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Worldwide English



NZMH1-A80-SVE - Circuit-breaker, 3p, 80A, plug-in module



112801 NZMH1-A80-SVE

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



112801 NZMH1-A80-SVE

Circuit-breaker, 3p, 80A, plug-in module

EL-Nummer (Norway)

4363487

Circuit-breaker NZM1, 3 pole, Switching capacity 400/415 V 50 Hz(I_{cu}): 100 kA, Rated current = rated uninterrupted current Rated current = rated uninterrupted current(I_n = I_u): 80 A, Installation type: Plug-in units, Box terminal, Standard/Approval: IEC, Protective function: System and cable protection

- [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

System and cable protection

Standard/Approval

IEC

Installation type

Plug-in units

Release system

Thermomagnetic release

Construction size

NZM1

Number of poles

3 pole

Standard equipment

Box terminal

Switching capacity

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

100 kA

Rated current = rated uninterrupted current [I_n = I_u]

Rated current = rated uninterrupted current [I_n = I_u]

80 A

Setting range

Overload trip  [I_t]

63 - 80 A

Short-circuit releases $\left[I_{\Delta n} \right]$ Non-delayed $\left[I_{\Delta n} \right]$ $[I_{\Delta n} = I_n \times \dots]$

6 - 10

Short-circuit releases $\left[I_{\Delta n} \right]$

480 - 800 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

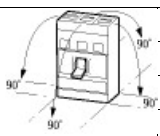
Safe isolation to EN 61140 Between auxiliary contacts and main contacts

500 V AC

Safe isolation to EN 61140 between the auxiliary contacts

300 V AC

Mounting position

Vertical and 90° in all directions	
	With XF 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 $[I_n = I_u]$

80 A

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

6000 V

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

6000 V

Rated operational voltage $[U_b]$

690 V AC

Overvoltage category/pollution degree

III/3

Rated insulation voltage $[U]$

690 V

Use in unearthed supply systems

□ 690 V

Switching capacity

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

220 kA

Rated short-circuit making capacity [I_{cm}] 400/415 V [I_{cm}]
220 kA
Rated short-circuit making capacity [I_{cm}] 440 V 50/60 Hz [I_{cm}]
154 kA
Rated short-circuit making capacity [I_{cm}] 525 V 50/60 Hz [I_{cm}]
40 kA
Rated short-circuit making capacity [I_{cm}] 690 V 50/60 Hz [I_{cm}]
17 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cu} to IEC/EN 60947 test cycle O-t-OO [I_{cu}] 240 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-OO [I_{cu}] 400/415 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-OO [I_{cu}] 440 V 50/60 Hz [I_{cu}]
70 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cu} to IEC/EN 60947 test cycle O-t-OO [I_{cu}] 525 V 50/60 Hz [I_{cu}]
20 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cu} to IEC/EN 60947 test cycle O-t-OO [I_{cu}] 690 V 50/60 Hz [I_{cu}]
10 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cs} to IEC/EN 60947 test cycle O-t-OO-t-OO [I_{cs}] 240 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-OO-t-OO [I_{cs}] 400/415 V 50/60 Hz [I_{cs}]
50 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cs} to IEC/EN 60947 test cycle O-t-OO-t-OO [I_{cs}] 440 V 50/60 Hz [I_{cs}]
35 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cs} to IEC/EN 60947 test cycle O-t-OO-t-OO [I_{cs}] 525 V 50/60 Hz [I_{cs}]
10 kA
Rated short-circuit breaking capacity I_{cn} [I_{cn}] I_{cs} to IEC/EN 60947 test cycle O-t-OO-t-OO [I_{cs}] 690 V 50/60 Hz [I_{cs}]
7.5 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.
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, electrical Max. operating frequency
120 Ops/h
Total break time at short-circuit
< 10 ms
Terminal capacity
Standard equipment
Box terminal
Accessories required
NZM1-XSVS
Optional accessories
Screw connection
Tunnel terminal
connection on rear
Round copper conductor Box terminal Solid
1 x (10 - 16)
2 x (6 - 16) mm²
Round copper conductor Box terminal Stranded
1 x (10 - 70) ³⁾
2 x (6-25) mm²
Round copper conductor Box terminal
³⁾ Up to 95 mm² can be connected depending on the cable manufacturer.
Round copper conductor Tunnel terminal Solid
1 x 16 mm²
Round copper conductor Tunnel terminal Stranded 1-hole
1 x (25 - 95) mm²
Round copper conductor Bolt terminal and rear-side connection Direct on the switch Solid
1 x (10 - 16)
2 x (6 - 16) mm²

