DATASHEET - NZMH3-VE630-BT

Part no.

Catalog No.



Circuit-breaker, 3p, 630A, box terminals

NZMH3-VE630-BT 111732

FAT•N° Powering Business Worldwide"

Similar to illustration

Technical data General

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	40 - + 70
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 EN 61140			
Between auxiliary contacts and main contacts		V AC	500
between the auxiliary contacts		V AC	300
Weight		kg	6.34
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 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	$I_n = I_u$	A	630
Rated surge voltage invariability	U _{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U _e	V AC	690
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V	1000
Use in unearthed supply systems		V	≦ 690
Switching capacity			
Rated short-circuit making capacity	I _{cm}		
240 V	I _{cm}	kA	330
400/415 V	I _{cm}	kA	330
440 V 50/60 Hz	I _{cm}	kA	286

525 V 50/60 Hz	I _{cm}	kA	143
690 V 50/60 H	Ic	kA	74
Rated short-circuit breaking capacity I _{cn}	I _{cn}		
Icu to IEC/EN 60947 test cycle 0-t-C0	Icu	kA	
240 V 50/60 Hz	l _{cu}	kA	150
400/415 V 50/60 Hz	I _{cu}	kA	150
440 V 50/60 Hz	l _{cu}	kA	130
525 V 50/60 Hz	I _{cu}	kA	65
690 V 50/60 Hz	l _{cu}	kA	35
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	lcs	kA	
240 V 50/60 Hz	I _{cs}	kA	150
400/415 V 50/60 Hz	I _{cs}	kA	150
440 V 50/60 Hz	I _{cs}	kA	130
525 V 50/60 Hz	I _{cs}	kA	33
690 V 50/60 Hz	I _{cs}	kA	9
	-03		Aximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Rated short-time withstand current			is a second and series ing supporty of the should be added.
t = 0.3 s	I _{cw}	kA	3.3
t=1s	I _{cw}	kA	3.3
	CW	NA	
Utilization category to IEC/EN 60947-2	Operations		A 15000
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release) Lifespan, electrical	operations		15000
AC-1			
400 V 50/60 Hz	Operations		5000
415 V 50/60 Hz	Operations		5000
690 V 50/60 Hz	Operations		3000
AC3	operatione		
400 V 50/60 Hz	Operations		2000
415 V 50/60 Hz	Operations		2000
690 V 50/60 Hz	Operations		2000
Max. operating frequency		Ops/h	60
Total downtime in a 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 ²	2 x 16
Stranded		mm ²	1 x (35 - 240) 2 x (25-120)
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
1-hole		mm ²	1 x (16 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm ²	1 x 16 2 x 16
Stranded		mm ²	1 x (25 - 240) 2 x (25 - 240)
Connection width extension		mm ²	
Connection width extension			2 × 200
Connection width extension Al circular conductor		mm ²	2 x 300

Tunnel terminal			
Solid		mm ²	1 x 16
Stranded			
Stranded		mm ²	1 x (25 - 185) ²⁾
Double hole		mm ²	1 x (50 - 240) 2 x (50 - 240)
			$^{2)}$ Up to 240 $\rm mm^2$ can be connected depending on the cable manufacturer.
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	6 x 16 x 0.8
	max.	mm	10 x 24 x 1.0 + 5 x 24 x 1.0 (2 x) 8 x 24 x 1.0
Bolt terminal and rear-side connection			
Flat copper strip, with holes	min.	mm	6 x 16 x 0.8
Flat copper strip, with holes	max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0
Connection width extension		mm	(2 x) 10 x 50 x 1.0
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M10
Direct on the switch			
	min.	mm	20 x 5
	max.	mm	30 x 10 + 30 x 5
Connection width extension		mm	
Connection width extension	max.	mm	2 x (10 x 50)
Control cables			
		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

Design verification as per IEC/EN 61439

Design vernication as per 120/214 01455			
Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	А	630
Equipment heat dissipation, current-dependent	P _{vid}	W	119.07
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.

