

Part no. **NZMN2-ME140-SVE**  
 Catalog No. **113257**

Similar to illustration

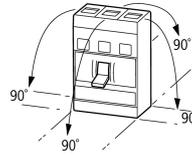
## Delivery program

Product range			Circuit-breaker
Protective function			Motor protection
Standard/Approval			IEC
Installation type			Plug-in units
Release system			Electronic release
Construction size			NZM2
Description			IEC/EN 60947-4-1, IEC/EN 60947-2  The circuit-breaker fulfills all requirements for AC-3 switching category.  R.m.s. value measurement and "thermal memory" Adjustable time delay setting to overcome current peaks $t_r$ at $6 \times I_r$ also infinity (without overload releases) All AC-3 rating data applies to direct switching by the circuit-breaker under normal operating conditions. If, for example, a contactor takes over AC-3 switching under normal operating conditions, the full rated uninterrupted current applies to the circuit-breaker, $I_n = I_u$ .
Number of poles			3 pole
Standard equipment			Screw connection
<b>Switching capacity</b>			
400/415 V 50 Hz	$I_{cu}$	kA	50
Rated current = rated uninterrupted current	$I_n = I_u$	A	140
<b>Setting range</b>			
Overload trip			
	$I_r$	A	70 - 140
Short-circuit releases			
			
Non-delayed	$I_i = I_n \times \dots$		2 - 14
			
<b>Motor rating AC-3 50/60 Hz</b>			
380 V 400 V	P	kW	75
660 V 690 V	P	kW	132
<b>Motor rating AC-3 50/60 Hz</b>			
400 V	P	kW	75
660 V 690 V	P	kW	132
<b>Rated operational current AC-3 50/60 Hz</b>			
400 V	$I_e$	A	134
690 V		A	134

## Technical data

### 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			
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
Mounting position			
			Vertical and 90° in all directions
			
			With XF1 earth-fault release: - NZM1, N1, NZM2, N2: vertical and 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	$I_n = I_u$	A	140
Rated surge voltage invariability			
Main contacts	$U_{imp}$	V	8000
Auxiliary contacts		V	6000
Rated operational voltage	$U_e$	V AC	690
Overvoltage category/pollution degree			
			III/3
Rated insulation voltage	$U_i$	V	1000
Use in unearthed supply systems		V	≤ 690

### Switching capacity

Rated short-circuit making capacity			
240 V	$I_{cm}$	kA	187
400/415 V	$I_{cm}$	kA	105
440 V 50/60 Hz	$I_{cm}$	kA	74
525 V 50/60 Hz	$I_{cm}$	kA	53
690 V 50/60 H	$I_c$	kA	40
Rated short-circuit breaking capacity $I_{cn}$			
$I_{cu}$ to IEC/EN 60947 test cycle 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	25
690 V 50/60 Hz	$I_{cu}$	kA	20
$I_{cs}$ to IEC/EN 60947 test cycle 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	25
690 V 50/60 Hz	$I_{cs}$	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
Lifespan, electrical			
AC-1			
400 V 50/60 Hz	Operations		10000
415 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
Total break time at short-circuit		ms	< 10

### Terminal capacity

Standard equipment				Screw connection
Accessories required				NZM2-XSVS
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 <sup>2</sup>	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		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)	
Al circular conductor				
Tunnel terminal				
Solid		mm <sup>2</sup>	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 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)				
Bolt terminal and rear-side connection				
Screw connection			M8	
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	140
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	16.17
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 8.0

Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss10.0.1-27-37-04-01 [AGZ529016])			
Overload release current setting		A	70 - 140
Adjustment range undelayed short-circuit release		A	140 - 1960
With thermal protection			Yes
Phase failure sensitive			Yes
Switch off technique			Electronic
Rated operating voltage		V	690 - 690
Rated permanent current I <sub>u</sub>		A	140
Rated operation power at AC-3, 230 V		kW	45
Rated operation power at AC-3, 400 V		kW	75
Type of electrical connection of main circuit			Screw connection
Type of control element			Rocker lever
Device construction			Built-in device plug-in technique
With integrated auxiliary switch			No
With integrated under voltage release			No

Number of poles		3
Rated short-circuit breaking capacity Icu at 400 V, AC	kA	35
Degree of protection (IP)		IP20
Height	mm	245
Width	mm	105
Depth	mm	180