



## Circuit-breaker, 3p, 250A 1000V

Part no. **NZMH2-VE250-S1**  
 Article no. **100779**

Similar to illustration


## Delivery program

Product range			Circuit-breaker
Protective function			Systems, cable, selectivity and generator protection
Standard/Approval			IEC
Installation type			Fixed
Release system			Electronic release
Construction size			NZM2
Description			R.m.s. value measurement and "thermal memory" adjustable time delay setting to overcome current peaks $t_r$ : 2 – 20 s at $6 \times I_r$ also infinity (without overload releases) Adjustable delay time $t_{sd}$ : Steps: 0, 20, 60, 100, 200, 300, 500, 750, 1000 ms $i^2t$ constant function: fixed OFF NZM...S1 terminal type: NZM...XKSA cover required
Number of poles			3 pole
Standard equipment			Screw connection
Rated current = rated uninterrupted current	$I_n = I_u$	A	250

## Switching capacity

1000 V 50/60 Hz	$I_{cs}$	kA	10
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## Setting range

Overload trip			
	$I_r$	A	125 - 250
Short-circuit releases			
			
Non-delayed	$I_i = I_n \times \dots$		3000 A fixed
			
Delayed	$I_{sd} = I_r \times \dots$		2 - 10
			

## Technical data

### Switch-disconnectors

Rated surge voltage invariability	$U_{imp}$		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	$U_e$	V AC	1000
Rated current = rated uninterrupted current	$I_n = I_u$	A	250
Rated uninterrupted current	$I_u$	A	
IEC/EN 61131-3	$I_u$	A	250
			The rated continuous current stated is valid at 50° C.
Overvoltage category/pollution degree			III/3
Rated insulation voltage	$U_i$	V	1000
Utilization category			A
Ambient temperature			
Ambient temperature, storage		°C	- 40 - + 70

Operation	°C	-25 - +70
<b>Rated short-circuit making capacity</b>		
1000 V 50/60 Hz	I <sub>cm</sub>	kA 17
<b>Rated short-circuit breaking capacity I<sub>cn</sub></b>		
I <sub>cu</sub> to IEC/EN 60947 test cycle O-t-CO	I <sub>cu</sub>	kA
1000 V 50/60 Hz	I <sub>cs</sub>	kA 10
I <sub>cs</sub> to IEC/EN 60947 test cycle O-t-CO-t-CO	I <sub>cs</sub>	kA
1000 V AC	I <sub>cs</sub>	kA 3
<b>Rated short-time withstand current</b>		
t = 0.3 s	I <sub>cw</sub>	kA 1.9
t = 1 s	I <sub>cw</sub>	kA 1.9
Lifespan, mechanical	Operations	20000
Max. operating frequency	Ops/h	120
		Lifespan, mechanical: of which max. 50 % trip by shunt/undervoltage release
<b>Lifespan, electrical</b>		
1000 V 50/60 Hz	Operations	3000
<b>Terminal capacity</b>		
Standard equipment		Screw connection
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 <sup>2</sup>	1 x 16
Stranded	mm <sup>2</sup>	
Stranded	mm <sup>2</sup>	1 x (25 - 185)
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 - 50) 2 x (25 - 50)
Al conductors, Cu cable		
Solid	mm <sup>2</sup>	1 x 16
Stranded	mm <sup>2</sup>	
Stranded	mm <sup>2</sup>	1 x (25 - 185) <sup>2)</sup>
		<sup>2)</sup> Up to 240 mm <sup>2</sup> can be connected depending on the cable manufacturer.
Bolt terminal and rear-side connection		
Flat copper strip, with holes	min.	mm 2 x 16 x 0.8
Flat copper strip, with holes	max.	mm 10 x 24 x 0.8
Cu strip (number of segments x width x segment thickness)		
Box terminal		
	min.	mm 2 x 9 x 0.8
	max.	mm 10 x 16 x 0.8 (2x) 8 x 15.5 x 0,8
Bolt terminal and rear-side connection		
Flat copper strip, with holes	min.	mm 2 x 16 x 0.8
Flat copper strip, with holes	max.	mm 10 x 24 x 0.8
Copper busbar (width x thickness)	mm	
Bolt terminal and rear-side connection		
Screw connection		M10
Direct on the switch		
	min.	mm 16 x 5
	max.	mm 24 x 8

