MOELLER

Type: **NZMN4–AE1000**
Article No.: **265760**
Sales text **Circuit–breaker 3p 1000A**



| Ordering information | | | |
|---|---|---|---|
| Number of poles | | | 3–pole |
| Description | | | Terminal screws standard, terminals as accessories |
| Rated current = rated uninterrupted current | $I_u$ | A | 1000 |
| Setting range | | | |
| Overload releases | $I_r$ | A | 500...1000 |
| Switching capacity | | | |
| Switching capacity | | kA | 50 |
| Release system | | | Electronic release |
| Frame size | | | NZM4 |

**Notes concerning the product group**

IEC/EN 60947–2

Adjustable overload release $I_r$

- 0.5 ... 1 × $I_n$ (ex–works 0.8 × $I_n$)

R.m.s. value measurement and “thermal memory”

Adjustable short–circuit release $I_i$

- NZM...3–AE250/400: 2 ... 11 × $I_n$ (ex–works 6 × $I_n$)
- NZM...3–AE630: 2 ... 8 × $I_n$ (ex–works 6 × $I_n$)
- NZM...4–AE...: 2 ... 12 × $I_n$ (ex–works 6 × $I_n$)

High switching capacity for NZMH4–AE...: 85 kA; please enquire for higher switching capacities.

**Notes concerning the product group**

Notes for terminals 260042

| **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<br>Damp heat, cyclical to IEC 60068–2–30 |
| Ambient temperature | | | |
| Ambient temperature, Storage | | °C | ... 25...+70 |
| Operation | | °C | ... 25...+70 |
| Mechanical shock resistance (IEC/EN 60068–2–27) | | | |
| Shock resistance | | g | 15 (half–sinusoidal shock 11 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 | 21 |
| 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<br>Phase isolator and strip terminal: IP00 |

| | | | |
|---|---|---|---|
| **Circuit–breakers** | | | |
| Rated impulse withstand voltage $U_{imp}$ | | | |
| Main contacts | | 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 |
| For use in IT electrical power networks | | V | 525 |
| **Switching capacity** | | | |
| Rated short–circuit making capacity | | | |
| 240 V | $I_{cm}$ | kA | 105 |
| 400/415 V | $I_{cm}$ | kA | 105 |
| 440 V | $I_{cm}$ | kA | 74 |
| 525 V | $I_{cm}$ | kA | 53 |
| 690 V | $I_{cm}$ | kA | 40 |
| 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 | 50 |
| 400/415 V 50/60 Hz | $I_{cu}$ | kA | 50 |
| 415 V AC | $I_{cu}$ | 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 |
| $I_{cu}$ to IEC/EN 60947 operating sequence O–t–CO–t–CO | | | |
| 240 V 50/60 Hz | $I_{cs}$ | kA | 37 |
| 400/415 V 50/60 Hz | $I_{cs}$ | kA | 37 |
| 415 V AC | $I_{cs}$ | kA | 37 |
| up to 440 V 50/60 Hz | $I_{cs}$ | kA | 26 |
| 525 V 50/60 Hz | $I_{cs}$ | kA | 19 |
| up to 690 V 50/60 Hz | $I_{cs}$ | kA | 15 |
| 690 V AC | $I_{cs}$ | kA | 15 |
| Maximum low–voltage h.b.c. fuse | | A gG/gL | NZMN4–...630...1250: 2 × 630NZMN4–...1600: 2 × 800NZMN4–2000: 2 × 1000 |

