



**Circuit-breaker, 3p, 63A, plug-in module**

**Part no.**

**NZMN1-S63-SVE**

**Catalog No.**

**112770**

Similar to illustration

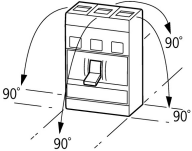
## Delivery program

|                                                         |                          |    |                                                                                                                                                                                                                                        |
|---------------------------------------------------------|--------------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product range                                           |                          |    | Circuit-breaker                                                                                                                                                                                                                        |
| Protective function                                     |                          |    | Short-circuit protection                                                                                                                                                                                                               |
| Standard/Approval                                       |                          |    | IEC                                                                                                                                                                                                                                    |
| Installation type                                       |                          |    | Plug-in units                                                                                                                                                                                                                          |
| Release system                                          |                          |    | Thermomagnetic release                                                                                                                                                                                                                 |
| Construction size                                       |                          |    | NZM1                                                                                                                                                                                                                                   |
| 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                                      |                          |    | Box terminal                                                                                                                                                                                                                           |
| Rated current = rated uninterrupted current             | $I_n = I_u$              | A  | 63                                                                                                                                                                                                                                     |
| <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 | 30                                                                                                                                                                                                                                     |
| <b>Rated operational current AC-3 at 400 V 50/60 Hz</b> |                          |    |                                                                                                                                                                                                                                        |
| 400 V                                                   | $I_e$                    | A  | 55                                                                                                                                                                                                                                     |

## 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                                                                            |
| Mounting position                                                                     |  |      | Vertical and 90° in all directions                                             |

|                                        |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                        |  |  |  <p>With XFI earth-fault release:<br/> - NZM1, N1, NZM2, N2: vertical and 90° in all directions<br/> with plug-in unit<br/> - NZM1, N1, NZM2, N2: vertical, 90° right/left<br/> with withdrawable unit:<br/> - NZM3, N3: vertical, 90° right/left<br/> - NZM4, N4: vertical<br/> with remote operator:<br/> - NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions</p> |
| 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 | 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 | 40                                                                                                                                              |
| 690 V 50/60 H                                                               | $I_c$      | kA | 17                                                                                                                                              |
| 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 | 20                                                                                                                                              |
| 690 V 50/60 Hz                                                              | $I_{cu}$   | kA | 10                                                                                                                                              |
| $I_{cs}$ 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 | 10                                                                                                                                              |
| 690 V 50/60 Hz                                                              | $I_{cs}$   | kA | 7.5                                                                                                                                             |
|                                                                             |            |    | 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 |    | 7500                                                                                                                                            |
| AC--3                                                                       |            |    |                                                                                                                                                 |

|                                                           |            |                 |                                                                                              |
|-----------------------------------------------------------|------------|-----------------|----------------------------------------------------------------------------------------------|
| 400 V 50/60 Hz                                            | Operations |                 | 7500                                                                                         |
| 415 V 50/60 Hz                                            | Operations |                 | 7500                                                                                         |
| 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                                                                                 |
| Accessories required                                      |            |                 | NZM1-XSVS                                                                                    |
| 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

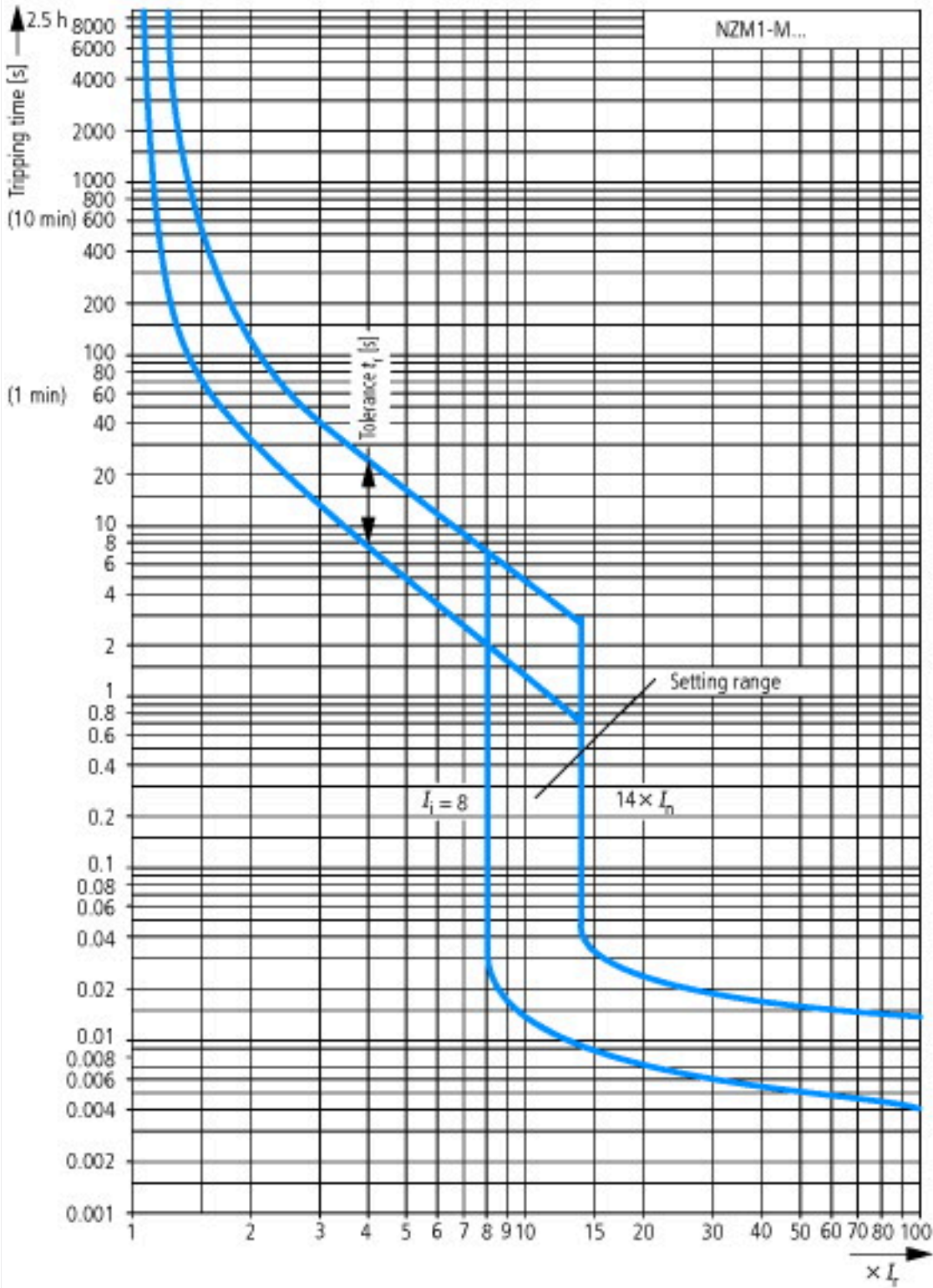
|                                                          |                  |   |       |
|----------------------------------------------------------|------------------|---|-------|
| Technical data for design verification                   |                  |   |       |
| Rated operational current for specified heat dissipation | I <sub>n</sub>   | A | 63    |
| Equipment heat dissipation, current-dependent            | P <sub>vid</sub> | W | 14.17 |

