

Select your language

- German
- English
- Spanish
- French
- Dutch
- Italian
- Polish
- Czech
- Russian
- Norwegian Bokmål

Worldwide English



Powering Business Worldwide

NZML2-ME140-SVE - Circuit-breaker, 3 p, 140A, plug-in module



169026 NZML2-ME140-SVE

[Overview](#) [Specifications](#) [Resources](#)



## 169026 NZML2-ME140-SVE

Circuit-breaker, 3 p, 140A, plug-in module

Alternate Catalog No.

NZML2-ME140-SVE

EL-Nummer (Norway)

4357076

Series NZM circuit-breakers cover all application cases with just four compact sizes and are suitable for the IEC market. Installation is always flexible thanks to the use of modular function groups.

- Delivery program
- Technical data
- Design verification as per IEC/EN 61439
- Technical data ETIM 7.0
- Characteristics
- Dimensions

### Delivery program

Product range

Circuit-breaker

Protective function

Motor protection



Standard/Approval

IEC

Installation type

Withdrawable

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

Switching capacity


400/415 V 50 Hz [ $I_{cu}$ ]

150 kA

Rated current = rated uninterrupted current [ $I_n = I_u$ ]

140 A

### Setting range

Overload trip  [ $I_t$ ]

70 - 140 A

Short-circuit releases  [ $I_{tm}$ ] Non-delayed  [ $I_t = I_n \times \dots$ ]

2 - 14

Motor rating AC-3 50/60 Hz [P]

380 V 400 V [P]

75 kW

660 V 690 V [P]

132 kW

Motor rating AC-3 50/60 Hz [P]

400 V [P]

75 kW

660 V 690 V [P]

132 kW

Rated operational current AC-3 50/60 Hz [ $I_e$ ]

400 V [ $I_e$ ]

134 A

690 V

134 A

## 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

- 40 - + 70 °C

Ambient temperature Operation

-25 - +70 °C

Mechanical shock resistance (10 ms half-sinusoidal shock) according to IEC 60068-2-27

20 (half-sinusoidal shock 20 ms) g

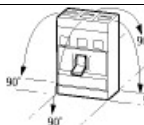
Safe isolation to EN 61140 Between auxiliary contacts and main contacts

500 V AC

Safe isolation to EN 61140 between the auxiliary contacts

300 V AC

Mounting position

Vertical and 90° in all directions	
	With XFI 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)

Degree of protection Enclosures

With insulating surround: IP40

With door coupling rotary handle: IP66

Degree of protection 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 [ $I_n = I_u$ ]

140 A

Rated surge voltage invariability [ $U_{imp}$ ] Main contacts

8000 V

Rated surge voltage invariability [ $U_{imp}$ ] Auxiliary contacts

6000 V

Rated operational voltage [ $U_e$ ]

690 V AC

Overvoltage category/pollution degree

III/3

Rated insulation voltage [ $U_i$ ]

1000 V

Use in unearthed supply systems

690 V

Switching capacity

Rated short-circuit making capacity [ $I_{cm}$ ] 240 V [ $I_{cm}$ ]

330 kA

Rated short-circuit making capacity [ $I_{cm}$ ] 400/415 V [ $I_{cm}$ ]

330 kA

Rated short-circuit making capacity [ $I_{cm}$ ] 440 V 50/60 Hz [ $I_{cm}$ ]

286 kA

Rated short-circuit making capacity [ $I_{cm}$ ] 525 V 50/60 Hz [ $I_{cm}$ ]

220 kA

Rated short-circuit making capacity [ $I_{cm}$ ] 690 V 50/60 Hz [ $I_{cm}$ ]

176 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cu}$  to IEC/EN 60947 test cycle O-t-CO [ $I_{cu}$ ] 240 V 50/60 Hz [ $I_{cu}$ ]

150 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cu}$  to IEC/EN 60947 test cycle O-t-CO [ $I_{cu}$ ] 400/415 V 50/60 Hz [ $I_{cu}$ ]

150 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cu}$  to IEC/EN 60947 test cycle O-t-CO [ $I_{cu}$ ] 440 V 50/60 Hz [ $I_{cu}$ ]

130 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cu}$  to IEC/EN 60947 test cycle O-t-CO [ $I_{cu}$ ] 525 V 50/60 Hz [ $I_{cu}$ ]

100 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cu}$  to IEC/EN 60947 test cycle O-t-CO [ $I_{cu}$ ] 690 V 50/60 Hz [ $I_{cu}$ ]

80 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cs}$  to IEC/EN 60947 test cycle O-t-CO-t-CO [ $I_{cs}$ ] 240 V 50/60 Hz [ $I_{cs}$ ]

