MOELLER

Type: **NZMN1–S100**
Article No.: **265735**



Ordering information			
Description			Terminals standard, terminal screws as accessories
Rated current = rated uninterrupted current	I_u	A	100
Setting range			
Short–circuit releases Short–circuit releases		A	800 – 1250
Motor rating AC–3 at 400 V 50/60 Hz	P	kW	55
Rated operational current AC–3 at 400 V 50/60 Hz	I_e	A	99
Switching capacity Switching capacity		kA	50
Release system			Magnetic short–circuit release
Pole			3

Notes concerning the product group

IEC/EN 60947–4–1 and IEC/EN 60947–2

Circuit–breakers conform to all demands of utilization category AC–3.

Adjustable short–circuit release I_i

- 8 – 14 × I_n (ex–factory 12 × I_n)

• ^{n})

– NZM...1–S100, NZM...2–S200: 8 – 12.5 × I_n (ex–factory 12 × I_n)

Without overload release I_r

Selection

of circuit–breakers without overload release when combining with ZEV electronic motor–protective relay:

The tripping response of the ZEV motor–protective relay is matched by setting of the tripping class (CLASS), to the starting behaviour of the motor to be protected.

	I_n in A	**Maximum permissible tripping class CLASS**
NZM...1–S...	40	30
	50	30
	63	30
	80	20
	100	15
NZM...2–S...	40	30
	50	30
	63	30
	80	30
	100	30
	125	30
	160	20
	200	10

Tripping class	**Tripping time T_p with loading on all poles with 7.2 times the current setting value**
10 A	2 s < T_p ≦ 10 s
10	4 s < T_p ≦ 10 s
20	6 s < T_p ≦ 20 s
30	9 s < T_p ≦ 30 s

Motor–starter combination of classification types 1 and 2 can be found in the “Fuseless motor–starter combinations” section.

Notes concerning the product group

Higher currents:

NZM...3/4...ME → 265781

Notes for terminals → 260015

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, according to IEC 60068−2−78 Damp heat, cyclical to IEC 60068−2−30
Mechanical shock resistance (IEC/EN 60068−2−27)			
Shock resistance		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
Dimensions			
Weight			
Weight		kg	1,046
Mounting position			
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
Circuit−breakers			
Rated impulse withstand voltage U_{imp}			
Main contacts		V	6000
Auxiliary contacts		V	6000
Rated operational voltage	U_e	V AC	690
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U_i	V	690
Switching capacity			
Rated short−circuit making capacity			
240 V	I_{cm}	kA	187

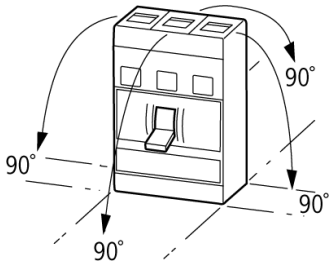
400/415 V	I_{cm}	kA	105
440 V	I_{cm}	kA	74
525 V	I_{cm}	kA	40
690 V	I_{cm}	kA	17
Rated short–circuit breaking capacity I_{cn}			
I_{cu} to IEC/EN 60947 operating sequence O–t–CO			
240 V 50/60 Hz	I_{cu}	kA	85
400/415 V 50/60 Hz	I_{cu}	kA	50
440 V 50/60 Hz	I_{cu}	kA	35
525 V 50/60 Hz	I_{cu}	kA	20
690 V 50/60 Hz	I_{cu}	kA	10
I_{cu} to IEC/EN 60947 operating sequence O–t–CO–t–CO			
240 V 50/60 Hz	I_{cs}	kA	85
400/415 V 50/60 Hz	I_{cs}	kA	50
440 V 50/60 Hz	I_{cs}	kA	35
525 V 50/60 Hz	I_{cs}	kA	10
690 V 50/60 Hz	I_{cs}	kA	7
Technical data, divergent from the products for the IEC market switching capacity NA switches (UL489, CSA 22.2 No. 5.1)			
240 V 60 Hz		kA	85
480V 60Hz		kA	35
Utilization category to IEC/EN 60947–2			A
Lifespan, mechanical	Operations		20000
Maximum operating frequency			
Max. operating frequency		Ops/h	120
Lifespan, electrical			
AC–1			
400/415 V 50/60 Hz	Operations		10000
690 V 50/60 Hz	Operations		7500
AC––3			
400/415 V 50/60 Hz	Operations		7500
690 V 50/60 Hz	Operations		5000
Current heat loss per pole at I_u		W	13
Overload releases			