Control cables			
		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

## Design verification as per IEC/EN 61439

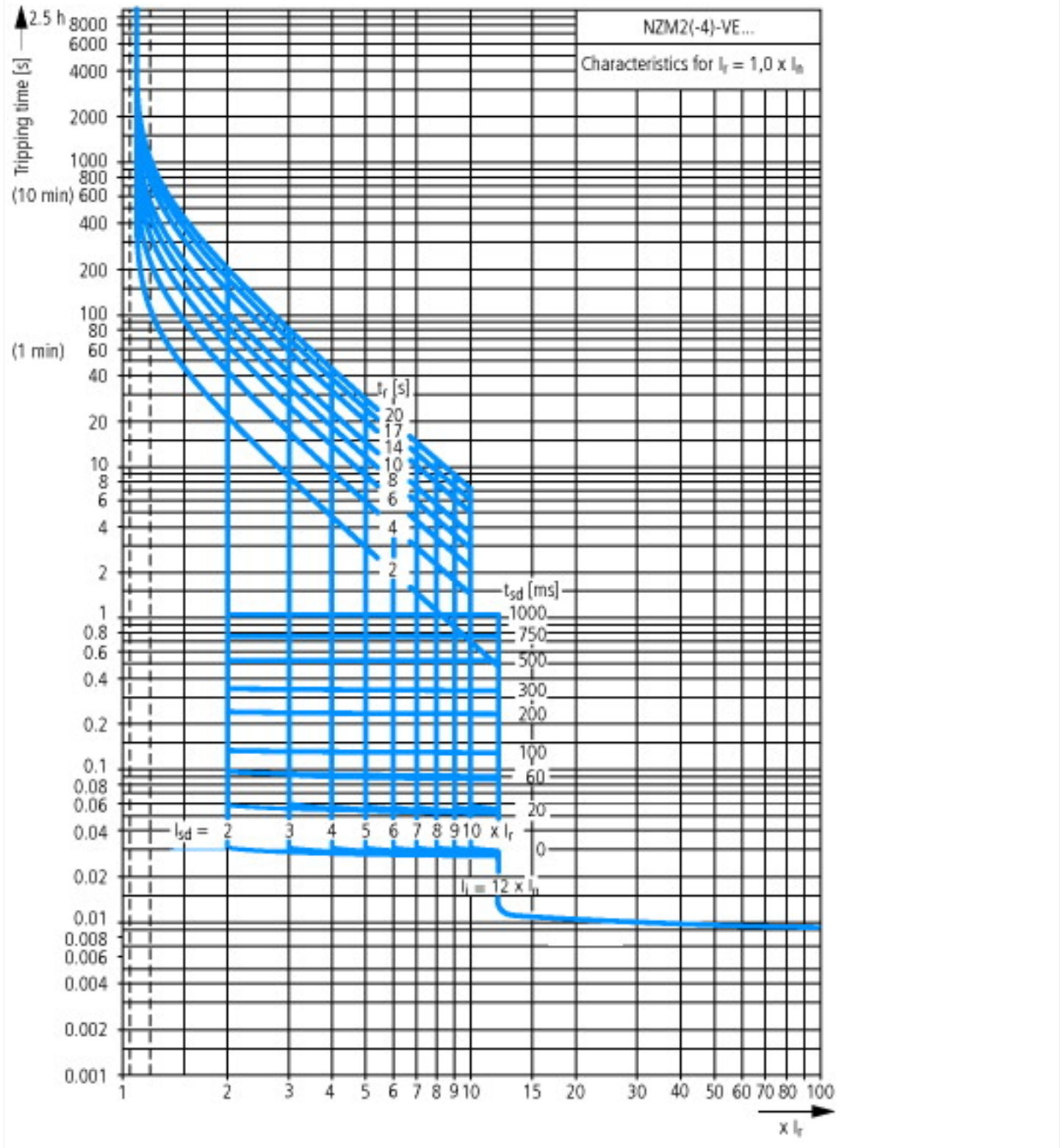
Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	A	250
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	51.56
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
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.

