## **DATASHEET - NZMH2-4-A20-SVE**



Circuit-breaker, 4p, 20A, plug-in module

NZMH2-4-A20-SVE Part no. Catalog No. 113396

**EL-Nummer** 

0004357070

(Norway)



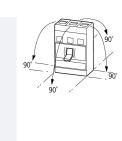
Similar to illustration

Delivery program			
Product range			Circuit-breaker
Protective function			System and cable protection
Standard/Approval			IEC
Installation type			Plug-in units
Release system			Thermomagnetic release
Construction size			NZM2
Description			Set value in neutral conductor is synchronous with set value Ir of main pole.
Number of poles			4 pole
Standard equipment			Screw connection
Switching capacity			
400/415 V 50 Hz	I <sub>cu</sub>	kA	150
Rated current = rated uninterrupted current			
Rated current = rated uninterrupted current	$I_n = I_u$	Α	20
Neutral conductor	% of phase conductor	CSA	100
Setting range			
Overload trip			
中	l <sub>r</sub>	A	15 - 20
Main pole	I <sub>r</sub>	Α	15 - 20
Short-circuit releases			
Non-delayed	$I_i = I_n x \dots$		350 A fixed

#### **Technical data**

General

donoral		
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	3.5
Mounting position		Vertical and 90° in all directions



With XFI earth-fault release: - NZM1, N1, NZM2, N2: vertical and 90° in all directions

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	$I_n = I_u$	Α	20
Rated surge voltage invariability	$U_{\text{imp}}$		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U <sub>e</sub>	V AC	690
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V	1000
Use in unearthed supply systems		V	≦ 690

#### Switching canacity

Lifespan, electrical AC-1

400 V 50/60 Hz

Switching capacity			
Rated short-circuit making capacity	I <sub>cm</sub>		
240 V	I <sub>cm</sub>	kA	330
400/415 V	I <sub>cm</sub>	kA	330
440 V 50/60 Hz	I <sub>cm</sub>	kA	286
525 V 50/60 Hz	I <sub>cm</sub>	kA	105
690 V 50/60 H	Ic	kA	40
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	150
400/415 V 50/60 Hz	I <sub>cu</sub>	kA	150
440 V 50/60 Hz	I <sub>cu</sub>	kA	130
525 V 50/60 Hz	I <sub>cu</sub>	kA	50
690 V 50/60 Hz	I <sub>cu</sub>	kA	20
Ics to IEC/EN 60947 test cycle 0-t-C0-t-C0	Ics	kA	
240 V 50/60 Hz	I <sub>cs</sub>	kA	150
400/415 V 50/60 Hz	Ics	kA	150
440 V 50/60 Hz	I <sub>cs</sub>	kA	130
525 V 50/60 Hz	I <sub>cs</sub>	kA	37.5
690 V 50/60 Hz	I <sub>cs</sub>	kA	5
			Maximum 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			
t = 0.3 s	I <sub>cw</sub>	kA	1.9
t = 1 s	I <sub>cw</sub>	kA	1.9
Utilization category to IEC/EN 60947-2			A
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000

Operations

10000

415 V 50/60 Hz	Oneretions		10000
·	Operations		10000
690 V 50/60 Hz	Operations		7500
AC3	0		0500
400 V 50/60 Hz	Operations		6500
415 V 50/60 Hz	Operations		6500
690 V 50/60 Hz	Operations		5000
Max. operating frequency		Ops/h	120
Total break time at short-circuit		ms	< 10
Terminal capacity Standard equipment			Screw connection
			NZM2-4-XSVS
Accessories required			
Optional accessories			Box terminal 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 (25 - 185) 2 x (25 - 70)
Tunnel terminal			
Solid		$mm^2$	1 x 16
Stranded			
1-hole		mm <sup>2</sup>	1 x (25 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		2	1 x (10 - 16)
Cond		mm <sup>2</sup>	2 x (6 - 16)
Stranded		mm <sup>2</sup>	1 x (25 - 185) 2 x (25 - 70)
Al circular conductor			
Tunnel terminal			
Solid		$\text{mm}^2$	1 x 16
Stranded			
Stranded		mm <sup>2</sup>	1 x (25 - 185)
Cu strip (number of segments x width x segment thickness)			
Box terminal			
	min.	mm	2×9×0.8
	max.	mm	10 x 16 x 0.8
Bolt terminal and rear-side connection			(2x) 8 x 15.5 x 0,8
Flat copper strip, with holes	min	mm	2 x 16 x 0.8
Flat copper strip, with holes	min.	mm	10 x 24 x 0.8
Copper busbar (width x thickness)	max.	mm	10 A Z4 A U.U
	mm		
Bolt terminal and rear-side connection  Screw connection			M8
			IVIO
Direct on the switch			16.45
	min.	mm	16 x 5
Cantral cables	max.	mm	24 x 8
Control cables		2	1/075 25\
		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
Equipment heat dissipation, current-dependent	$P_{vid}$	W	5.1
Operating ambient temperature min.		°C	-25

