





Circuit-breaker, 3p, 33A

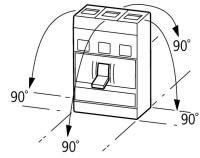
Part no. **NZMN2-S33-CNA**
 Article no. **103045**

Similar to illustration

Delivery program

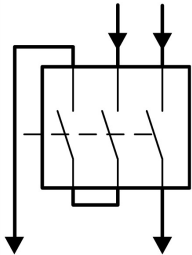
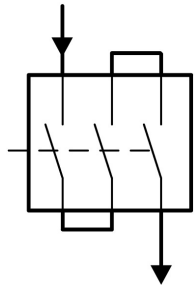
Product range			Circuit-breaker
Protective function			Short-circuit protection
Standard/Approval			UL/CSA
Installation type			Fixed
Release system			Thermomagnetic release
Description			This circuit-breaker is only allowed to be used for UL/CSA applications. Motor protection in conjunction with contactor and overload relay With short-circuit release Without overload release Ir
Number of poles			3 pole
Standard equipment			Screw connection
Rated current = rated uninterrupted current	$I_n = I_u$	A	33
Setting range			
Short-circuit releases			
			
Non-delayed	$I_i = I_n \times \dots$		8 - 14
			

Technical data

General			
Standards			UL/CSA
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	2.345
Mounting position			
Mounting position			Vertical and 90° in all directions  With residual-current release XFI: - NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in adapter elements - NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit: - NZM3, N3: vertical, 90° 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)			Weight Temperature dependency, Derating Effective power loss

Circuit-breakers

Rated surge voltage invariability	U_{imp}		
Main contacts		V	8000
Auxiliary contacts		V	6000
Rated operational voltage	U_e	V AC	690
Rated operational voltage	U_e	V DC	750
			<p>Details apply for 3 pole system protection circuit-breaker with thermomagnetic release NZMN(H)1(2)(3)-A... to 500 A.</p> <p>For rated operating voltage switching via 3 contacts:</p> <p>DC correction factor for instantaneous release response value: NZM1: 1.25, NZM2: 1.35, NZM3: 1.45</p> <p>Set value for I_i at DC = set value I_i AC/correction factor DC</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Switching of one pole via two series contacts</p>  </div> <div style="text-align: center;"> <p>Switching of one pole via three series contacts</p>  </div> </div>
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	1000

Switching capacity

Rated short-circuit breaking capacity I_{cn}	I_{cn}		
I_{cu} to IEC/EN 60947 test cycle O-t-CO	I_{cu}	kA	
500 V DC	I_{cu}	kA	30
750 V DC	I_{cu}	kA	30
Rated short-time withstand current			
$t = 0.3$ s	I_{cw}	kA	1.9
$t = 1$ s	I_{cw}	kA	1.9
Rated making and breaking capacity			
Rated operational current	I_e	A	
DC-1			
500 V DC	I_e	CSA	33
750 V DC	I_e	CSA	33
DC - 3			
500 V DC	I_e	CSA	33
750 V DC	I_e	CSA	33
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
AC--3			
400 V 50/60 Hz	Operations		6500

415 V 50/60 Hz	Operations	6500
690 V 50/60 Hz	Operations	5000
DC-1		
500 V DC	Operations	500
750 V DC	Operations	500
DC - 3		
500 V DC	Operations	3000
750 V DC	Operations	3000
Max. operating frequency	Ops/h	120
Total downtime in a short-circuit	ms	< 10

Terminal capacity

Standard equipment			Screw connection
Round copper conductor			
Box terminal			
Solid		mm ²	1 x (12 ... 6)
Stranded		mm ²	1 x (4 ... 350)
Tunnel terminal			
Solid		mm ²	1 x 6
Stranded		mm ²	
Stranded		mm ²	1 x (4 ... 350)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm ²	1 x (11 ... 6)
Stranded		mm ²	1 x (4 ... 3/0)
Al conductors, Cu cable			
Solid		mm ²	1 x 16
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 16 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
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 16 x 0.8
Copper busbar (width x thickness)	mm		
Bolt terminal and rear-side connection			
Screw connection			M8
Direct on the switch			
	min.	mm	16 x 5
	max.	mm	20 x 5
Control cables			
		mm ²	1 x (18 ... 14) 2 x (18 ... 16)