Temperature compensation for NZM2 to IEC/EN 60947, residual error in the range –25 °C/+70 °C (reference temperature 40 °C)			
Thermomagnetic		%/K	0,7
Total opening delay at short–circuit		ms	< 10
Terminal capacities			
Standard equipment			Box terminal
Accessories			Screw connection Tunnel terminal Connection on rear
Cu conductors, Cu cable			
Box terminal			
Solid		mm^2	1 × (10 – 16) 2 × (6 – 16)
Stranded		mm^2	1 × (25 – 70) 2 × 25
Tunnel terminal			
Solid		mm^2	1 × (16 – 95)
Stranded			
Single hole		mm^2	1 × (25 – 95)
Bolt terminal and rear–side connection			
Direct on the switch			
Solid		mm^2	1 × (10 – 16) 2 × (6 – 16)
Stranded		mm^2	1 × (25 – 70) 2 × 25
Al conductors, Cu cable			
Tunnel terminal			
Solid		mm^2	1 × 16
Stranded			
Single hole		mm^2	1 × (25 – 95)
Bolt terminal and rear–side connection			
Direct on the switch			
Solid		mm^2	1 × (10 – 16) 2 × (10 – 16)
Stranded		mm^2	1 × (25 – 35) 2 × (25 – 35)
Cu strip (number of segments x width x segment thickness)			

Box terminal			
	min.	mm^2	2 × 9 × 0.8
	max.	mm^2	9 × 9 × 0.8
Copper busbar (width × thickness)			
Bolt terminal and rear–side connection			
Screw connection			M8
Direct on the switch			
	min.	mm^2	12 × 5
	max.	mm^2	16 × 5
Dimensions			
			Blow out area, minimum clearance to other parts 60 mm
Explaination			Motor protection
Explaination			1 half–shaft