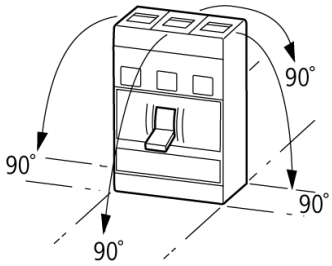
| | | | |
|---|---|---|---|
| **Technical data, divergent from the products for the IEC market**Switching capacity NA switches (UL489, CSA 22.2 No. 5.1) | | | |
| 240 V 60 Hz | | kA | 85 |
| 480V 60Hz | | kA | 42 |
| 600 V 60 Hz | | kA | 35 |
| Utilization category to IEC/EN 60947–2 | | | B (2000A: A) |
| Rated short–time withstand current | | | |
| t = 0.3 s | $I_{cw}$ | kA | 19,2 |
| t = 1 s | $I_{cw}$ | kA | 19,2 |
| Lifespan, mechanical | Operations | | 10000 |
| Maximum operating frequency | | | |
| Max. operating frequency | | Ops/h | 60 |
| Lifespan, electrical | | | |
| AC–1 | | | |
| 400/415 V 50/60 Hz | Operations | | 3000 |
| 415 V | Operations | | 3000 |
| 690 V 50/60 Hz | Operations | | 2000 |
| AC––3 | | | |
| 400/415 V 50/60 Hz | Operations | | 2000 |
| 415 V | Operations | | 2000 |
| 690 V 50/60 Hz | Operations | | 1000 |
| Current heat loss per pole at $I_u$ | | W | 97 (2000 A: 151) |
| Current heat loss (3–pole) at $I_u$ | | W | 97 |
| Overload releases | | | |
| to IEC/EN 60947, VDE 0660 | | | |
| Temperature compensation | | | 0 |
| Frequency range | | ms | < 25  415 V; < 35 > 415 V |
| **Terminal capacities** | | | |
| Standard equipment | | | Screw terminal |
| Accessories | | | Tunnel terminal<br>Connection on rear<br>Strip terminal |
| Rated power of coil | | | |
| Tunnel terminal | | | |
| Stranded | | | |
| 4–hole | | $mm^2$ | 4 × (50 – 240) |
| | | | |

| | | | |
|---|---|---|---|
| Bolt terminal and rear−side connection | | | |
| Direct on the switch | | | |
| Stranded | | $mm^2$ | 1 × (120 ... 185)<br>4 × (50 ... 185) |
| Module plate | | | |
| Single hole | min. | $mm^2$ | 1 × (120 – 300) |
| Single hole | max. | $mm^2$ | 2 × (95 – 300) |
| Module plate | | | |
| Double hole | min. | $mm^2$ | 2 × (95 – 185) |
| Double hole | max. | $mm^2$ | 4 × (35 – 185) |
| Connection width extension | | $mm^2$ | 4 × 300<br>6 × (95 – 240) |
| Al conductors, Cu cable | | | |
| Tunnel terminal | | | |
| Stranded | | | |
| 4−hole | | $mm^2$ | 4 × (50 – 240) |
| Bolt terminal and rear−side connection | | | |
| Module plate | | | |
| Single hole | min. | $mm^2$ | 1 × (185 – 240) |
| Single hole | max. | $mm^2$ | 2 × (70 – 185) |
| Module plate | | | |
| Double hole | | $mm^2$ | 4 × 50 |
| Connection width extension | | $mm^2$ | 2 × 240<br>6 × (70 – 240) |
| Cu strip (number of segments x width x segment thickness) | | | |
| Flat conductor terminal | | | |
| | min. | mm | 6 × 16 × 0.8 |
| | max. | mm | (2 ×) 10 × 32 × 1.0 |
| Module plate | | | |
| Single hole | | $mm^2$ | (2 ×) 10 × 50 × 1.0 |
| Bolt terminal and rear−side connection | | | |
| Flat copper strip, with holes | min. | mm | (2 ×) 10 × 50 × 1.0 |
| Flat copper strip, with holes | max. | mm | (2 ×) 10 × 50 × 1.0 |
| Connection width extension | | $mm^2$ | (2 ×) 10 × 80 × 1.0 |
| Copper busbar (width × thickness) | | | |
| Bolt terminal and rear−side | | | |

| | | | |
|---|---|---|---|
| connection | | | |
| Screw connection | | | M10 |
| Direct on the switch | | | |
| | min. | $mm^2$ | 25 × 5 |
| | max. | $mm^2$ | 2 × (50 × 10)<br>2 × (80 × 10) |
| Module plate | | | |
| Single hole | min. | $mm^2$ | 25 × 5 |
| Single hole | max. | $mm^2$ | 2 × (50 × 10) |
| Module plate | | | |
| Double hole | | $mm^2$ | 2 × (50 × 10) |
| Connection width extension | | | |
| Connection width extension | min. | $mm^2$ | 60 × 10 |
| Connection width extension | max. | $mm^2$ | 2 × (80 × 10) |
| **Notes** | | | |
| **Notes** | | | For rated operational voltage the following applies: DC voltage values on request<br>For switching capacity of NA switches with NZM...1–...NA the following applies: 480Y/277 V from 60 A<br>For rated operational current AC–3 at NZMB2, NZMN2, NZMH2, NZM4 the following applies: 400 V: max. 650 kW; 600 V: max. 600 kW<br>For switching capacity of NA switches with NZML2 and NZML3 the following applies: current limiting switch to UL489<br>For overload release temperature compensation NZM2 thermomagnetic the following applies: with NZM1...1–...160: 0.4<br>For switching capacity of NA switches with NZML4 at 240 V 60 Hz the following applies: please enquire<br>The current heat loss per pole ratings refer to the maximum current rating of the frame size. |