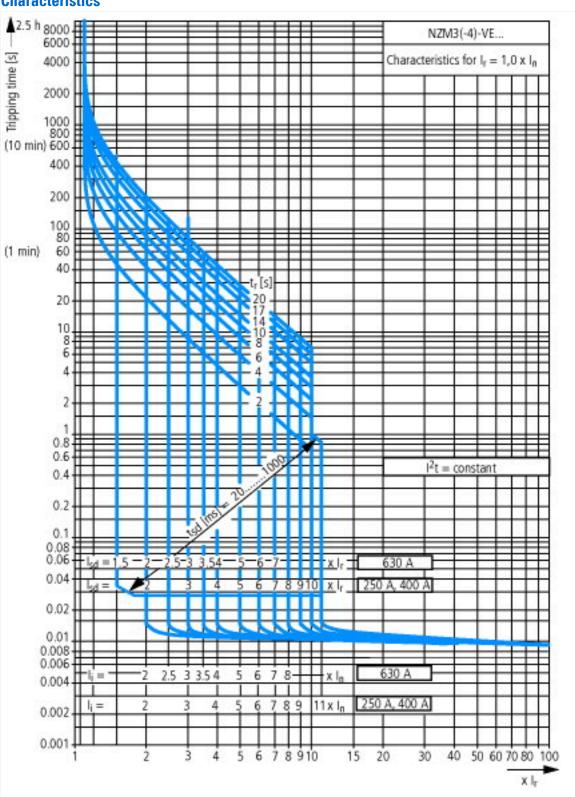
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	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

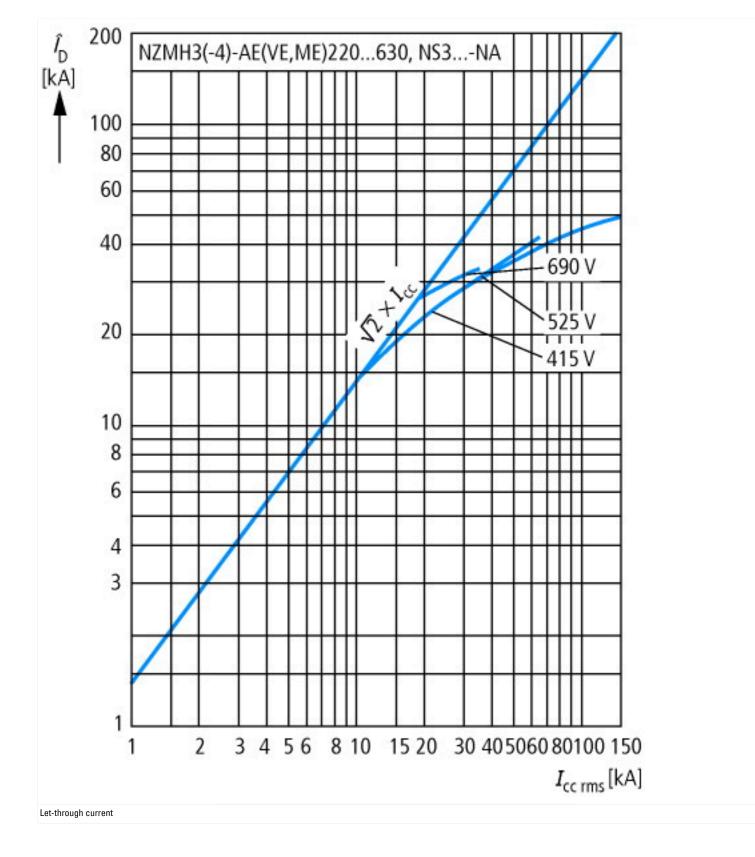
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

