

## **Design verification as per IEC/EN 61439**

Dooigii voimoution do por 120/214 or 100			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	32
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	9.31
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.

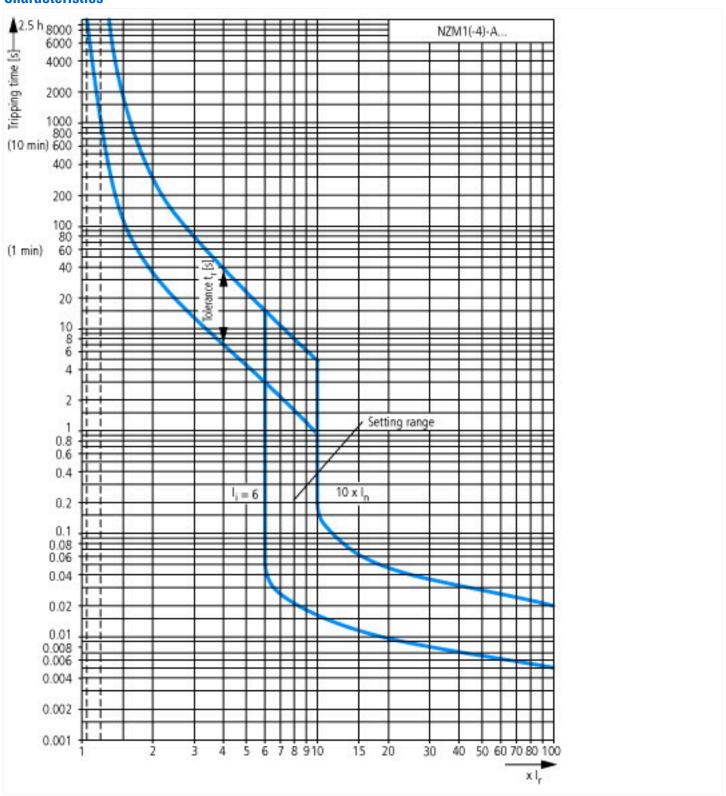
#### **Technical data ETIM 7.0**

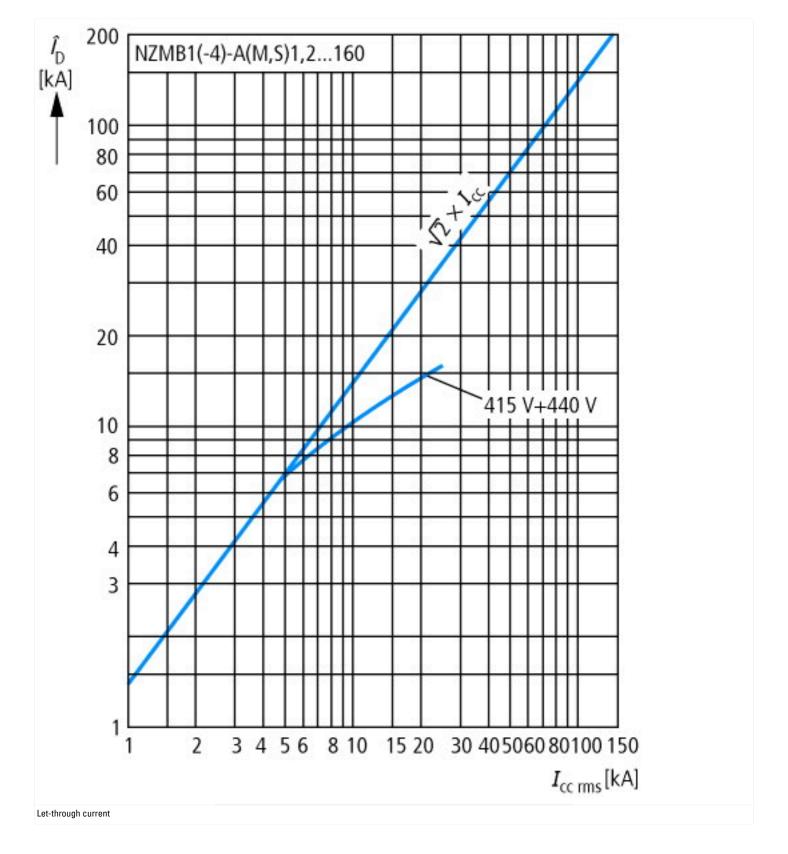
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

