







Circuit-breaker, 3p, 63A

Part no. **NZMC1-A63**  
 Catalog No. **271394**

Similar to illustration

## Delivery program

|   |                          |    |  |                             |
|---|--------------------------|----|--|-----------------------------|
| Product range   |                          |    |  | Circuit-breaker             |
| Protective function   |                          |    |  | System and cable protection |
| Standard/Approval   |                          |    |  | IEC                         |
| Installation type   |                          |    |  | Fixed                       |
| Release system  |                          |    |  | Thermomagnetic release      |
| Construction size   |                          |    |  | NZM1                        |
| Number of poles   |                          |    |  | 3 pole                      |
| Standard equipment  |                          |    |  | Box terminal                |
| <b>Switching capacity</b>   |                          |    |  |                             |
| 400/415 V 50 Hz   | $I_{cu}$                 | kA |  | 36                          |
| <b>Rated current = rated uninterrupted current</b>                                  |                          |    |  |                             |
| Rated current = rated uninterrupted current   | $I_n = I_u$              | A  |  | 63                          |
| <b>Setting range</b>  |                          |    |  |                             |
| Overload trip   |                          |    |  |                             |
|  | $I_r$                    | A  |  | 50 - 63                     |
| Short-circuit releases  |                          |    |  |                             |
|  |                          |    |  |                             |
| Non-delayed   | $I_i = I_n \times \dots$ |    |  | 6 - 10                      |
|  |                          |    |  |                             |
| Short-circuit releases  | $I_{rm}$                 | A  |  | 380 - 630                   |
|  |                          |    |  |                             |

## Technical data

|   |  |      |  |  |
|---|--|------|--|--|
| <b>General</b>  |  |      |  |  |
| 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  |
| 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    | 63    |
| Rated surge voltage invariability           | $U_{imp}$   |      |       |
| Main contacts                               |             | V    | 6000  |
| Auxiliary contacts                          |             | V    | 6000  |
| Rated operational voltage                   | $U_e$       | V AC | 690   |
| Overvoltage category/pollution degree       |             |      | III/3 |
| Rated insulation voltage                    | $U_i$       | V    | 690   |
| Use in unearthed supply systems             |             | V    | ≤ 690 |

### Switching capacity

|   |            |       |   |
|---|------------|-------|---|
| Rated short-circuit making capacity   | $I_{cm}$   |       |   |
| 240 V   | $I_{cm}$   | kA    | 121   |
| 400/415 V   | $I_{cm}$   | kA    | 76  |
| 440 V 50/60 Hz  | $I_{cm}$   | kA    | 63  |
| 525 V 50/60 Hz  | $I_{cm}$   | kA    | 24  |
| 690 V 50/60 H   | $I_c$      | kA    | 14  |
| 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    | 55  |
| 400/415 V 50/60 Hz  | $I_{cu}$   | kA    | 36  |
| 440 V 50/60 Hz  | $I_{cu}$   | kA    | 30  |
| 525 V 50/60 Hz  | $I_{cu}$   | kA    | 12  |
| 690 V 50/60 Hz  | $I_{cu}$   | kA    | 8   |
| $I_{cs}$ to IEC/EN 60947 test cycle O-t-CO-t-CO                             | $I_{cs}$   | kA    |   |
| 240 V 50/60 Hz  | $I_{cs}$   | kA    | 55  |
| 400/415 V 50/60 Hz  | $I_{cs}$   | kA    | 36  |
| 440 V 50/60 Hz  | $I_{cs}$   | kA    | 22.5  |
| 525 V 50/60 Hz  | $I_{cs}$   | kA    | 6   |
| 690 V 50/60 Hz  | $I_{cs}$   | kA    | 6   |
|   |            |       | 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-1  |            |       |   |
| 400 V 50/60 Hz  | Operations |       | 10000   |
| 415 V 50/60 Hz  | Operations |       | 10000   |
| 690 V 50/60 Hz  | Operations |       | 5000  |
| Max. operating frequency  |            | Ops/h | 120   |