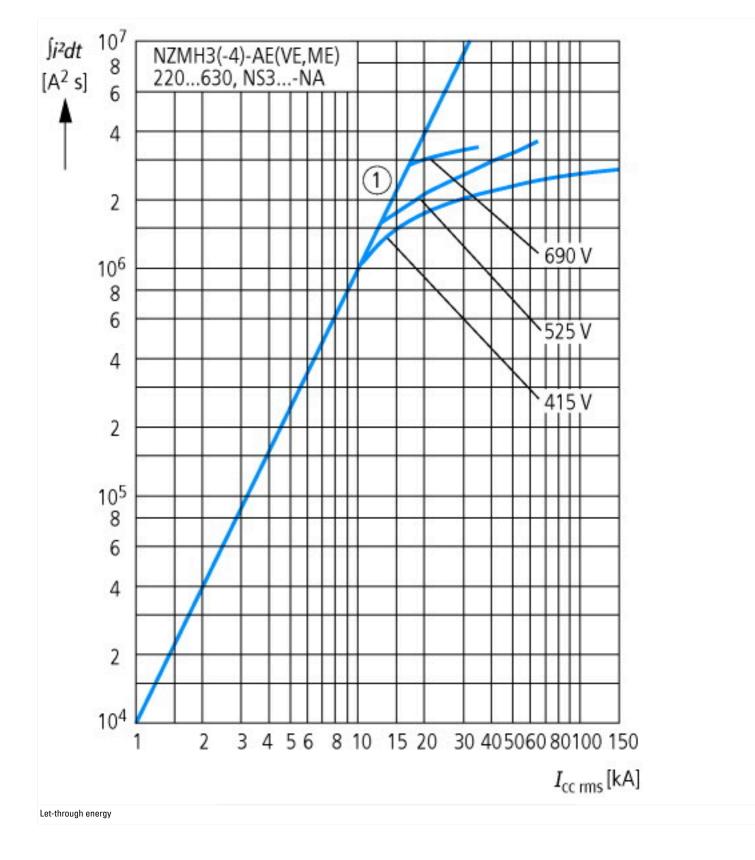
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