Round copper conductor Bolt terminal and rear-side connection Direct on the switch Stranded
 1 x (10 - 70) ³⁾
 2 x 25 mm²
 Round copper conductor Bolt terminal and rear-side connection Direct on the switch
³⁾ Up to 95 mm² can be connected depending on the cable manufacturer.
 Al circular conductor Tunnel terminal Solid
 1 x 16 mm²
 Al circular conductor Tunnel terminal Stranded Stranded
 1 x (25 - 95) mm²
 Al circular conductor Bolt terminal and rear-side connection Direct on the switch Solid
 1 x (10 - 16)
 2 x (10 - 16) mm²
 Al circular conductor Bolt terminal and rear-side connection Direct on the switch Stranded
 1 x (25 - 35)
 2 x (25 - 35) mm²
 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.]
 9 x 9 x 0.8 mm
 Copper busbar (width x thickness) [mm] Bolt terminal and rear-side connection Screw connection
 M6
 Copper busbar (width x thickness) [mm] Bolt terminal and rear-side connection Direct on the switch [min.]
 12 x 5 mm
 Copper busbar (width x thickness) [mm] Bolt terminal and rear-side connection Direct on the switch [max.]
 16 x 5 mm
 Control cables
 1 x (0.75 - 2.5)
 2 x (0.75 - 1.5) mm²

Design verification as per IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat dissipation [I_n]

80 A

Equipment heat dissipation, current-dependent [P_{ed}]

16.32 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) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09

[AJZ716013])

Rated permanent current I_n

80 A

Rated voltage

690 - 690 V

Rated short-circuit breaking capacity I_{cu} at 400 V, 50 Hz

100 kA

Overload release current setting

63 - 80 A

Adjustment range short-term delayed short-circuit release

0 - 0 A

Adjustment range undelayed short-circuit release

480 - 800 A

Integrated earth fault protection

No

Type of electrical connection of main circuit

Frame clamp

Device construction

Built-in device plug-in technique

Suitable for DIN rail (top hat rail) mounting

No

DIN rail (top hat rail) mounting optional

Yes

Number of auxiliary contacts as normally closed contact

0

Number of auxiliary contacts as normally open contact

0

Number of auxiliary contacts as change-over contact

0

With switched-off indicator

No

With under voltage release

No

Number of poles

3

Position of connection for main current circuit

Front side

Type of control element

Rocker lever

Complete device with protection unit

Yes

Motor drive integrated

No

Motor drive optional

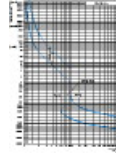
No

Degree of protection (IP)

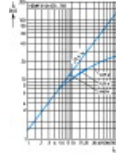
IP20

Characteristics

Characteristic curve

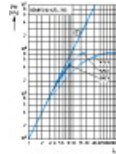


Characteristic curve



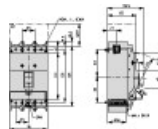
Let-through current

Characteristic curve



Let-through energy

Dimensions



□ Blow out area, minimum clearance to adjacent parts



CAD data

- Product-specific CAD data
(Web)
- 3D Preview
(Web)

DWG files

- DA-CD-nzm1_xsve
File
(Web)

Step files

- DA-CS-nzm1_xsve
File
(Web)

Additional product information

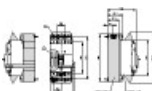
- [Temperature dependency, Derating](#)
(Web)
- [CurveSelect characteristics program](#)
(Web)
- [additional technical information for NZM power switch](#)
(PDF)

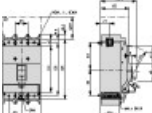
Product photo

- 

1230PIC-850
Photo

Dimensions single product

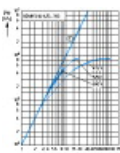
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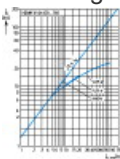
1230DIM-224
Line drawing
Plug-in adapter size 1
☐ Up to 2 padlocks
- 

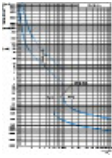
123X039
Line drawing
Circuit-breaker NZM...1-...-(C)NA
☐ Blow out area, minimum clearance to adjacent parts
- 

123X506
Line drawing
Circuit-breakers, switch-disconnectors

Characteristic curve

- 

1230DIA-14
Coordinate visualization
Let-through energy
- 

1230DIA-4
Coordinate visualization
Let-through current
- 

123U177
Coordinate visualization
NZM1-A40...125 tripping characteristic

Symbol

- New**
0000SFC-173
Graphic
Logo new yellow small

Instruction Leaflet

- [IL01203004Z](#)
Asset
(PDF, Language independent)

Download-Center

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