Mounting position

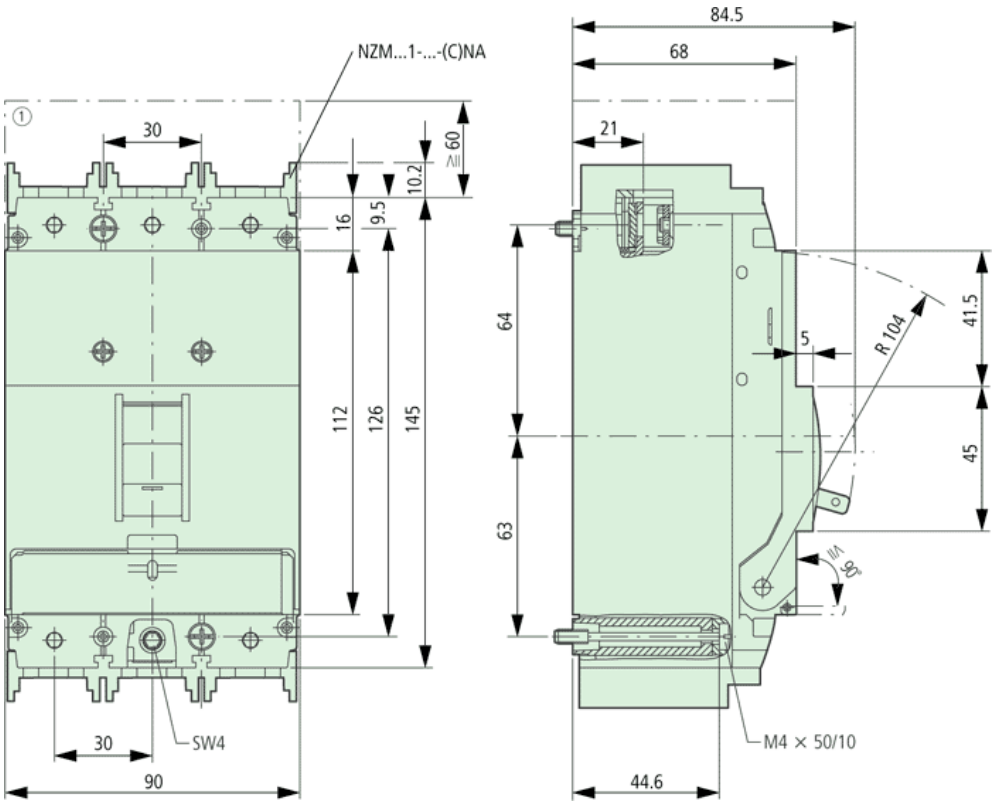
Vertical and 90° in all directions



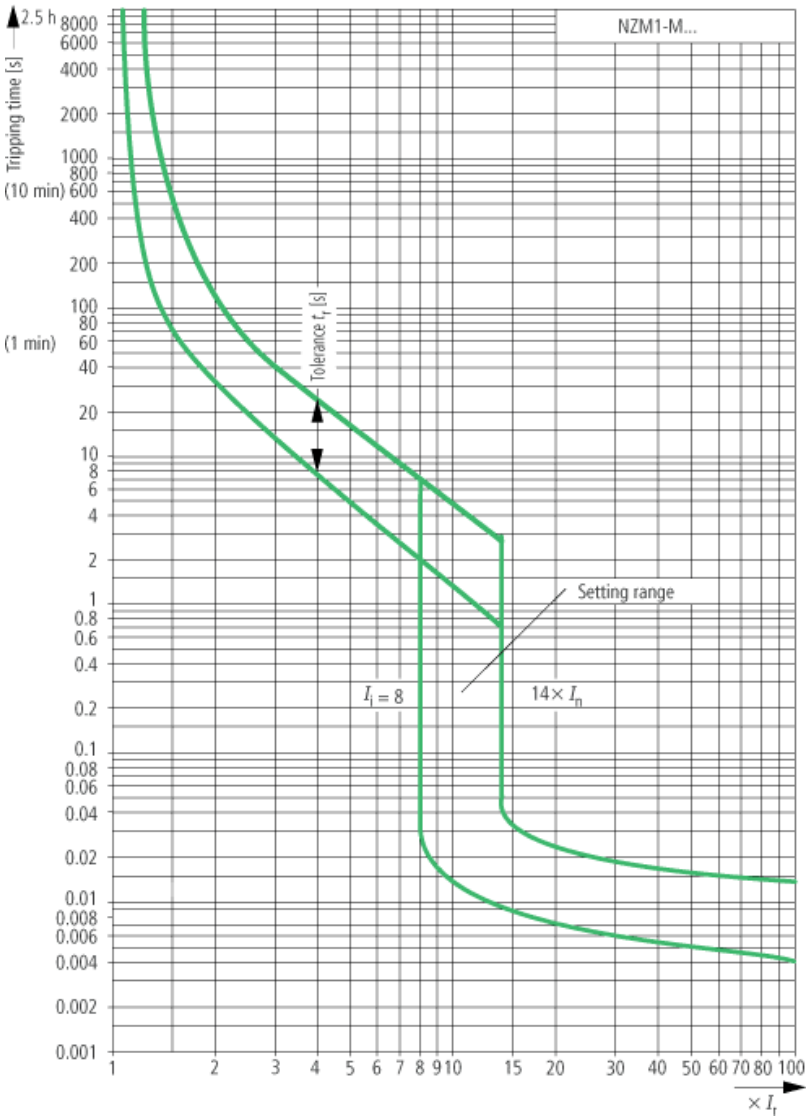
Overview

Basic equipment				
Box terminal	●	–	–	–
Screw connection	–	●	●	●
Accessories				
Box terminal	–	●	●	–
Screw connection	●	–	–	●
Tunnel terminal	●	●	●	●
Connection on rear	●	●	●	●
Flat conductor terminal	–	–	–	●