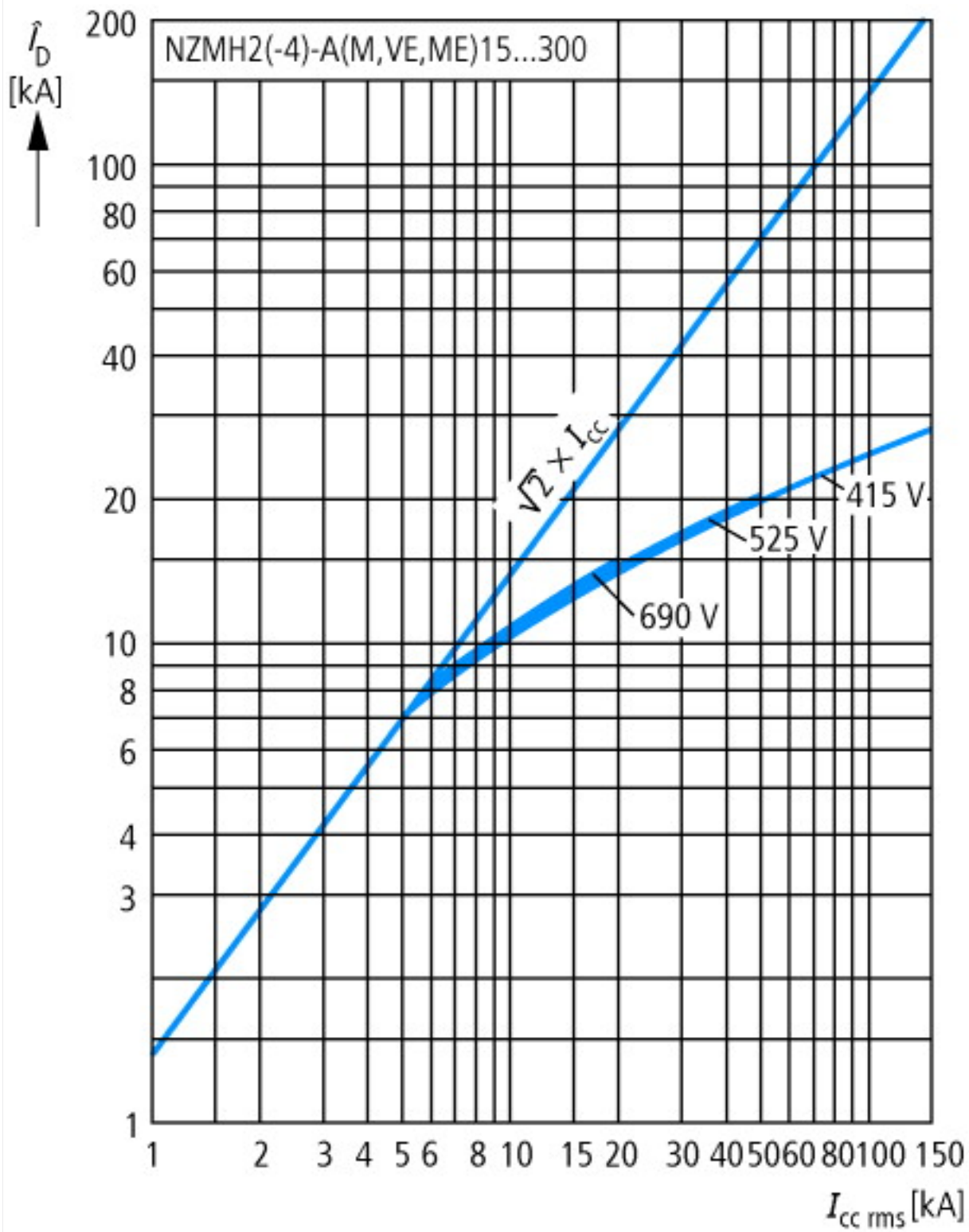
## Technical data ETIM 6.0

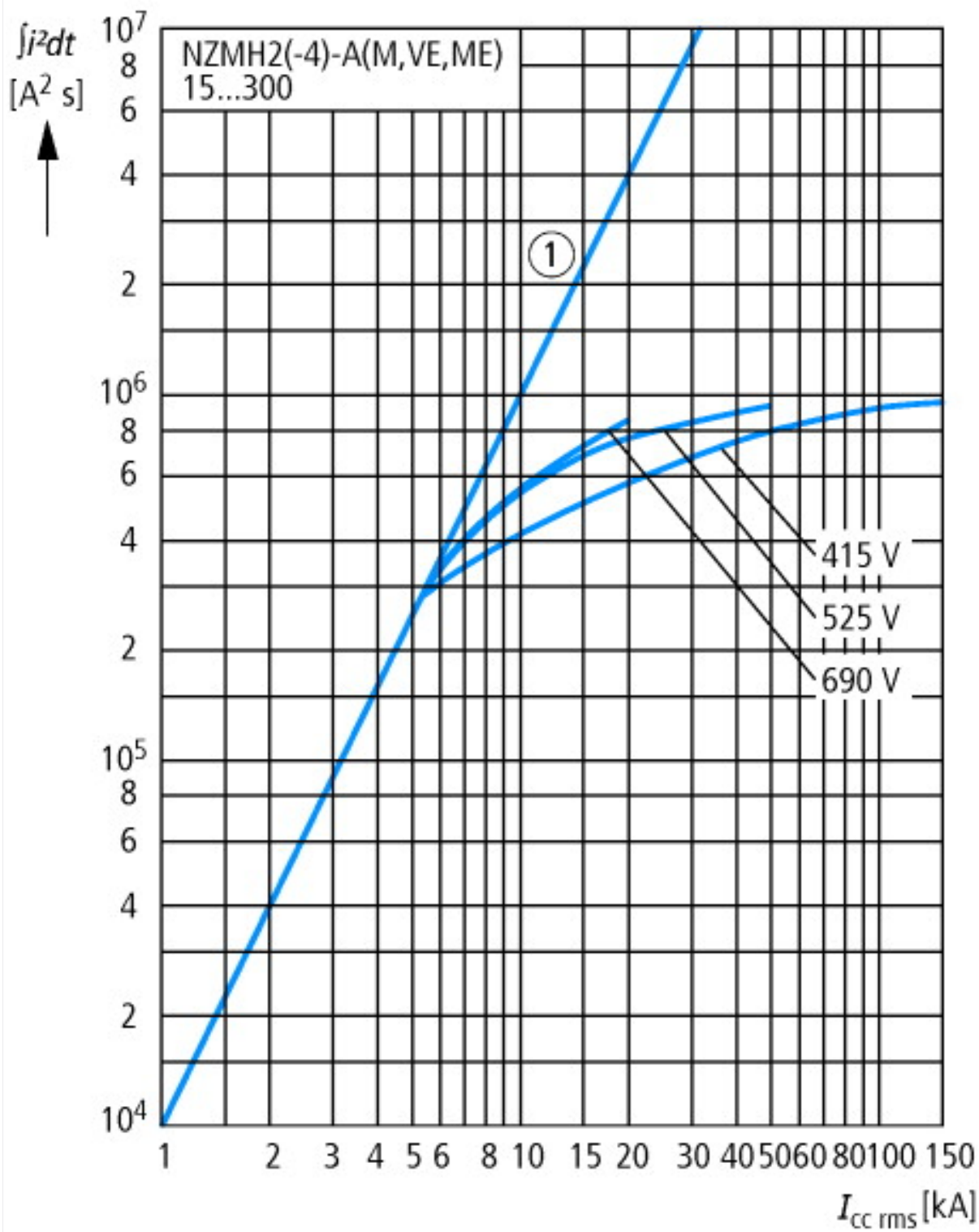
Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation prot. (EC000228)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss8.1-27-37-04-09 [AJZ716010])			
Rated permanent current I <sub>u</sub>		A	250
Rated voltage		V	1000 - 1000
Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, 50 Hz		kA	150
Overload release current setting		A	125 - 250
Adjustment range short-term delayed short-circuit release		A	250 - 2500
Adjustment range undelayed short-circuit release		A	3000 - 3000
Integrated earth fault protection			No
Type of electrical connection of main circuit			Screw connection
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

Switched-off indicator available		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		Yes
Degree of protection (IP)		IP20

## Characteristics











## Additional product information (links)

### IL01206006Z (AWA1230-1916) Circuit-Breaker, basic unit

IL01206006Z (AWA1230-1916) Circuit-Breaker, basic unit	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01206006Z2015_11.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01206006Z2015_11.pdf</a>
Weight	<a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.171">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.171</a>
Temperature dependency, Derating	<a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.172">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.172</a>
Effective power loss	<a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.174">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.174</a>
Back-up und Selektivitäts Guide	<a href="http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1198913_de.pdf">http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1198913_de.pdf</a>
Setting-Specific Representation of Tripping Characteristics and Competent Assessment of their Interaction	<a href="http://www.moeller.net/binary/ver_techpapers/ver943en.pdf">http://www.moeller.net/binary/ver_techpapers/ver943en.pdf</a>
Busbar Component Adapters for modern Industrial control panels	<a href="http://www.moeller.net/binary/ver_techpapers/ver960en.pdf">http://www.moeller.net/binary/ver_techpapers/ver960en.pdf</a>
CurveSelect characteristics program	<a href="http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm</a>
Eaton configurator	<a href="http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm</a>