150 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cs}$  to IEC/EN 60947 test cycle O-t-CO-t-CO [ $I_{cs}$ ] 400/415 V 50/60 Hz [ $I_{cs}$ ]

150 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cs}$  to IEC/EN 60947 test cycle O-t-CO-t-CO [ $I_{cs}$ ] 440 V 50/60 Hz [ $I_{cs}$ ]

130 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cs}$  to IEC/EN 60947 test cycle O-t-CO-t-CO [ $I_{cs}$ ] 525 V 50/60 Hz [ $I_{cs}$ ]

100 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]  $I_{cs}$  to IEC/EN 60947 test cycle O-t-CO-t-CO [ $I_{cs}$ ] 690 V 50/60 Hz [ $I_{cs}$ ]

80 kA

Rated short-circuit breaking capacity  $I_{cn}$  [ $I_{cn}$ ]

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 [ $I_{cw}$ ]

1.3 kA

Rated short-time withstand current  $t = 1$  s [ $I_{cw}$ ]

1.3 kA

Utilization category to IEC/EN 60947-2

A

Lifespan, mechanical (of which max. 50 % trip by shunt/undervoltage release) [Operations]

20000

Lifespan, electrical AC-1400 V 50/60 Hz [Operations]

10000

Lifespan, electrical AC-1415 V 50/60 Hz [Operations]

10000

Lifespan, electrical AC-1690 V 50/60 Hz [Operations]

7500  
 Lifespan, electricalAC--3400 V 50/60 Hz [Operations]  
 6500  
 Lifespan, electricalAC--3415 V 50/60 Hz [Operations]  
 6500  
 Lifespan, electricalAC--3690 V 50/60 Hz [Operations]  
 5000  
 Lifespan, electricalMax. operating frequency  
 120 Ops/h  
 Total break time at short-circuit  
 < 10 ms

**Terminal capacity**  
 Standard equipment  
 Screw connection  
 Accessories required  
 NZM2-XSVS  
 Optional accessories  
 Box terminal  
 Tunnel terminal  
 connection on rear  
 Round copper conductorBox terminalSolid  
 1 x (10 - 16)  
 2 x (6 - 16) mm<sup>2</sup>  
 Round copper conductorBox terminalStranded  
 1 x (25 - 185)  
 2 x (25 - 70) mm<sup>2</sup>  
 Round copper conductorTunnel terminalSolid  
 1 x 16 mm<sup>2</sup>  
 Round copper conductorTunnel terminalStranded1-hole  
 1 x (25 - 185) mm<sup>2</sup>  
 Round copper conductorBolt terminal and rear-side connectionDirect on the switchSolid  
 1 x (10 - 16)  
 2 x (6 - 16) mm<sup>2</sup>  
 Round copper conductorBolt terminal and rear-side connectionDirect on the switchStranded  
 1 x (25 - 185)  
 2 x (25 - 70) mm<sup>2</sup>  
 Al circular conductor Tunnel terminalSolid  
 1 x 16 mm<sup>2</sup>  
 Al circular conductor Tunnel terminalStrandedStranded  
 1 x (25 - 185) mm<sup>2</sup>  
 Cu strip (number of segments x width x segment thickness)Box terminal [min.]  
 2 x 9 x 0.8 mm  
 Cu strip (number of segments x width x segment thickness)Box terminal [max.]  
 10 x 16 x 0.8  
 (2x) 8 x 15.5 x 0,8 mm  
 Cu strip (number of segments x width x segment thickness)Bolt terminal and rear-side connectionFlat copper strip,  
 with holes [min.]  
 2 x 16 x 0.8 mm  
 Cu strip (number of segments x width x segment thickness)Bolt terminal and rear-side connectionFlat copper strip,  
 with holes [max.]  
 10 x 24 x 0.8 mm  
 Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionScrew connection  
 MB  
 Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionDirect on the switch [min.]  
 16 x 5 mm  
 Copper busbar (width x thickness) [mm]Bolt terminal and rear-side connectionDirect on the switch [max.]  
 24 x 8 mm  
 Control cables  
 1 x (0.75 - 2.5)  
 2 x (0.75 - 1.5) mm<sup>2</sup>

## Design verification as per IEC/EN 61439

Technical data for design verification  
 Rated operational current for specified heat dissipation [I<sub>n</sub>]  
 140 A  
 Equipment heat dissipation, current-dependent [P<sub>vid</sub>]  
 16.17 W  
 Operating ambient temperature min.

-25 °C

Operating ambient temperature max.