Design verification as per IEC/EN 61439

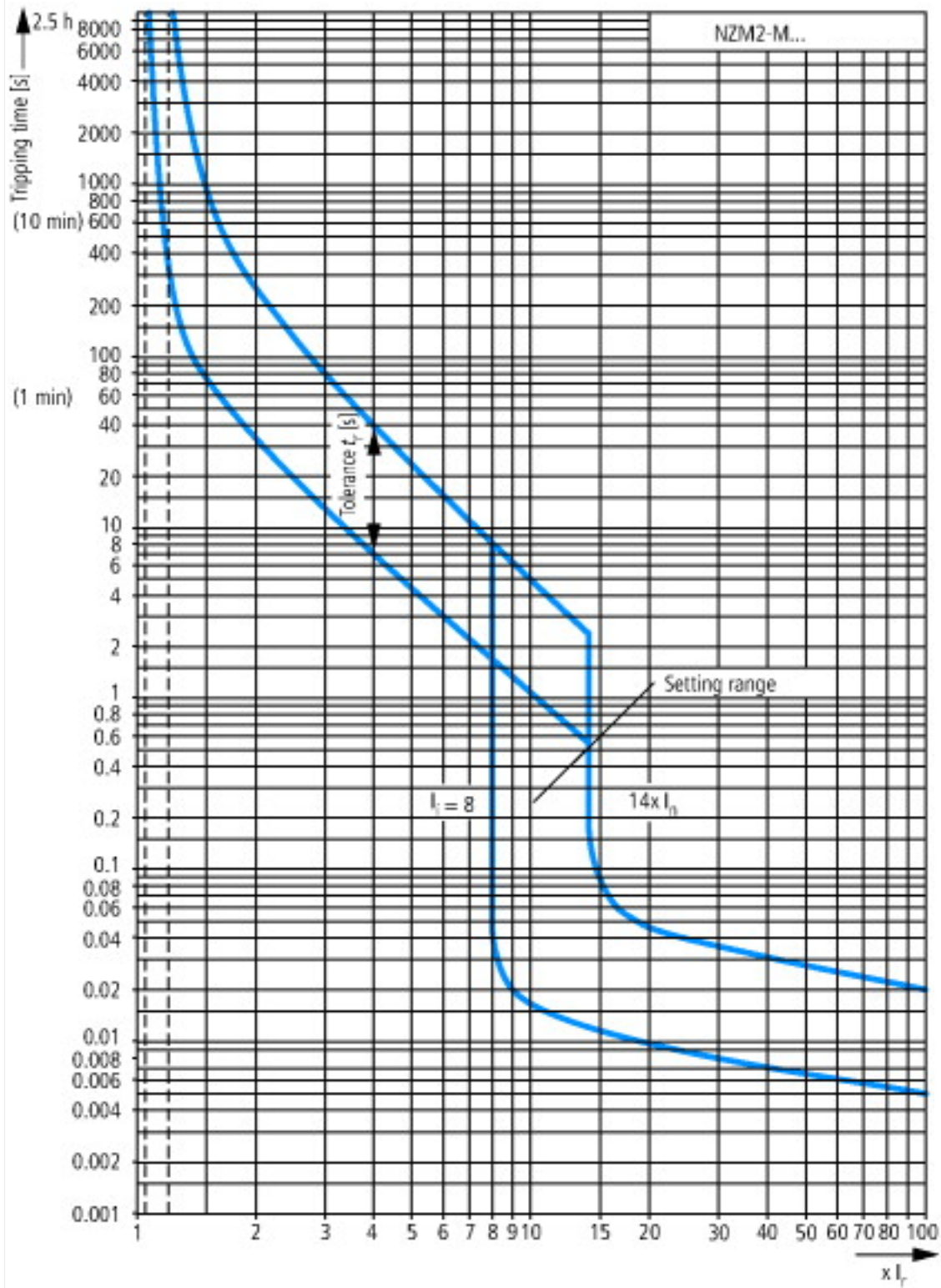
Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	33
Equipment heat dissipation, current-dependent	P _{vid}	W	2.55
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			

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.