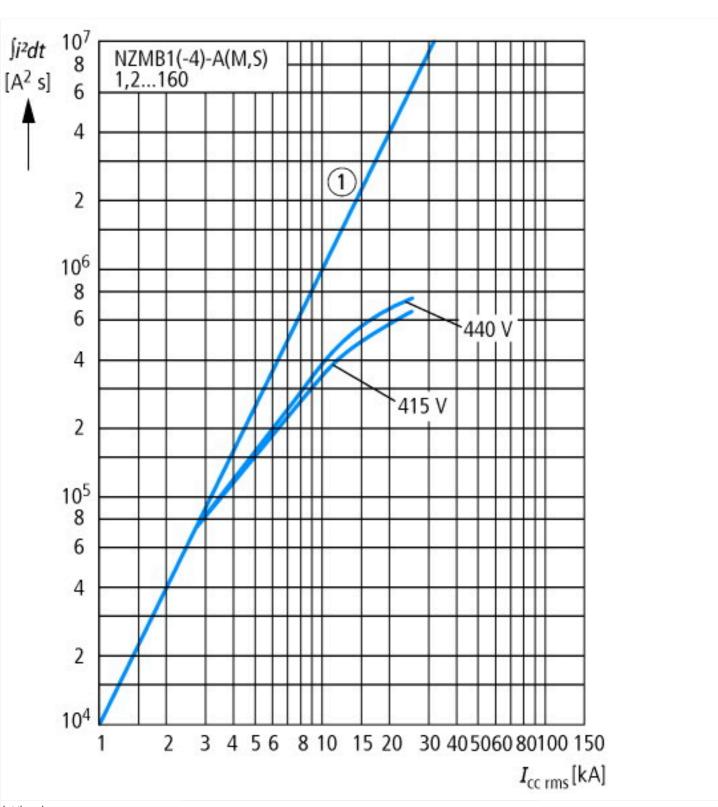
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

Rated voltage Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit breaking capacity Icu at 400 V, 50 Hz Rated short-circuit release Rate	protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])		
Rated short-circuit breaking capacity lou at 400 V, 50 Hz  Diverload release current setting  A 25 - 32  Adjustment range short-term delayed short-circuit release  A 0 - 0  Adjustment range undelayed short-circuit release  A 350 - 350  Integrated earth fault protection  Type of electrical connection of main circuit  Device construction  Suitable for DIN rail (top hat rail) mounting  DIN rail (top hat rail) mounting optional  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Noth the switched-off indicator  With switched-off indicator  With under voltage release  Noth the switched off connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional	Rated permanent current lu	Α	32
Deviroad release current setting A 25 - 32 Adjustment range short-term delayed short-circuit release A 0 - 0 Adjustment range undelayed short-circuit release A 350 - 350 Integrated earth fault protection of main circuit Integrated earth fault protection unit Integrated earth fault protection unit Integrated earth fault protection integrated Integrat	Rated voltage	V	440 - 440
Adjustment range short-term delayed short-circuit release A 350 - 350  Adjustment range undelayed short-circuit release A 350 - 350  No  Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DiN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact With switched-off indicator With switched-off indicator With under voltage release Number of poles Position of connection for main current circuit Front side Rocker lever Complete device with protection unit Motor drive optional Motor drive optional Motor drive optional  A 350 - 350  No  No  No  No  Rocker lever  Ves  Motor drive integrated Motor drive optional	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	25
Adjustment range undelayed short-circuit release A 350 - 350 Integrated earth fault protection No Type of electrical connection of main circuit Device construction Built-in device fixed built-in technique Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as normally open contact O Number of auxiliary contacts as change-over contact O Number of auxiliary contacts as change-over contact O No With switched-off indicator No With under voltage release No No Number of poles Position of connection for main current circuit Front side Type of control element Complete device with protection unit Wood of drive integrated Motor drive integrated Motor drive optional	Overload release current setting	Α	25 - 32
Integrated earth fault protection Type of electrical connection of main circuit Device construction Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Number of of auxiliary contacts as change-over contact No	Adjustment range short-term delayed short-circuit release	Α	0 - 0
Type of electrical connection of main circuit  Device construction  Built-in device fixed built-in technique  Suitable for DIN rail (top hat rail) mounting  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  With switched-off indicator  No  With under voltage release  No  No  No  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional	Adjustment range undelayed short-circuit release	Α	350 - 350
Device construction  Built-in device fixed built-in technique  No  No  DIN rail (top hat rail) mounting optional  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  No  With switched-off indicator  With under voltage release  No  No  No  No  No  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional  Built-in device fixed built-in technique  No  Ro  Motor drive optional	Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting DIN rail (top hat rail) mounting optional Yes  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  No  With switched-off indicator  With under voltage release  No  No  Number of poles  3  Position of connection for main current circuit  Front side  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional	Type of electrical connection of main circuit		Frame clamp
DIN rail (top hat rail) mounting optional  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  No  With switched-off indicator  With under voltage release  No  Number of poles  3  Position of connection for main current circuit  Front side  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional  No  Motor drive optional	Device construction		Built-in device fixed built-in technique
Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  No  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  Complete device with protection unit  Yes  Motor drive integrated  No  Motor drive optional  No	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  No  With switched-off indicator  No  With under voltage release  No  Number of poles  3  Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive integrated  Motor drive optional  O  No  No  No  No  No  No  No  No  No	DIN rail (top hat rail) mounting optional		Yes
Number of auxiliary contacts as change-over contact  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  Complete device with protection unit  Wood of trive integrated  No  Motor drive optional	Number of auxiliary contacts as normally closed contact		0
With switched-off indicator  With under voltage release  No  Number of poles  Societion of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive optional  No  No  No  No  No  No  No  No  No  N	Number of auxiliary contacts as normally open contact		0
With under voltage release  No Number of poles  3 Position of connection for main current circuit  Type of control element  Complete device with protection unit  Wotor drive optional  No No  No No No No No No No No No No N	Number of auxiliary contacts as change-over contact		0
Number of poles  3 Position of connection for main current circuit Front side Type of control element Complete device with protection unit Yes Motor drive integrated No Motor drive optional No	With switched-off indicator		No
Position of connection for main current circuit  Type of control element  Complete device with protection unit  Motor drive optional  Front side  Rocker lever  Yes  No  No	With under voltage release		No
Type of control element  Complete device with protection unit  Motor drive optional  Rocker lever  Yes  No  No	Number of poles		3
Complete device with protection unit  Yes  Motor drive integrated  No  Motor drive optional  No	Position of connection for main current circuit		Front side
Motor drive integrated No No	Type of control element		Rocker lever
Motor drive optional No	Complete device with protection unit		Yes
	Motor drive integrated		No
Degree of protection (IP)	Motor drive optional		No
	Degree of protection (IP)		IP20