+70 °C

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 Strength of materials and parts 10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2 Strength of materials and parts 10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2 Strength of materials and parts 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 Strength of materials and parts 10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2 Strength of materials and parts 10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts 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 Insulation properties 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9 Insulation properties 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 7.0

Low-voltage industrial components (EG000017) / Mtor protection circuit-breaker (EC000074)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Mtor protection circuit-breaker (ecl@ss10.0.1-27-37-04-01 [AGZ529016])

Overload release current setting

70 - 140 A

Adjustment range undelayed short-circuit release

280 - 1960 A

With thermal protection

Yes

Phase failure sensitive

Yes

Switch off technique

Electronic

Rated operating voltage

690 - 690 V

Rated permanent current I<sub>n</sub>

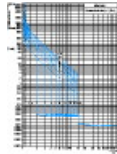
140 A

Rated operation power at AC-3, 230 V

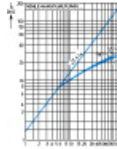
140 kW  
 Rated operation power at AC-3, 400 V  
 68 kW  
 Type of electrical connection of main circuit  
 Screw connection  
 Type of control element  
 Rocker lever  
 Device construction  
 Built-in device plug-in technique  
 With integrated auxiliary switch  
 No  
 With integrated under voltage release  
 No  
 Number of poles  
 3  
 Rated short-circuit breaking capacity  $I_{cu}$  at 400 V, AC  
 150 kA  
 Degree of protection (IP)  
 IP20  
 Height  
 245 mm  
 Width  
 105 mm  
 Depth  
 180 mm

## Characteristics

Characteristic curve

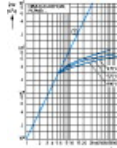


Characteristic curve



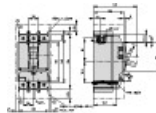
Let-through current

Characteristic curve

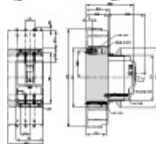
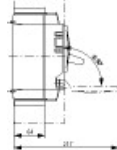


Let-through energy

## Dimensions



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



- [Product-specific CAD data](#)  
(Web)
- [3D Preview](#)  
(Web)

## DWG files

- [DA-CD-nzm2\\_ve100\\_sve](#)  
File  
(Web)

## edz files

- [DA-CE-ETN.NZM2-ME140-SVE](#)  
File  
(Web)

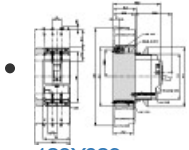
## Step files

- [DA-CS-nzm2\\_ve100\\_sve](#)  
File  
(Web)

## Additional product information

- [Temperature dependency, Derating](#)  
(Web)
- [additional technical information for NZM power switch](#)  
(PDF)

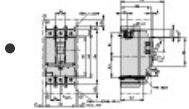
## Dimensions single product



[123X029](#)

Line drawing

Plug-in adapter elements



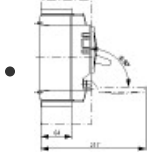
[123X312](#)

Line drawing

Circuit-breaker, switch-disconnector, 3-pole

Blow out area, minimum clearance to adjacent parts

Minimum clearance to adjacent parts

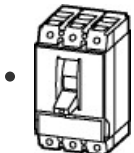


[123X341](#)

Line drawing

Circuit-breakers, switch-disconnectors

## 3D drawing



[123I247](#)

Line drawing

Circuit-breakers, switch-disconnectors

# Product photo



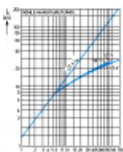
1230PC-910  
Photo

# Standards

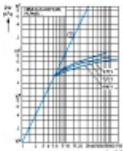


0000SFC-571  
Logo  
IE3-ready logo 4c  
(Int)

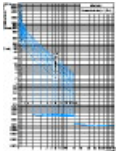
# Characteristic curve



1230DIA-193  
Coordinate visualization



1230DIA-197  
Coordinate visualization



123U179  
Coordinate visualization  
NZM2-ME90...220 tripping characteristic

# Instruction Leaflet

- [NZMB, NZMN \(IL01206006Z\)](#)  
Asset  
(PDF, 11/2015, Language independent)

# Download-Center

- [Download-Center \(this item\)](#)  
Eaton EMEA Download-Center - download data for this item
- [Download-Center](#)  
Eaton EMEA Download-Center

[Generate data sheet in PDF format](#)

[Generate data sheet in Excel format](#)

[Write a comment](#)

[Imprint](#) [Privacy Policy](#) [Legal Disclaimer](#) [Terms and Conditions](#)

© 2022 by Eaton Industries GmbH