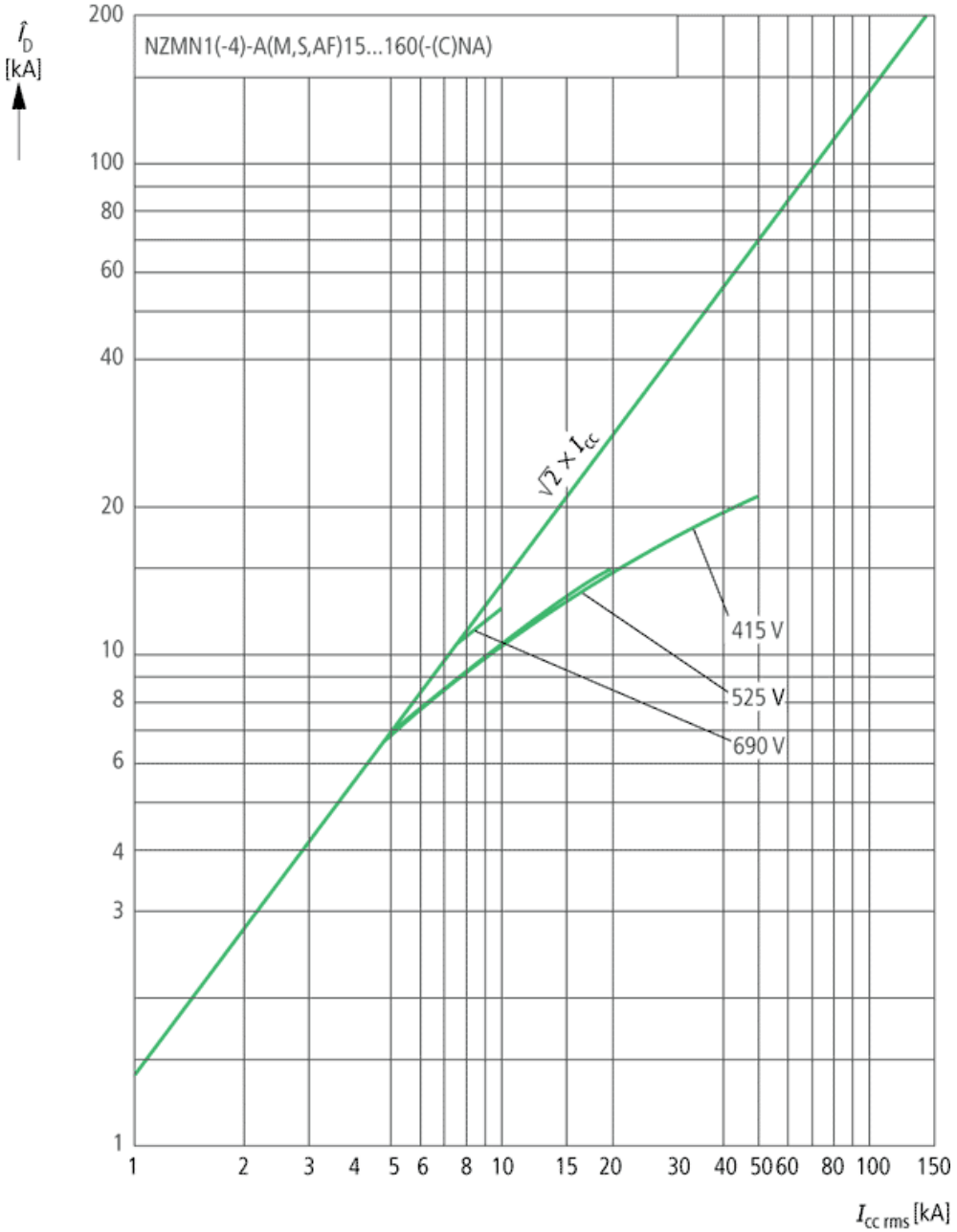
Dimensions



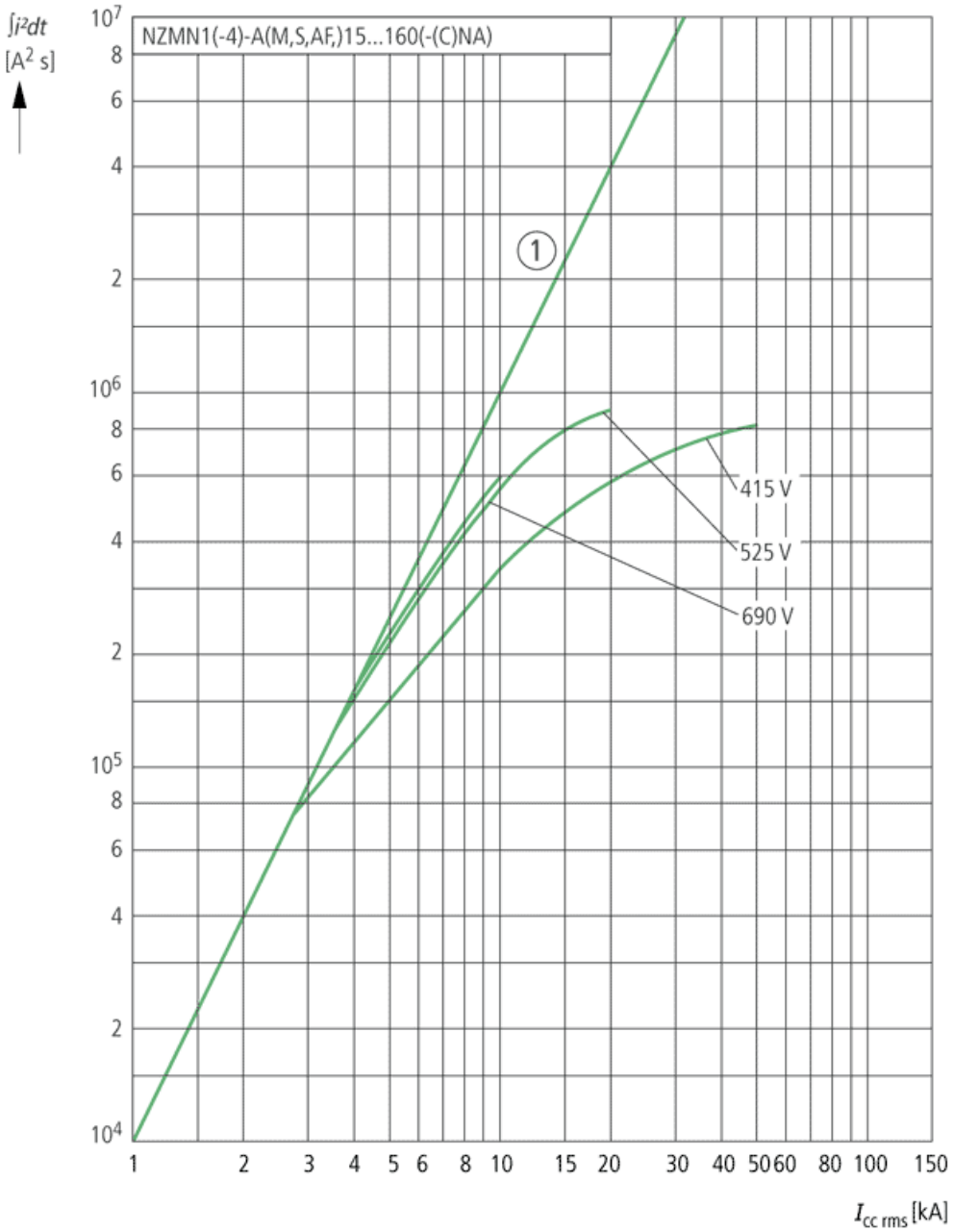
Characteristic curve



Characteristic curve



Characteristic curve



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