





**Circuit-breaker, 3p, 125A**

**Part no. NZMN2-S125**  
**Catalog No. 265739**

Similar to illustration

## Delivery program

|   |                          |    |  |
|---|--------------------------|----|--|
| Product range   |                          |    | Circuit-breaker  |
| Protective function   |                          |    | Short-circuit protection   |
| Standard/Approval   |                          |    | IEC  |
| Installation type   |                          |    | Fixed  |
| Release system  |                          |    | Thermomagnetic release   |
| Construction size   |                          |    | NZM2   |
| Description   |                          |    | Motor protection in conjunction with overload relay<br>With short-circuit release<br>Without overload release Ir<br>IEC/EN 60947-4-1, IEC/EN 60947-2<br><br>The circuit-breaker fulfills all requirements for AC-3 switching category. |
| Number of poles   |                          |    | 3 pole   |
| Standard equipment  |                          |    | Screw connection   |
| Rated current = rated uninterrupted current   | $I_n = I_u$              | A  | 125  |
| <b>Switching capacity</b>   |                          |    |  |
| 400/415 V 50 Hz   | $I_{cu}$                 | kA | 50   |
| <b>Setting range</b>  |                          |    |  |
| Short-circuit releases  |                          |    |  |
|  |                          |    |  |
| Non-delayed   | $I_i = I_n \times \dots$ |    | 8 - 14   |
|  |                          |    |  |
| <b>Motor rating AC-3 at 400 V 50/60 Hz</b>  |                          |    |  |
| 380 V 400 V   | P                        | kW | 45   |
| <b>Rated operational current AC-3 at 400 V 50/60 Hz</b>                             |                          |    |  |
| 400 V   | $I_e$                    | A  | 99   |

## 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<br>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  |
| Weight  |  | kg   | 2.345  |
| 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)        |
| Enclosures                             |  | With insulating surround: IP40<br>With door coupling rotary handle: IP66 |
| Terminations                           |  | Tunnel terminal: IP10<br>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    | 125   |
| Rated surge voltage invariability           | $U_{imp}$   |      |       |
| 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  |
| Use in unearthed supply systems             |             | V    | ≤ 690 |

### Switching capacity

|   |            |    |   |
|---|------------|----|---|
| Rated short-circuit making capacity   | $I_{cm}$   |    |   |
| 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 $I_{cn}$                              | $I_{cn}$   |    |   |
| $I_{cu}$ to IEC/EN 60947 test cycle O-t-CO                                  | $I_{cu}$   | kA |   |
| 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                             | $I_{cs}$   | kA |   |
| 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   |
| Rated short-time withstand current  |            |    | Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker. |
| $t = 0.3$ s   | $I_{cw}$   | kA | 1.9   |
| $t = 1$ s   | $I_{cw}$   | 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                                      |
| Optional accessories                                      |      |                 | Box terminal<br>Tunnel terminal<br>connection on rear |
| Round copper conductor                                    |      |                 |   |
| Box terminal  |      |                 |   |
| Solid   |      | mm <sup>2</sup> | 1 x (10 - 16)<br>2 x (6 - 16)                         |
| Stranded  |      | mm <sup>2</sup> | 1 x (25 - 185)<br>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)<br>2 x (6 - 16)                         |
| Stranded  |      | mm <sup>2</sup> | 1 x (25 - 185)<br>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)  |
| Bolt terminal and rear-side connection                    |      |                 |   |
| Direct on the switch                                      |      |                 |   |
| Solid   |      | mm <sup>2</sup> | 1 x (10 - 16)<br>2 x (10 - 16)                        |
| Stranded  |      | mm <sup>2</sup> | 1 x (25 - 50)<br>2 x (25 - 50)                        |
| 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<br>(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)                         |      | mm              |   |
| 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)<br>2 x (0.75 - 1.5)                  |

## Design verification as per IEC/EN 61439

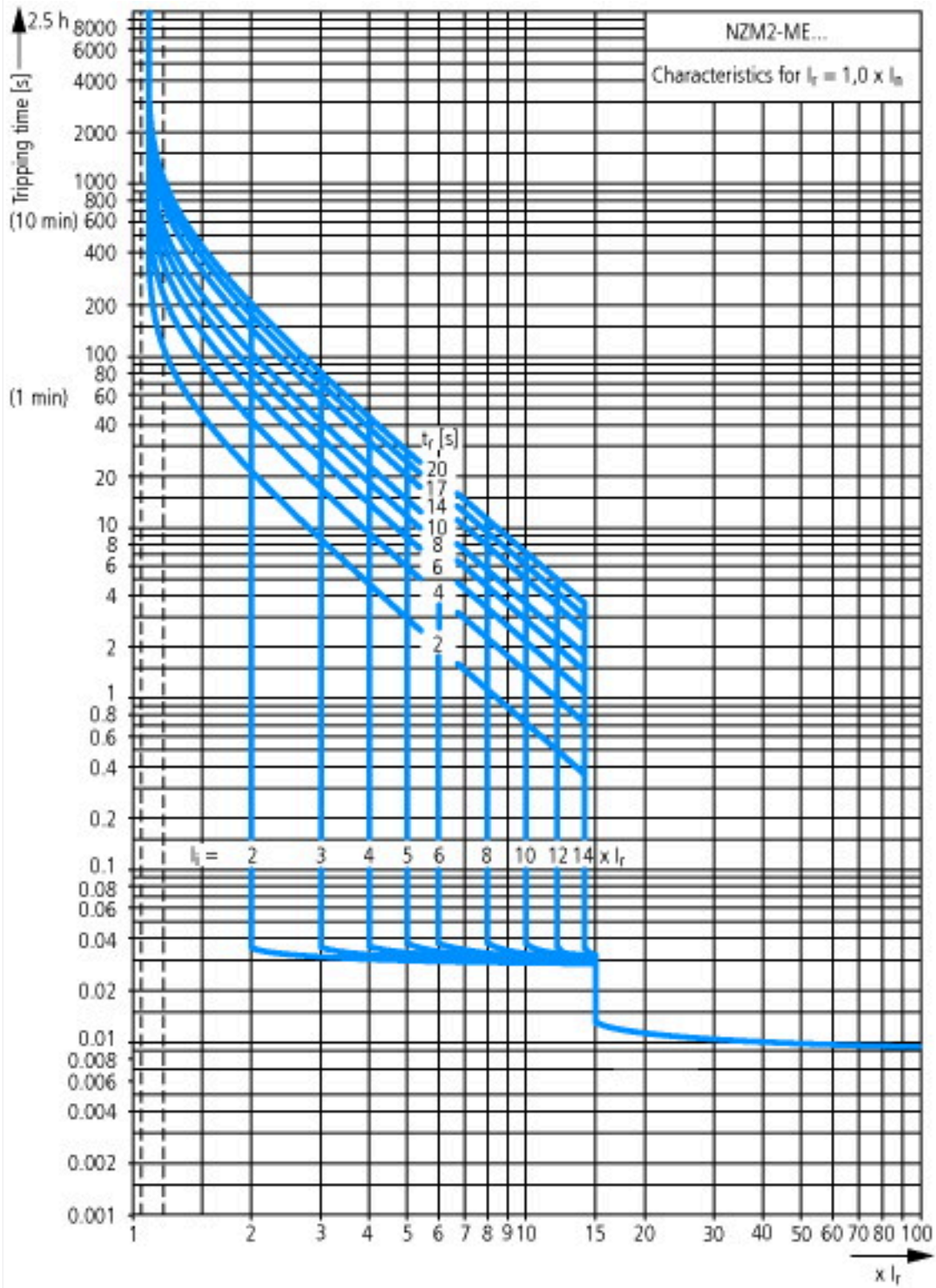
| Technical data for design verification   |           |    |  |
|--|-----------|----|--|
| Rated operational current for specified heat dissipation   | $I_n$     | A  | 125  |
| Equipment heat dissipation, current-dependent  | $P_{vid}$ | W  | 27.61  |
| Operating ambient temperature min.   |           | °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  |           |    | Meets the product standard's requirements.   |
| 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 7.0

| 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  | 0 - 0                                    |
| Adjustment range undelayed short-circuit release  |  | A  | 8 - 14                                   |
| With thermal protection   |  |    | No                                       |
| Phase failure sensitive   |  |    | No                                       |
| Switch off technique  |  |    | Magnetic                                 |
| Rated operating voltage   |  | V  | 690 - 690                                |
| Rated permanent current $I_u$   |  | A  | 125                                      |
| Rated operation power at AC-3, 230 V  |  | kW | 37                                       |
| Rated operation power at AC-3, 400 V  |  | kW | 45                                       |
| Type of electrical connection of main circuit   |  |    | Screw connection                         |
| Type of control element   |  |    | Rocker lever                             |
| Device construction   |  |    | Built-in device fixed built-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   |  | kA | 50                                       |
| Degree of protection (IP)   |  |    | IP20                                     |

|        |    |     |
|--------|----|-----|
| Height | mm | 184 |
| Width  | mm | 105 |
| Depth  | mm | 149 |

## Characteristics











## Dimensions



- ① Blow out area, minimum clearance to adjacent parts
- ② Minimum clearance to adjacent parts



### Additional product information (links)

|   |   |
|---|---|
| Temperature dependency, Derating                      | <a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.172">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.172</a>   |
| CurveSelect characteristics program                   | <a href="http://www.eaton.eu/DE/Europe/Electrical/CustomersSupport/ConfigurationTools/CharacteristicsProgram/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomersSupport/ConfigurationTools/CharacteristicsProgram/index.htm</a>         |
| Eaton configurator                                    | <a href="http://www.eaton.eu/DE/Europe/Electrical/CustomersSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomersSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm</a> |
| additional technical information for NZM power switch | <a href="https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_techinc_de_en.pdf">https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_techinc_de_en.pdf</a>   |