**Mounting position**

Vertical and 90° in all directions




With plug−in adapterNZM2, N(S)2: vertical, 90° right/left

With withdrawable unit, NZM3, N(S)3: vertical, 90° left, NZM4, N(S)4: vertical, with remote operator: NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° to all directions

mit FehlerstromauslöserNZM2: senkrecht und 90° nach allen Richtungen

**Overview**

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

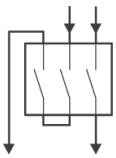
**Notes**

For rated operational voltage switching on 3 contacts the following applies: DC correction factor for instantaneous release response value NZM1: 1.25, NZM2: 1.35

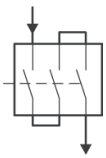
Setting for $I_i$ at DC = setting $I_i$ AC/DC correction factor

Details apply for 3−pole system protection circuit−breaker with thermomagnetic release NZM(H)1(2)−A...

**Switching of one pole via two series contacts**



Switching of one pole via three series contacts



For NA switch switching capacity with NZM...1−...(C)NA the following applies: 480 Y/277 V from 60 A

For AC−3 rated operational current with NZM4 the following applies: 400 V: max. 650 kW; 690 V: max. 600 kW

For NA switch switching capacity with NZML2 and NZML3 the following applies: Current Limiting switch to UL489

For 3−pole system protection circuit−breaker the AC−3 specification is not applicable

For NA switch switching capacity with NZML4 at 240 V 60 Hz the following applies: on request

For current heat loss per pole the specification refers to the maximum nominal current of the frame size.

For 3−pole system protection circuit−breaker the following applies: 690 V

For 3−pole system protection circuit−breaker the following applies: 400/415 V 7500 switching operations

Maximum back−up fuse, if the expected short−circuit currents at the installation location exceed the switching capacity of the circuit−breaker.