|   |      |                 |  |
|---|------|-----------------|--|
| Total break time at short-circuit                         |      | ms              | < 10   |
| <b>Terminal capacity</b>                                  |      |                 |  |
| Standard equipment  |      |                 | Box terminal   |
| Optional accessories                                      |      |                 | Screw connection<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 (10 - 70) <sup>3)</sup><br>2 x (6-25)  |
|   |      |                 | <sup>3)</sup> Up to 95 mm <sup>2</sup> can be connected depending on the cable manufacturer. |
| Tunnel terminal   |      |                 |  |
| Solid   |      | mm <sup>2</sup> | 1 x 16   |
| Stranded  |      |                 |  |
| 1-hole  |      | mm <sup>2</sup> | 1 x (25 - 95)  |
| 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 (10 - 70) <sup>3)</sup><br>2 x 25  |
|   |      |                 | <sup>3)</sup> Up to 95 mm <sup>2</sup> can be connected depending on the cable manufacturer. |
| Al circular conductor                                     |      |                 |  |
| Tunnel terminal   |      |                 |  |
| Solid   |      | mm <sup>2</sup> | 1 x 16   |
| Stranded  |      |                 |  |
| Stranded  |      | mm <sup>2</sup> | 1 x (25 - 95)  |
| 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 - 35)<br>2 x (25 - 35)   |
| Cu strip (number of segments x width x segment thickness) |      |                 |  |
| Box terminal  |      |                 |  |
|   | min. | mm              | 2 x 9 x 0.8  |
|   | max. | mm              | 9 x 9 x 0.8  |
| Copper busbar (width x thickness)                         | mm   |                 |  |
| Bolt terminal and rear-side connection                    |      |                 |  |
| Screw connection  |      |                 | M6   |
| Direct on the switch                                      |      |                 |  |
|   | min. | mm              | 12 x 5   |
|   | max. | mm              | 16 x 5   |
| 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 <sub>n</sub>   | A  | 63   |
| Equipment heat dissipation, current-dependent            | P <sub>vid</sub> | W  | 14.17                                      |
| 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                              |                  |    | 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.                         |

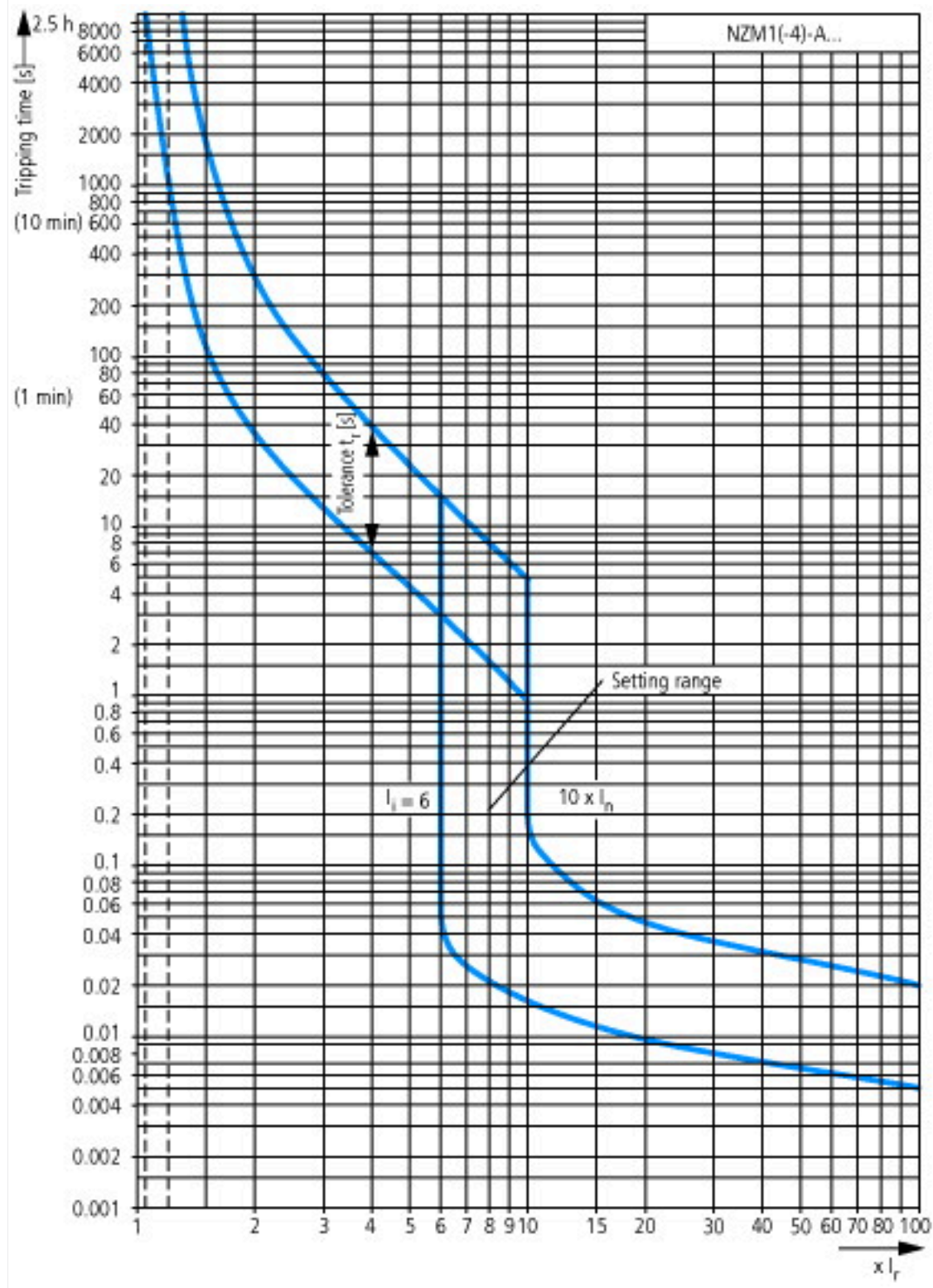
## Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / 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 (ec1@ss10.0.1-27-37-04-09 [AJZ716013])