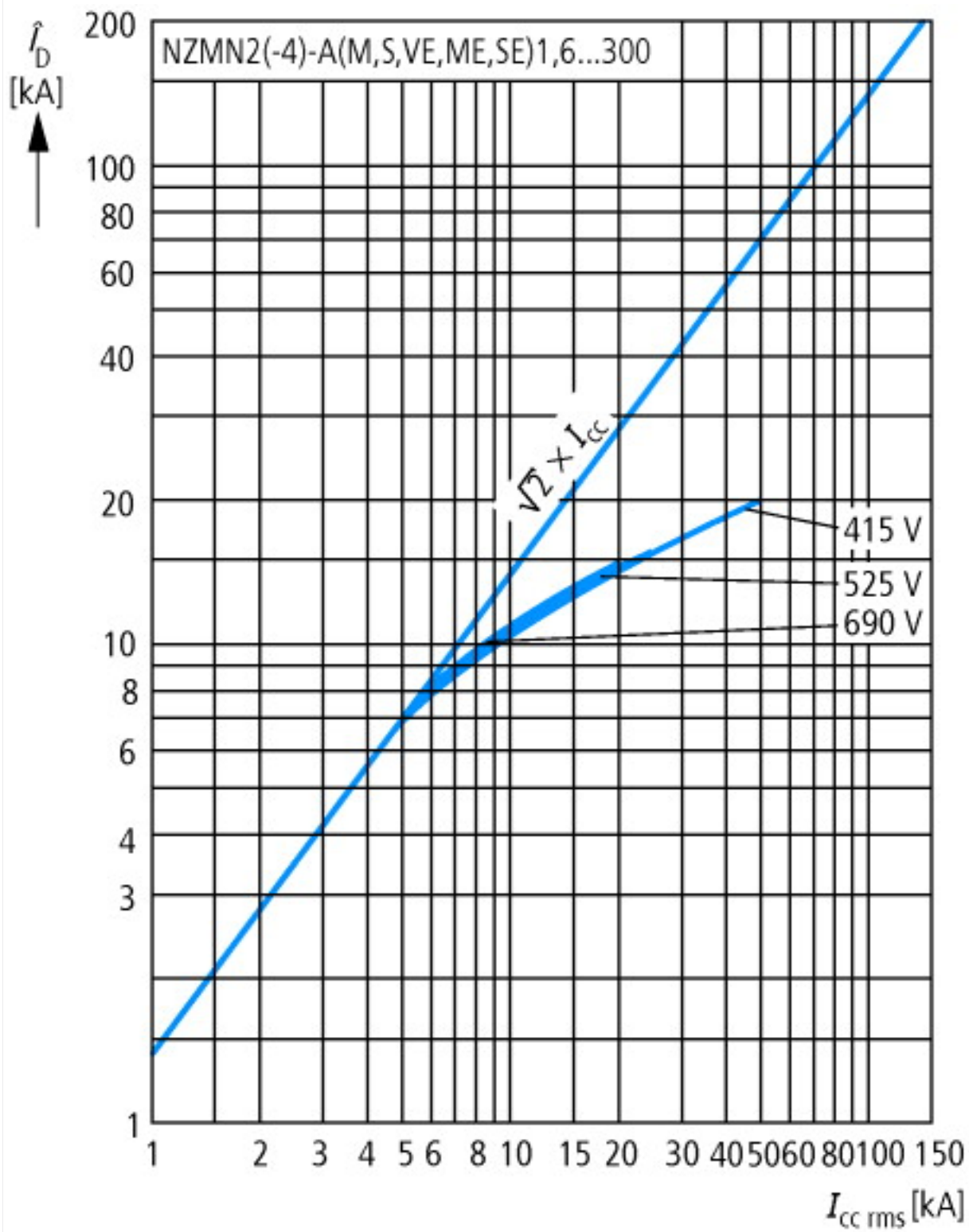
Approvals

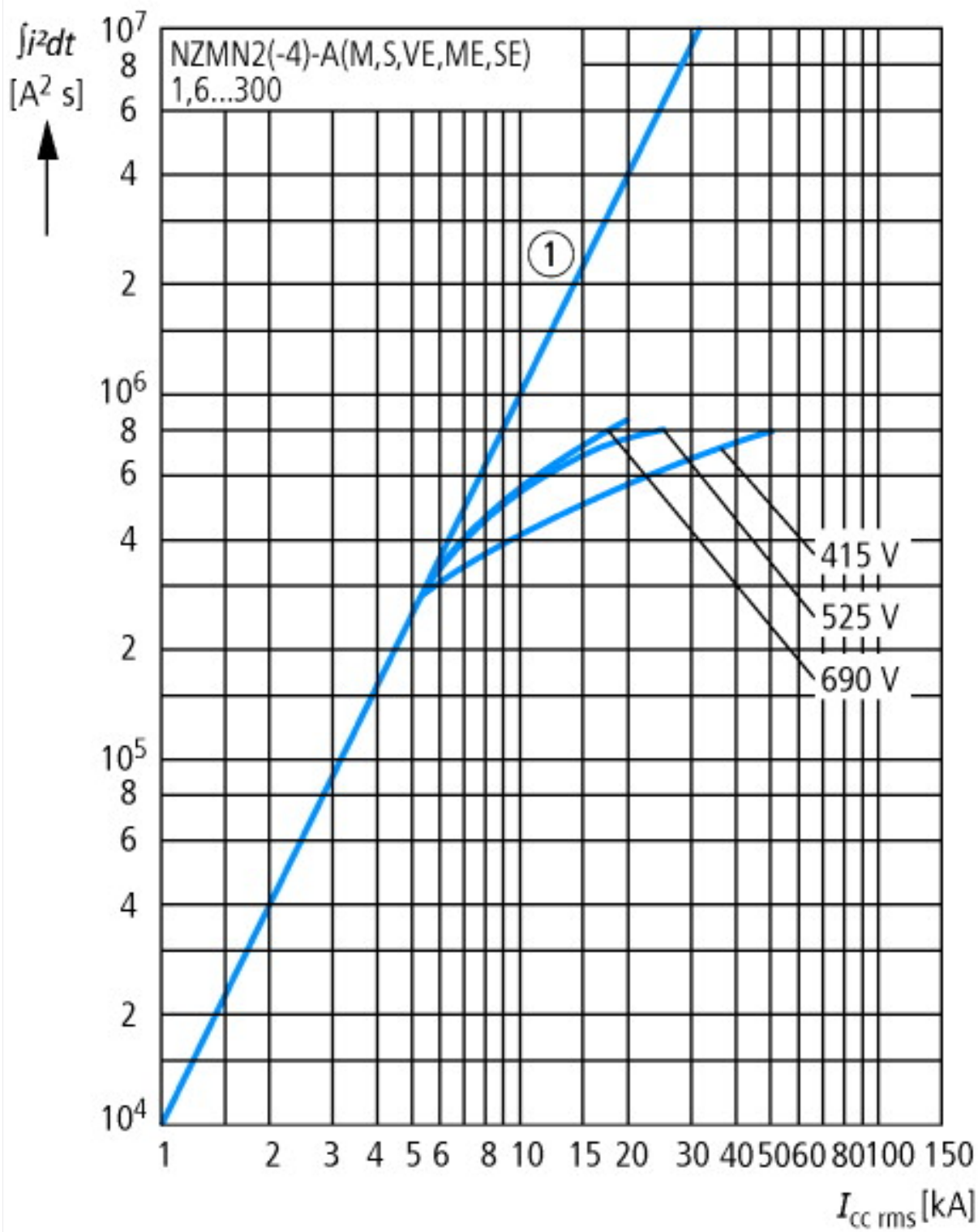
Product Standards			UL 489; CSA-C22.2 No. 5-09
UL File No.			E31593
UL Category Control No.			DKPU2
CSA File No.			022086
CSA Class No.			1432-01
North America Certification			UL recognized, CSA certified
Conditions of Acceptability			Only used in motor circuits in conjunction with suitable contactor and overload relay. SCCR value applies for complete combination starter only, consisting of instantaneous trip circuit breaker, contactor and overload relay.
Specially designed for North America			Yes
Suitable for			Branch circuits, feeder circuits
Current Limiting Circuit-Breaker			No
Max. Voltage Rating			600Y/347 V, 480 V
Degree of Protection			UL/CSA Type: -

Characteristics

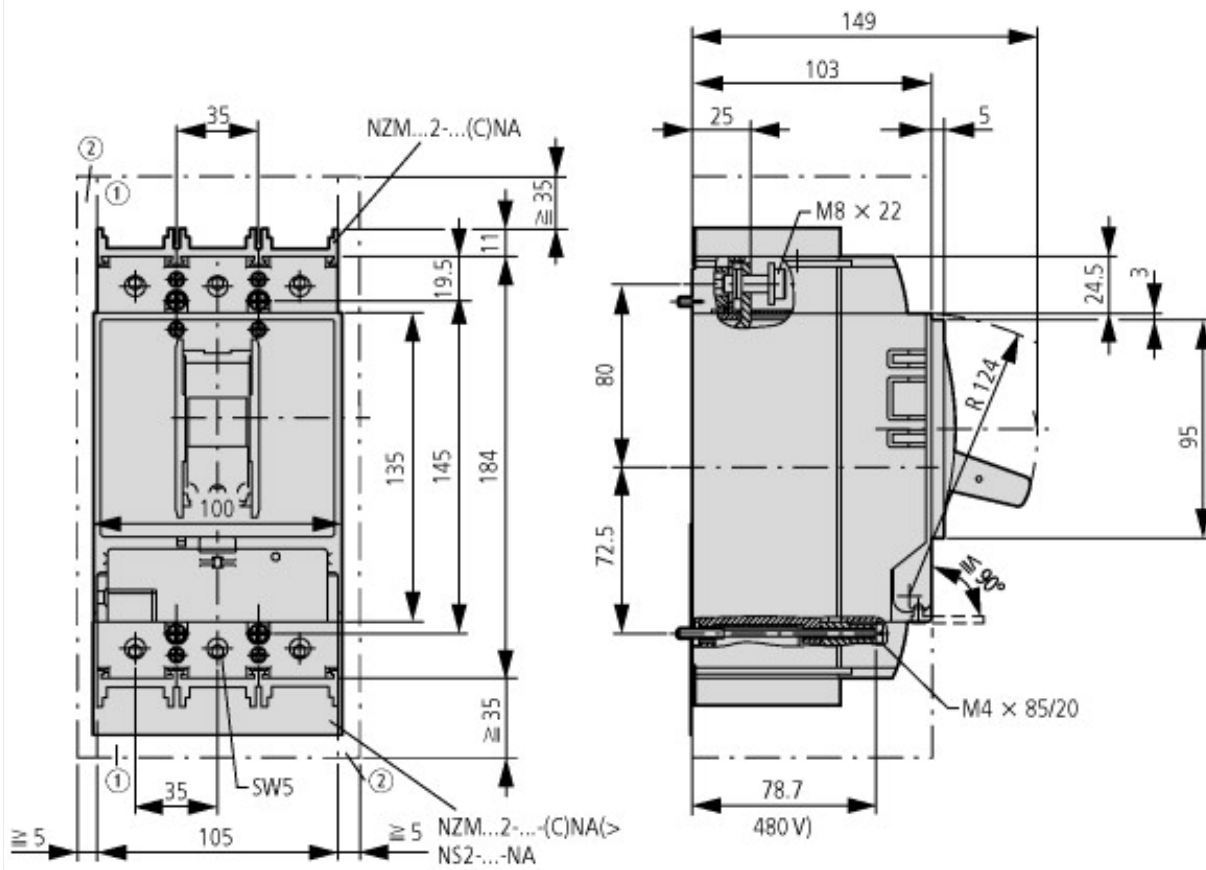


Short-circuit protection only!





Dimensions



- ① Blow out area, minimum clearance to adjacent parts
- ② Minimum clearance to adjacent parts



Additional product information (links)

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

IL01206006Z (AWA1230-1916) Circuit-Breaker, basic unit ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01206006Z2015_11.pdf

Weight <http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.171>

Temperature dependency, Derating <http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172>

Effective power loss <http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.174>