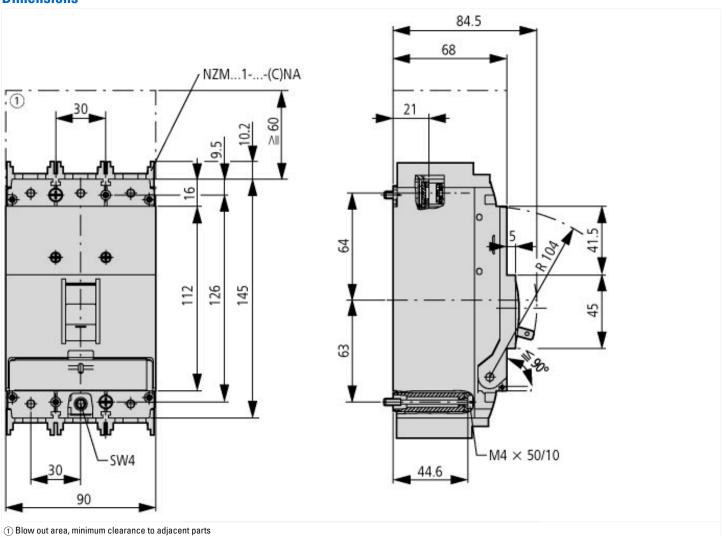
#### **Characteristics**

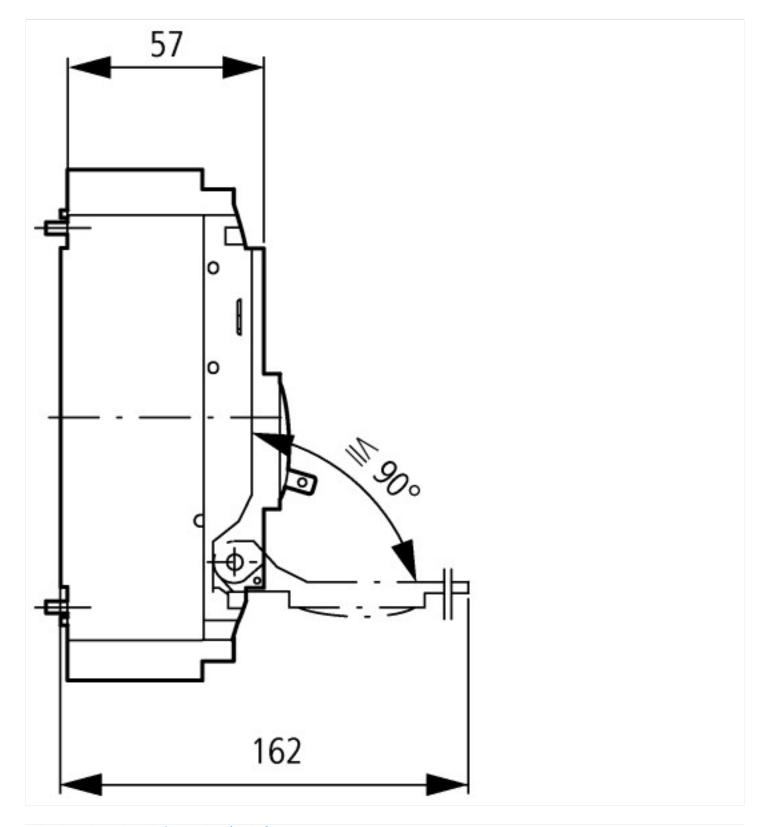






## **Dimensions**





# Additional product information (links)

IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector		
IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnector	https://es-assets.eaton.com/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	
additional technical information for NZM power switch	https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf	