



Circuit-breaker 3p 160A

Part no.

NZMH2-S160

Article no.

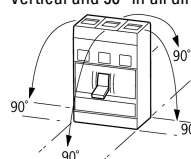
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Delivery programme

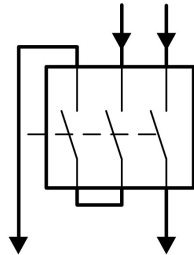
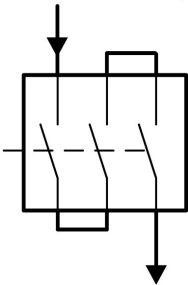
Range			Circuit-breaker
Protective function			Short-circuit protection
Standard/Approval			IEC
Installation type			Fixed mounted
Release system			Thermomagnetic release
Construction size			NZM2
Description			Motor protection in conjunction with overload relay With short-circuit release Without overload release Ir IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category.
Number of conductors			3 pole
Standard equipment			Screw connection
Rated current = rated uninterrupted current	$I_n = I_u$	A	160
Switching capacity			
400/415 V 50/60 Hz	I_{cu}	kA	150
Setting range			
Short-circuit releases			
Non-delayed	$I_i = I_n \times \dots$		8 - 14
Motor rating AC-3 at 400 V 50/60 Hz			
400 V	P	kW	75
Rated operational current AC-3 at 400 V 50/60 Hz			
400 V	I_e	A	134

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		°C	
Ambient temperature, storage		°C	- 40 - + 80
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 VDE 0106 Part 101 and Part 101/A1			
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 current = rated uninterrupted current	$I_n = I_u$	A	160
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
			1) Details apply for 3 pole system protection circuit-breaker with thermomagnetic release NZMN(H)1(2)(3)-A... to 500 A. For rated operating voltage switching via 3 contacts: DC correction factor for instantaneous release response value: NZM1: 1.25, NZM2: 1.35, NZM3: 1.45 Set value for I_i at DC = set value I_i AC/correction factor DC Switching of one pole via two series contacts  Switching of one pole via three series contacts 
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	1000
For use in IT electrical power networks		V	690

Switching capacity

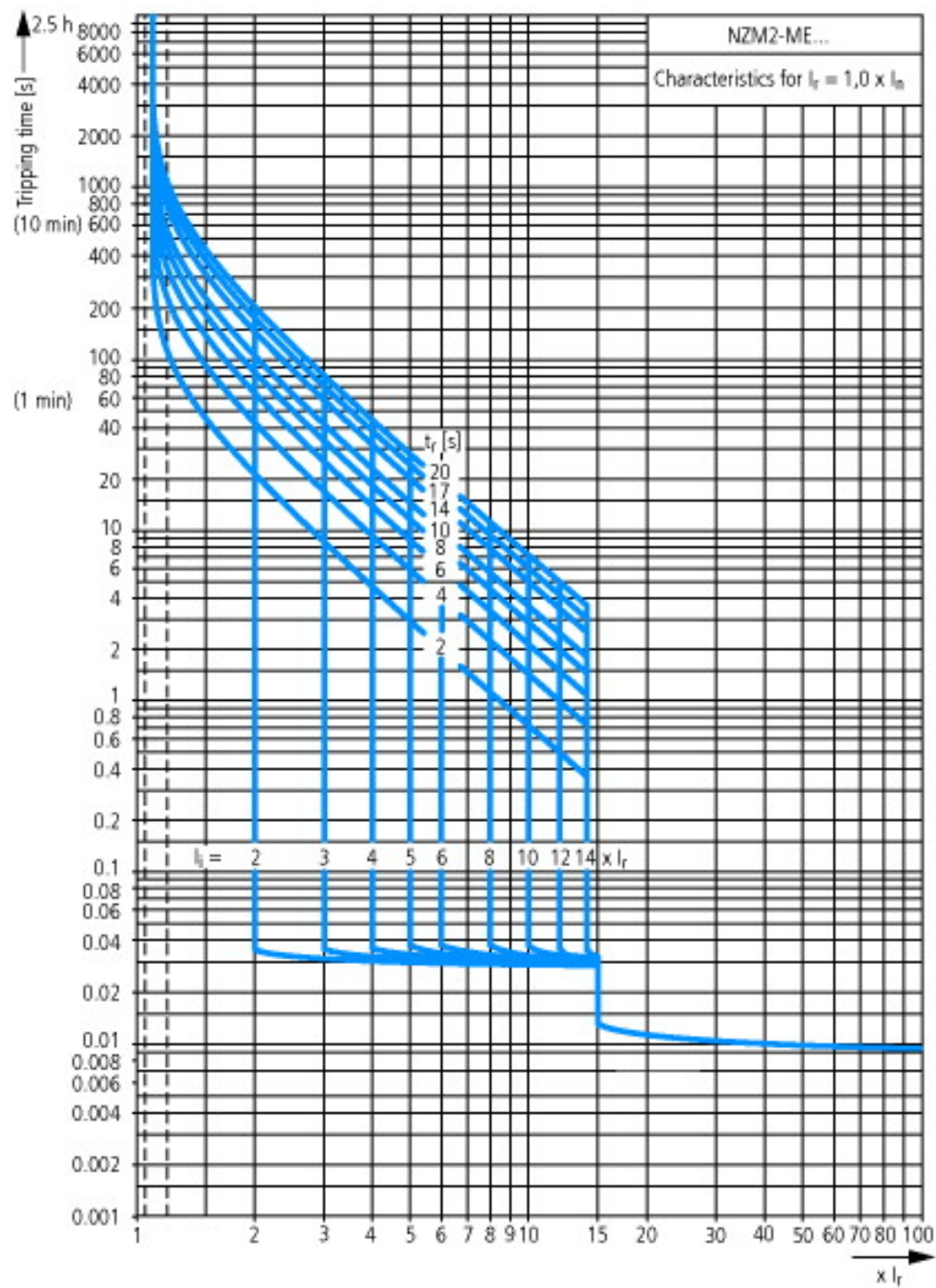
Rated short-circuit making capacity	I_{cm}		
240 V	I_{cm}	kA	330
400/415 V	I_{cm}	kA	330
440 V 50/60 Hz	I_{cm}	kA	286
525 V 50/60 Hz	I_{cm}	kA	105
690 V 50/60 H	I_c	kA	40
Rated short-circuit breaking capacity I_{cn}	I_{cn}		
I_{cu} to IEC/EN 60947 test cycle O-t-CO	I_{cu}	kA	
240 V 50/60 Hz	I_{cu}	kA	150
400/415 V 50/60 Hz	I_{cu}	kA	150
440 V 50/60 Hz	I_{cu}	kA	130
525 V 50/60 Hz	I_{cu}	kA	50
690 V 50/60 Hz	I_{cu}	kA	20
500 V DC	I_{cu}	kA	60
750 V DC	I_{cu}	kA	60
I_{cs} to IEC/EN 60947 test cycle O-t-CO-t-CO	I_{cs}	kA	
240 V 50/60 Hz	I_{cs}	kA	150

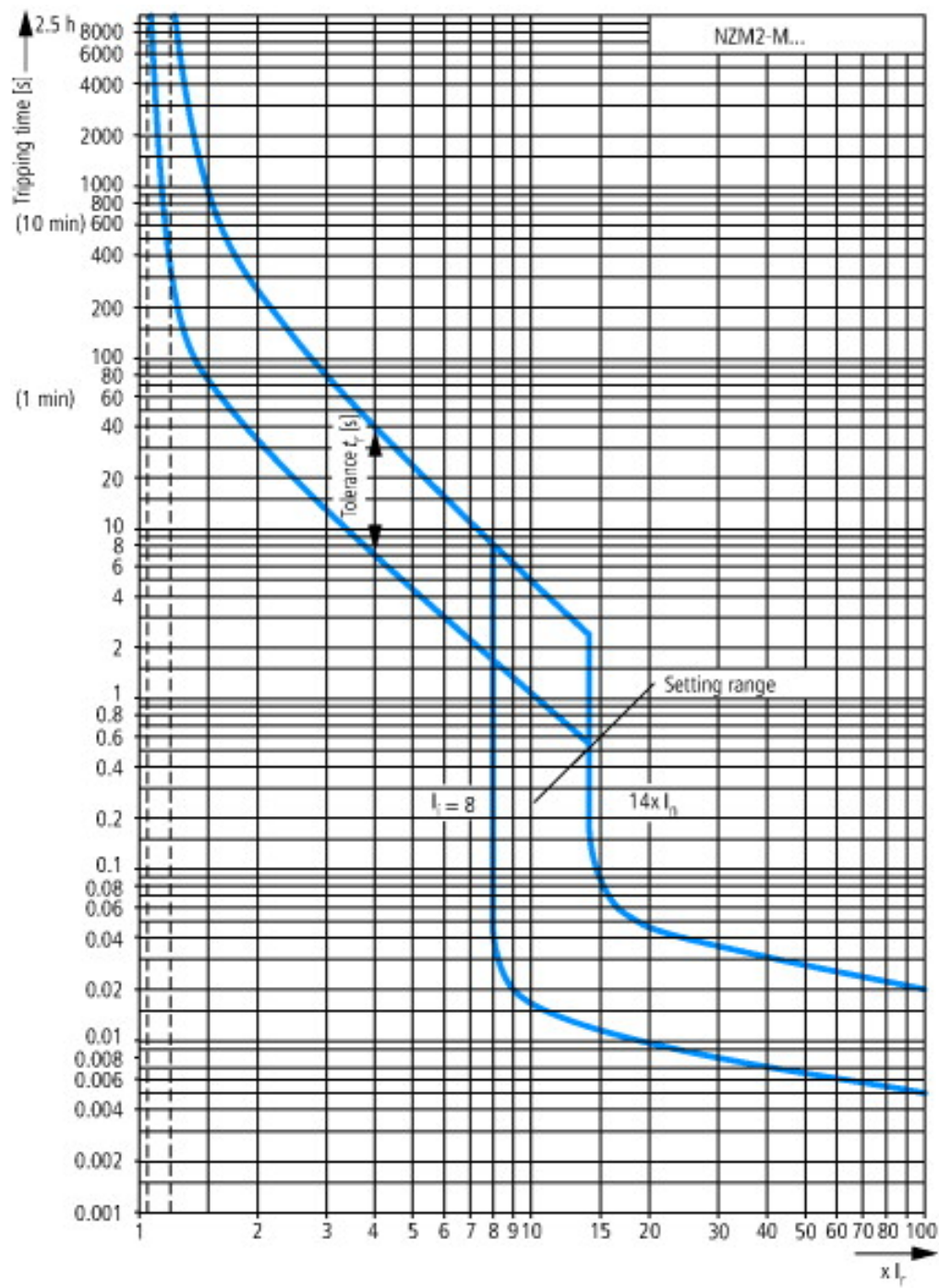
400/415 V 50/60 Hz	I _{cs}	kA	150
440 V 50/60 Hz	I _{cs}	kA	130
525 V 50/60 Hz	I _{cs}	kA	37.5
690 V 50/60 Hz	I _{cs}	kA	5
Maximum low-voltage h.b.c. fuse		A gG/gL	355
			Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker.
Rated short-time withstand current			
t = 0.3 s	I _{cw}	kA	1.9
t = 1 s	I _{cw}	kA	1.9
Utilization category to IEC/EN 60947-2			A
Rated making and breaking capacity			
Rated operational current	I _e	A	
AC-1			
400 V	I _e	A	300
415 V	I _e	A	300
690 V	I _e	A	300
AC--3			
400 V	I _e	A	160
415 V	I _e	A	160
690 V	I _e	A	160
Lifespan, mechanical(of which max. 50 % trip by shunt/undervoltage release)	Operations		20000
Lifespan, electrical			
AC-1			
400 V V 50/60 Hz	Operations		10000
415 V 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
Max. operating frequency		Ops/h	120
Current heat losses per pole at I _u are based on the maximum rated operational current of the frame size.		W	19
			For current heat loss per pole the specification refers to the maximum rated operational current of the frame size.
Total downtime in a short-circuit		ms	< 10
Terminal capacity			
Standard equipment			Screw connection
Overview			Basic equipment Box terminal ● - - - Screw connection - ● ● ● Accessories Box terminal - ● ● - Screw connection ● - - ● Tunnel terminal ● ● ● ● Connection on rear ● ● ● ● Flat conductor terminal - - - ●
Round copper conductor			
Box terminal			
Solid		mm ²	1 x (4 - 16) 2 x (4 - 16)

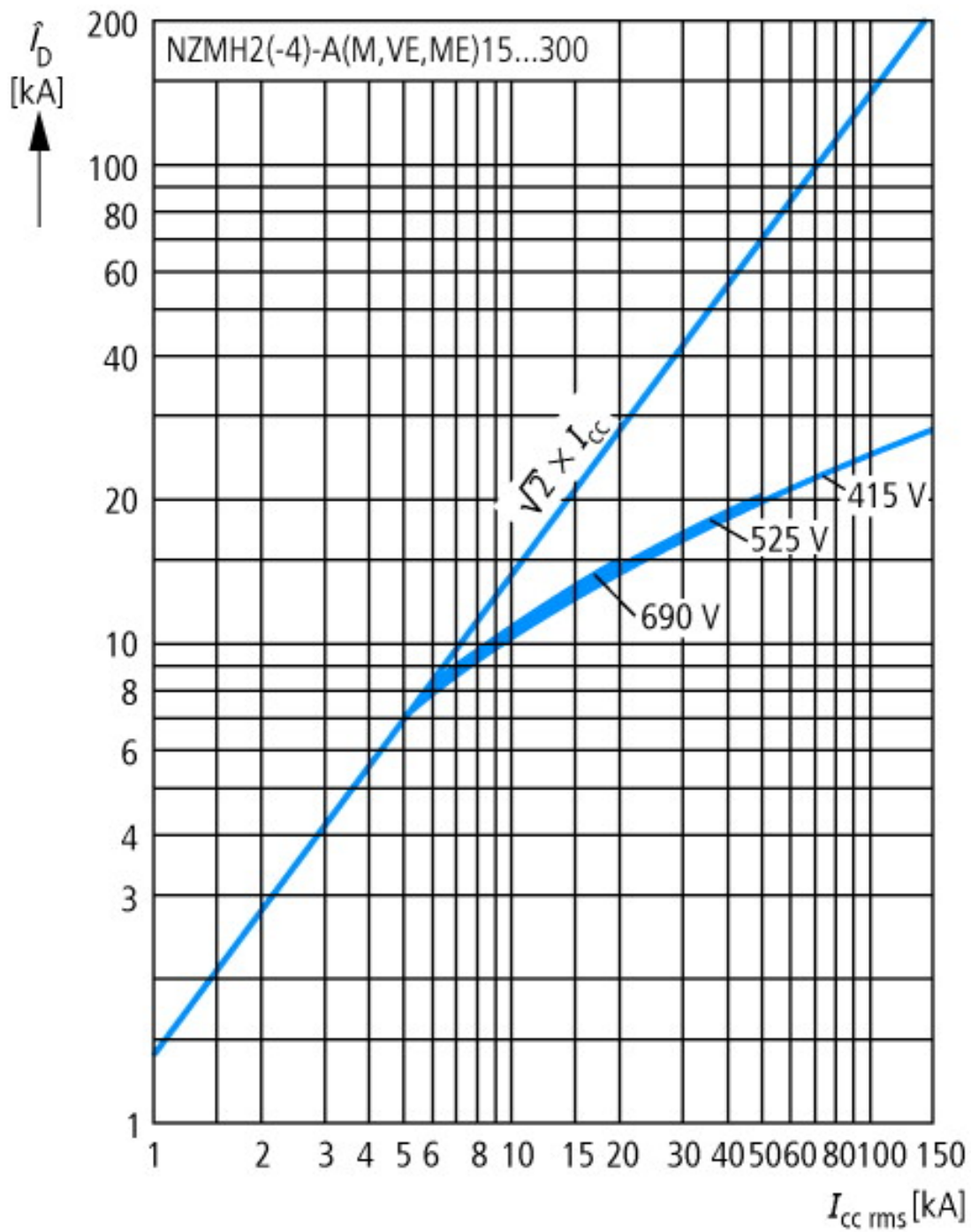
Stranded		mm ²	1 x (25 - 185) 2 x (25 - 70)
Tunnel terminal			
Solid		mm ²	1 x 16
Stranded		mm ²	
Stranded		mm ²	1 x (25 - 185)
Bolt terminal and rear-side connection			
Direct on the switch			
Solid		mm ²	1 x (4 - 16) 2 x (4 - 16)
Stranded		mm ²	1 x (25 - 185) 2 x (25 - 70)
Al conductors, Cu cable			
Solid		mm ²	1 x 16
Stranded		mm ²	
Stranded		mm ²	1 x (25 - 185) je nach Kabelhersteller bis zu 240 mm ² anschließbar
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	2 x 9 x 0.8
	max.	mm ²	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 ²	16 x 5
	max.	mm ²	20 x 5
Control cables			
		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)

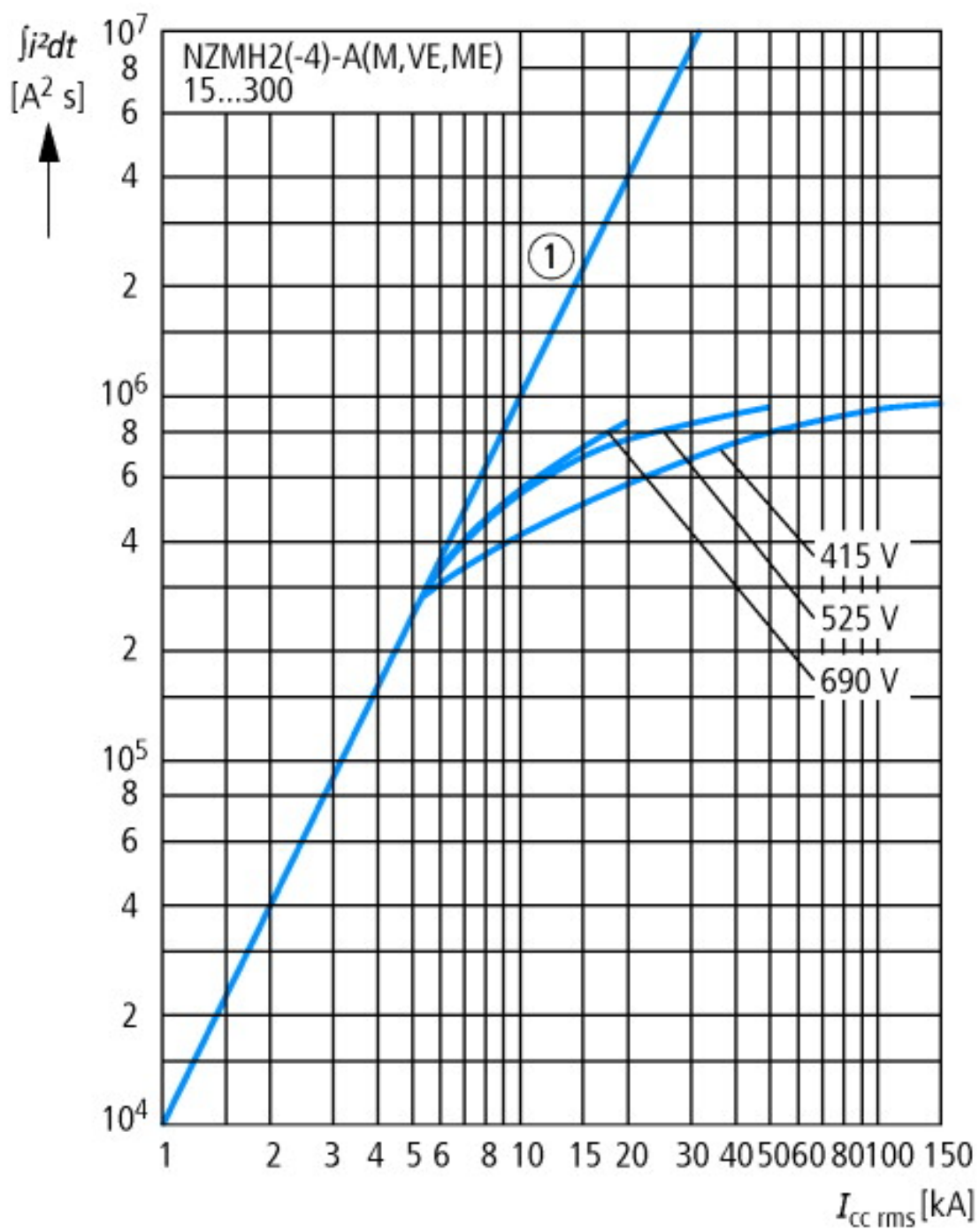
Technische Daten nach ETIM 4.0

Rated operation power at AC-3, 400 V		kWh	75
With integrated auxiliary switch			No
Rated permanent current Iu		A	160
With integrated under voltage release			No
Number of poles			3
Degree of protection (IP)			IP20
Connection type main current circuit			Screw connection

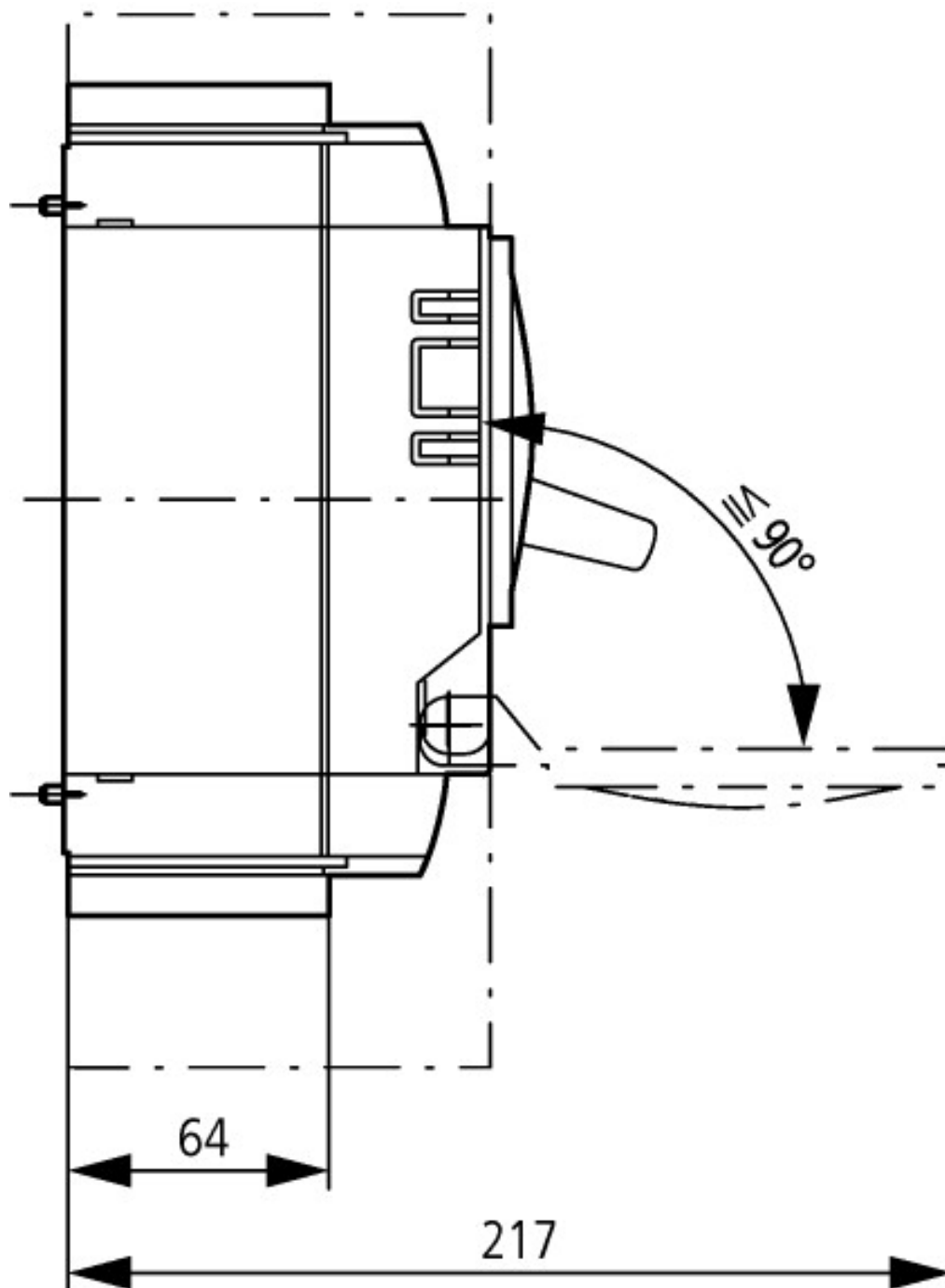








Dimensions



[Additional product information \(links\)](#)