|   |    |  |
|---|----|--|
| Rated permanent current I <sub>u</sub>                                | A  | 63                                       |
| Rated voltage   | V  | 690 - 690                                |
| Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, 50 Hz | kA | 36                                       |
| Overload release current setting                                      | A  | 50 - 63                                  |
| Adjustment range short-term delayed short-circuit release             | A  | 0 - 0                                    |
| Adjustment range undelayed short-circuit release                      | A  | 380 - 630                                |
| Integrated earth fault protection                                     |    | No                                       |
| Type of electrical connection of main circuit                         |    | Frame clamp                              |
| Device construction   |    | Built-in device fixed built-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



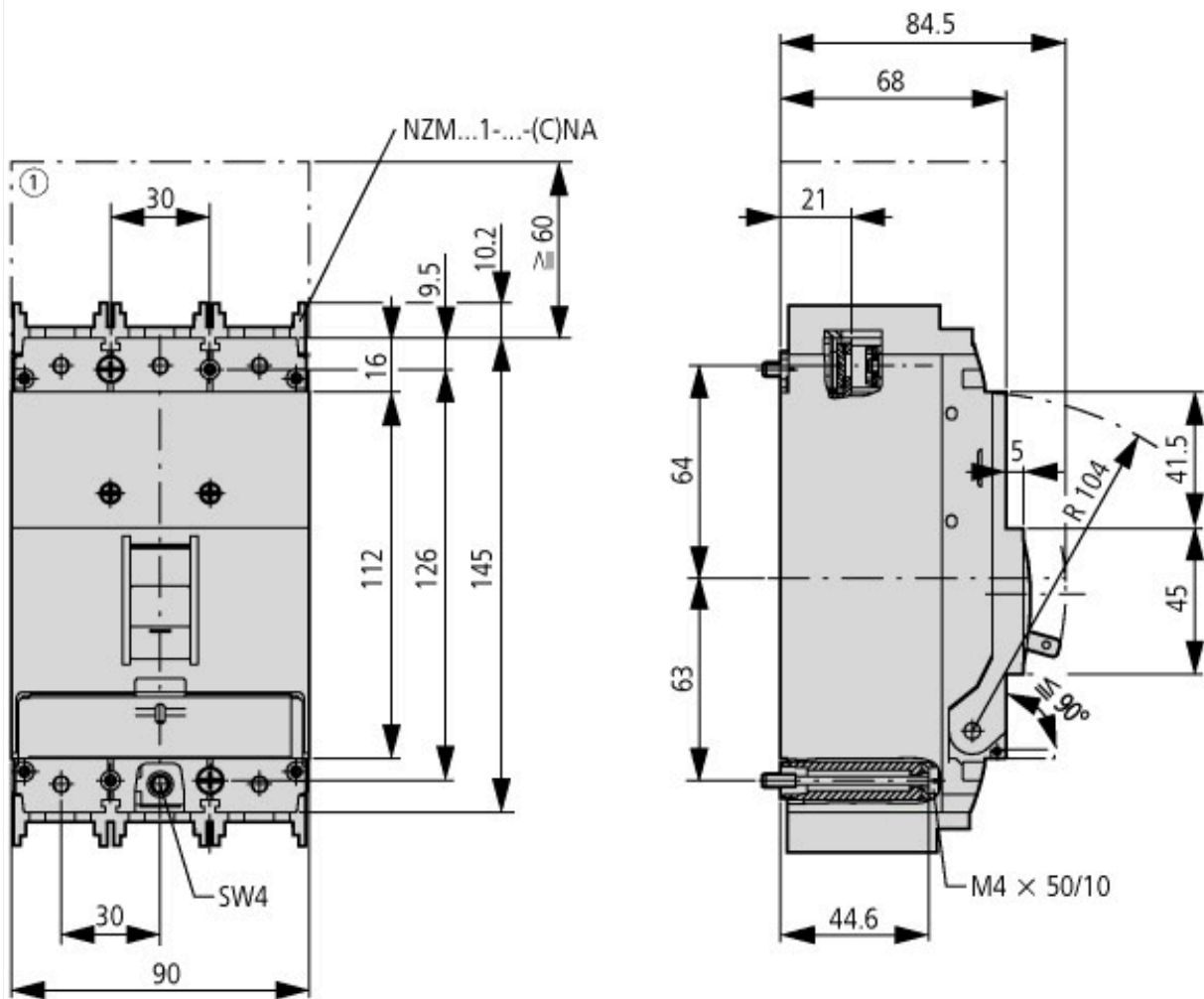


Let-through current



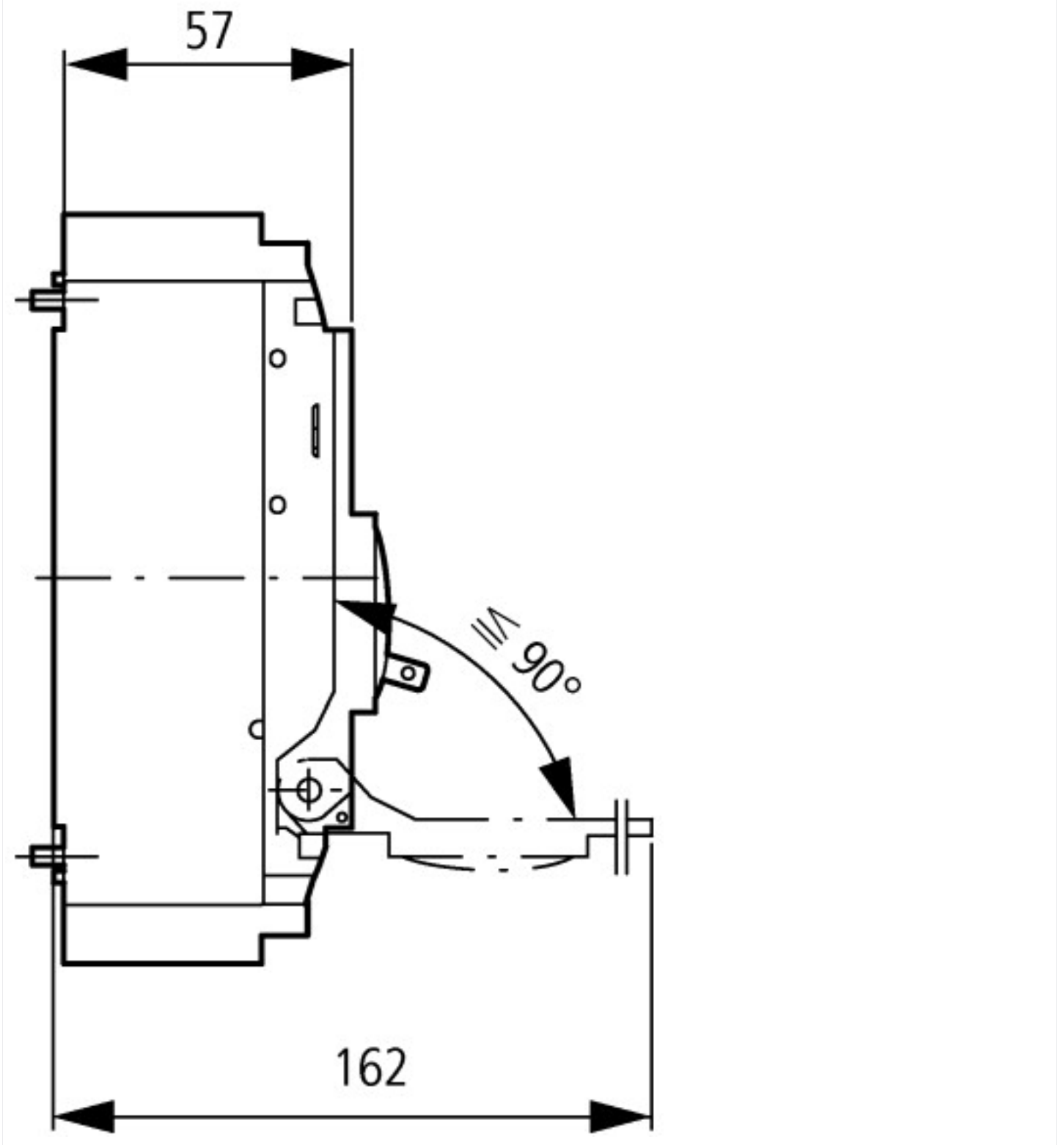
Let-through energy

## Dimensions



① Blow out area, 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/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm">http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm</a> |
| additional technical information for NZM power switch | <a href="https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf">https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_technic_de_en.pdf</a>   |