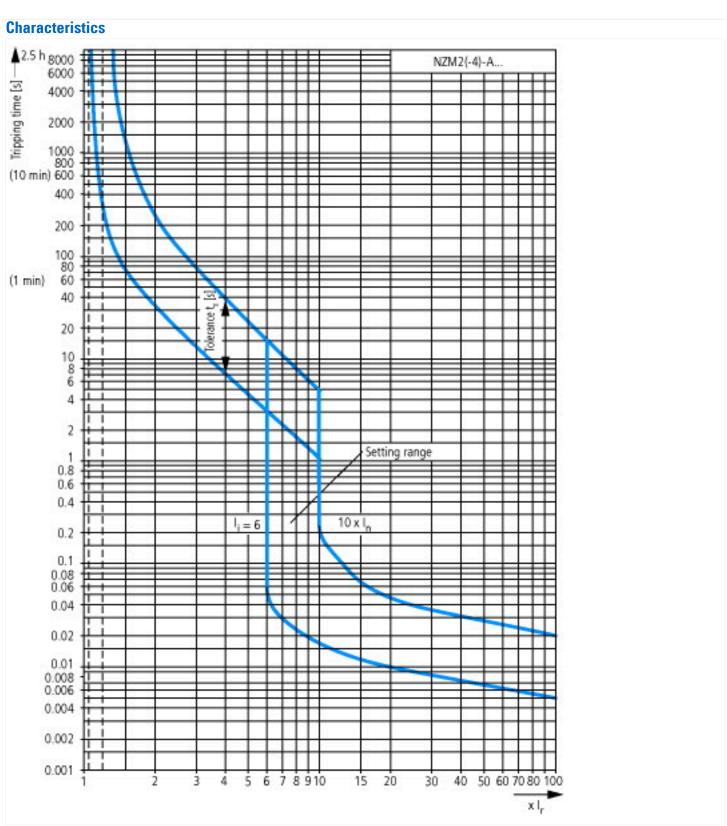
°C	70
	Meets the product standard's requirements.
	Does not apply, since the entire switchgear needs to be evaluated.
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	Does not apply, since the entire switchgear needs to be evaluated.
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	Is the panel builder's responsibility.
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	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
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	The device meets the requirements, provided the information in the instruction
	°C