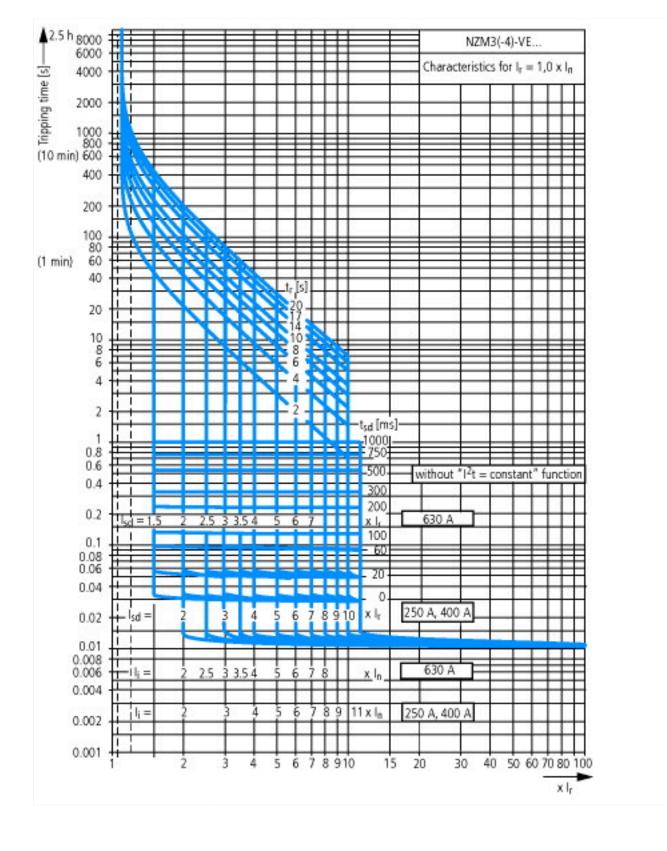
Aid parament current lu A Biol Rated vafage F N Rated vafage F N Rated vafage accurcut strating F N Adjustnat range short-ticuit release F N Rote of the first short release F N Rote of the first short release F N Rote of the first short release F N Name of short release F N Name of auxiliary contexts as normally coles context F N Name of auxiliary contexts as normally coles context F N Name of auxiliary contexts as normally coles context F N Name of auxiliary contexts as normally coles context F N Name of auxiliary contexts as normally coles context F N Name of auxiliary contexts as normally coles context N N Name of auxiliary context as normally coles context F N Name of auxiliary context as normally coles context N N Na			
Atel short-circuit breaking capacity lou at 400 V, 50 Hz KA 5 Overload release current setting A 15 - 530 Adjustment range short-circuit release A 72 - 4410 Adjustment range undelayed short-circuit release A 280 - 5040 Integrated earth fault protection Fame clamp No Type of electrical connection of main circuit B Bull-in device fixed built-in technique Divice construction Fame clamp No Divice for DIN rail (top hat rail) mounting Fame clamp No Number of auxiliary contacts as normally closed contact Fame Clamp No Number of auxiliary contacts as change-over contact Fame Clamp No With under voltage release No No Number of poles Fame Side Side Number of poles Fame Side Side Number of poles Fame Side Side Number of poles Side Side Number of poles Fame Side Side Number of poles Fame Side Side Number of poles Fam	Rated permanent current lu	А	630
Overload release current setting 15 - 630 Adjustment range short-terr uit release 72 - 4410 Adjustment range undelayed short-circuit release 80 - 5040 Integrated earth fault protection 80 - 5040 Type of electrical connection of main circuit 80 - 5040 Device construction 80 - 5040 Suitable for DIN rail (top hat rail) mounting 80 - 5040 DIN rail (top hat rail) mounting optional 80 - 5040 Number of auxiliary contacts as normally closed contact 90 - 6040 Number of auxiliary contacts as change-over contact 90 - 6040 With under voltage release 80 - 6040 Number of poles 80 - 6040 Number of poles 80 - 6040 Vith under voltage release 80 - 6040 Number of poles 80 - 6040 None contaction orm in current circuit 80 - 6040 Type of control element 80 - 6040 Complete device with protection unit	Rated voltage	V	690 - 690
Adjustment range short-err delayed short-circuit release A A Adjustment range undelayed short-circuit release F 1260 - 5040 Integrated earth fault protection No No Type of electrical connection of main circuit Built-in device fixed built-in technique Built-in device fixed built-in technique Suitable for DN rail (top hat rail) mounting optional No No Number of auxiliary contacts as normally cosed contact No No Number of auxiliary contacts as change-over contact No No With under voltage release No No No Number of polici No No No No You for control form ani current circuit No	Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Adjustment ang undelayed short-circuit release IBC 5040 Integrated earth fault protection Fame clamp Type of electrical connection of main circuit Fame clamp Davice construction Fame clamp Suitable for DIN rail (top hat rail) mounting Built-in device fixed built-in technique DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as normally closed contact O With under voltage release Sole Number of plosin Sole Position of connection for main current circuit Sole You of control element Sole Complete device with protection unit Sole Motor drive integrated Sole	Overload release current setting	А	315 - 630
Integrate dearth failt protection No Type of electrical connection of main circuit Frame clamp Device construction Built-in device fixed built-in technique Davice construction Built-in device fixed built-in technique Suitable for DIN rail (top hat rail) mounting No DIN rail (top hat rail) mounting optional No Number of auxiliary contacts as normally closed contact No Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as change-over contact No Number of poles No Number of poles Social Connection formain current circuit Nope of control element Social Control element Complet edvice with protection unit Social Control element Motor drive integrated <td>Adjustment range short-term delayed short-circuit release</td> <td>А</td> <td>472 - 4410</td>	Adjustment range short-term delayed short-circuit release	А	472 - 4410