≦ 1600 A

Higher switching capacity on request

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**Notes**

XSV = plug−in unit

XAV = withdrawable unit

TM = thermomagnetic

E = electronic

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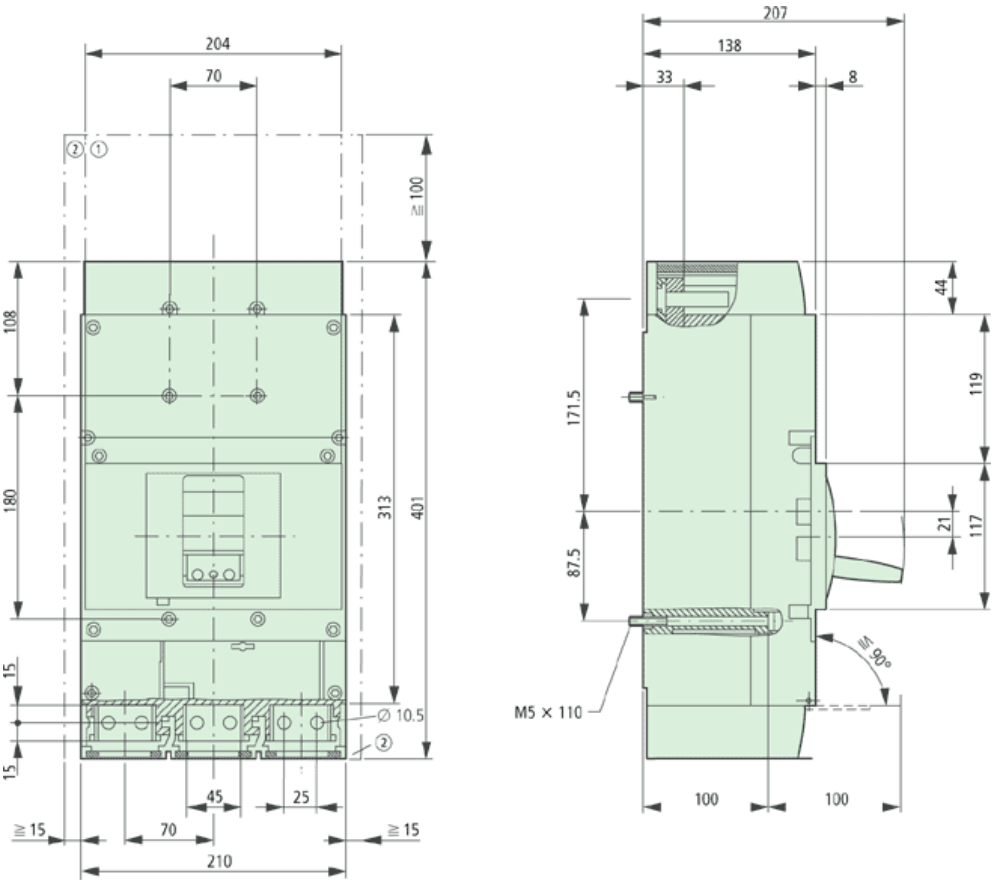
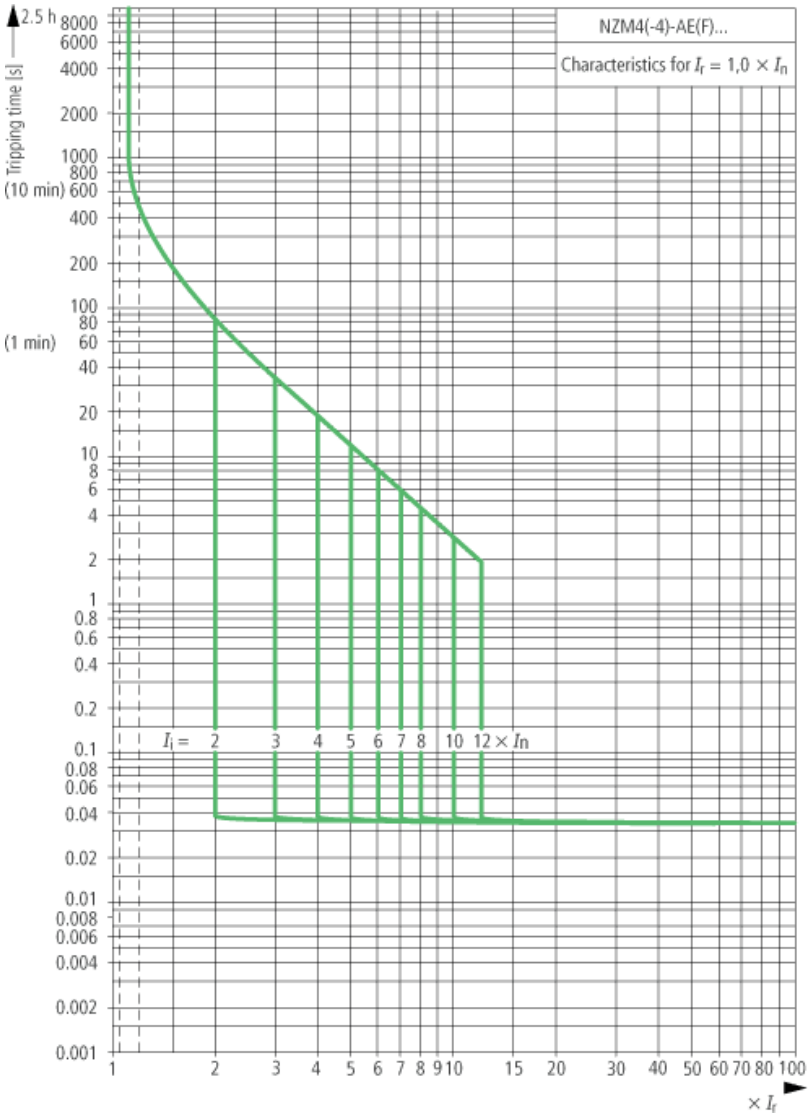
**Dimensions**



Blow out area, minimum distance to other parts  100 mm up to 690 V;  200 mm up to 1000 V
Minimum distance to adjacent parts  15 mm

**Characteristic curve**




System and line protection with NZM4

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