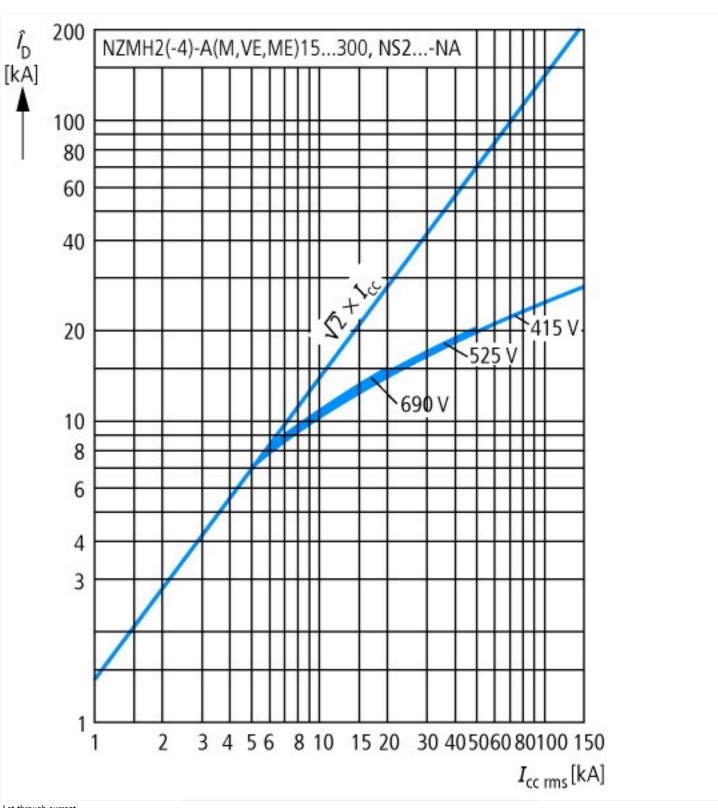
## **Technical data ETIM 7.0**

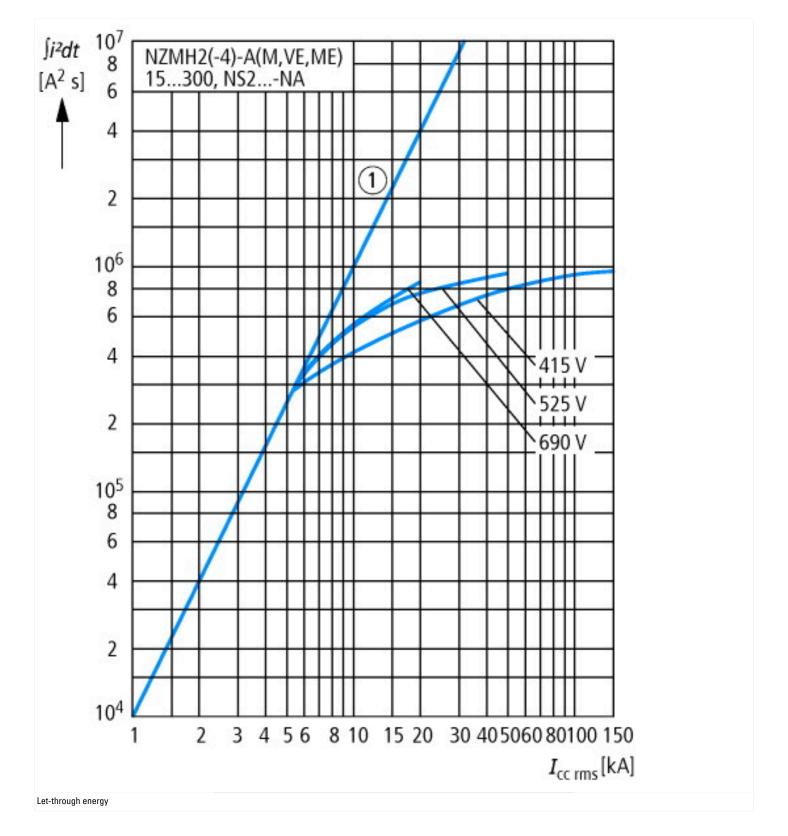
 $Low-voltage\ industrial\ components\ (EG000017)\ /\ Power\ circuit-breaker\ for\ trafo/generator/installation\ protection\ (EC000228)$ 

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

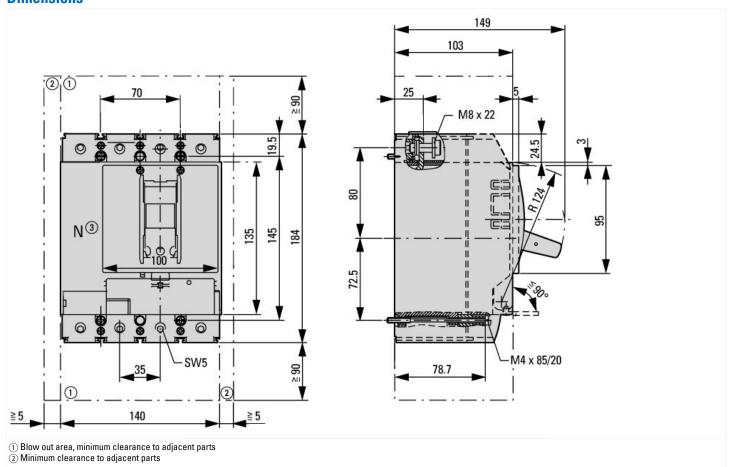
	20
V	690 - 690
kA	150
А	15 - 20
А	0 - 0
А	350 - 350
	No
	Screw connection
	Built-in device plug-in technique
	No
	Yes
	0
	0
	0
	No
	No
	4
	Front side
	Rocker lever
	Yes
	No
	Yes
	IP20
	A A

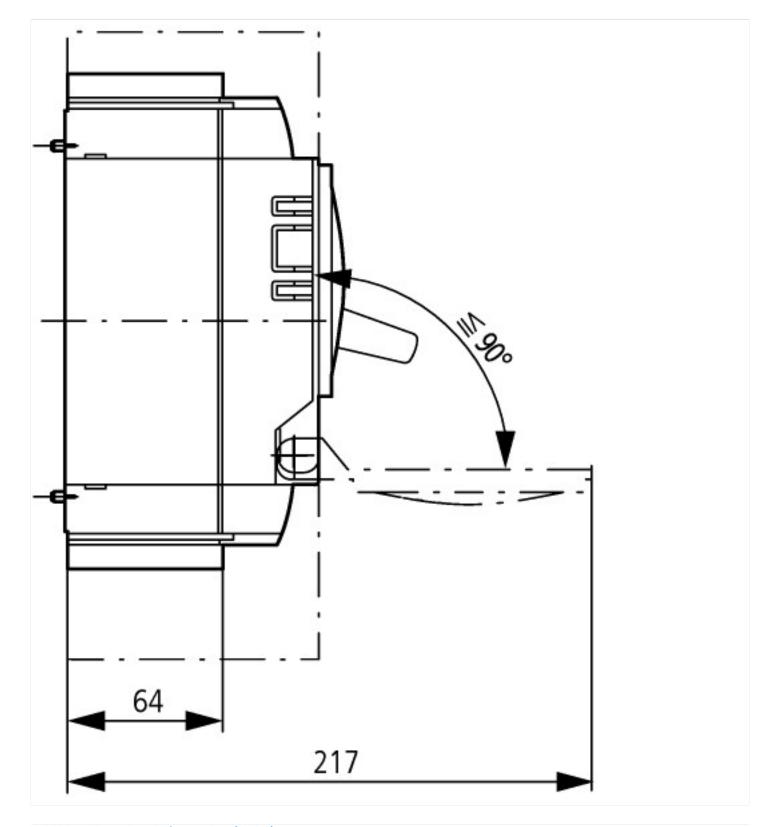






## **Dimensions**





# Additional product information (links)

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	ftp://ftp.moeller.net/DOCUMENTATION/PDF/nzm_technic_de_en.pdf