Type of electrical connection of main circuit Frame clamp Davice construction Built-in device fixed built-in technique Suitable for DIN rail (top hat rail) mounting Sold No DIN rail (top hat rail) mounting optional Sold No Number of auxiliary contacts as normally closed contact Sold O Number of auxiliary contacts as normally contact Sold O Number of auxiliary contacts as change-over contact Sold O With under voltage release Sold No Number of connection for main current circuit Sold No Type of control element Sold No Complete device with protection unit Sold No Rourd five integrated Sold Sold Motor drive optional Sold Sold	Adjustment range undelayed short-circuit release	А	1260 - 5040
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 No Number of auxiliary contacts as normally closed contact No Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as normally closed contact O Number of auxiliary contacts as change-over contact Mo With under voltage release No Number of plos No Position of connection for main current circuit Front side Type of control element Food scherolement Complete device with protection unit Set of scherolement Motor drive optional Yes Motor drive optional Yes Motor drive optional Yes Motor drive optional Yes	Integrated earth fault protection		No
Suitable for DIN rail (top hat rail) mounting Image: Comparison of the com	Type of electrical connection of main circuit		Frame clamp
DN rail (top hat rail) mounting optional No 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 0 With under voltage release No Number of function of connection for main current circuit Image: Control element Type of control element Image: Control element Complete device with protection unit Image: Control element Motor drive integrated Image: Control element Motor drive optional Image: Control element	Device construction		Built-in device fixed built-in technique
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 0 With under voltage release 0 Number of poles No Position of connection for main current circuit 6 3 Type of control element 8 8 Complete device with protection unit 8 8 Motor drive integrated 6 9 Motor drive optional 6 8	Suitable for DIN rail (top hat rail) mounting		No
Number of auxiliary contacts as normally open contact 6 0 Number of auxiliary contacts as change-over contact 0 0 With switched-off indicator 0 0 With under voltage release No No Number of poles 3 0 Position of connection for main current circuit Fort side Rocker lever Complete device with protection unit Fort side No Motor drive integrated Yes No Motor drive optional Yes No	DIN rail (top hat rail) mounting optional		No
Number of auxiliary contacts as change-over contact Image: Content of auxiliary contacts as change-over contact Image: Content of auxiliary contacts as change-over contact With switched-off indicator Image: Content of auxiliary contacts Image: Content of au	Number of auxiliary contacts as normally closed contact		0
With switched-off indicatorImage: Solution of connection for main current circuitImage: Solution connection for main current circuitImage: Solution connection connection for main current circuitImage: Solution connection connection for main current circuitImage: Solution connection connec	Number of auxiliary contacts as normally open contact		0
With under voltage release No Number of poles S Position of connection for main current circuit Font side Type of control element Font side Complete device with protection unit Font side Motor drive integrated Font side Motor drive optional Font side	Number of auxiliary contacts as change-over contact		0
Number of poles 3 Position of connection for main current circuit Model Font side Type of control element Model Model Complete device with protection unit Model Model Motor drive integrated Model Model Motor drive optional Model Model	With switched-off indicator		No
Position of connection for main current circuit Position Ford Sector Type of control element Ford Sector Rocker lever Complete device with protection unit Ford Yes Motor drive integrated Ford No Motor drive optional Ford Yes	With under voltage release		No
Type of control element Mode Rocker lever Complete device with protection unit Mode Mode Motor drive integrated Mode Mode Motor drive optional Mode Mode	Number of poles		3
Complete device with protection unit Motor drive integrated Motor drive optional Motor	Position of connection for main current circuit		Front side
Motor drive optional Motor drive optional <td>Type of control element</td> <td></td> <td>Rocker lever</td>	Type of control element		Rocker lever
Motor drive optional Yes	Complete device with protection unit		Yes
	Motor drive integrated		No
Degree of protection (IP) IP20	Motor drive optional		Yes
	Degree of protection (IP)		IP20



Characteristics







10/16/2018