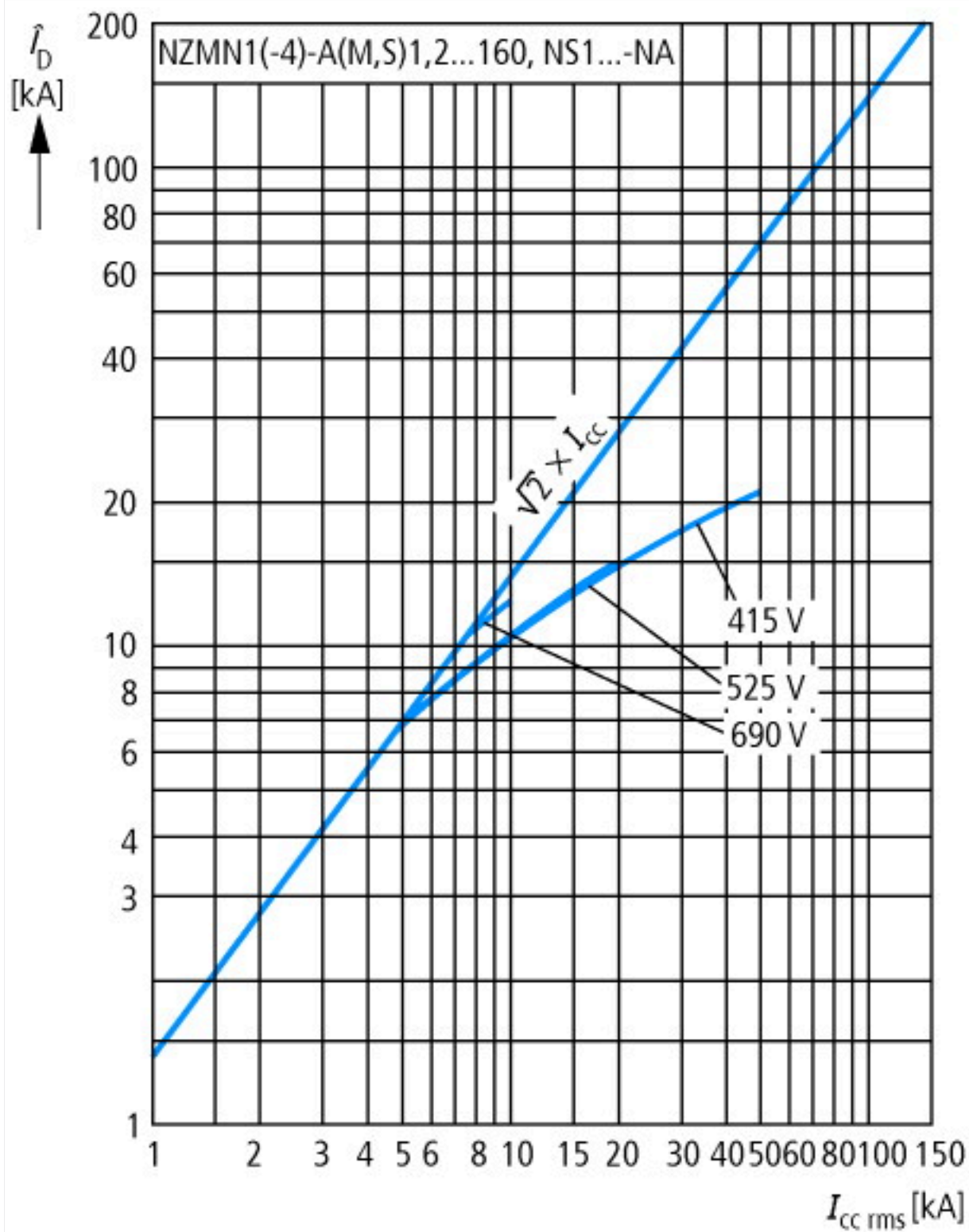
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|------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------------------------|
| 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.                         |

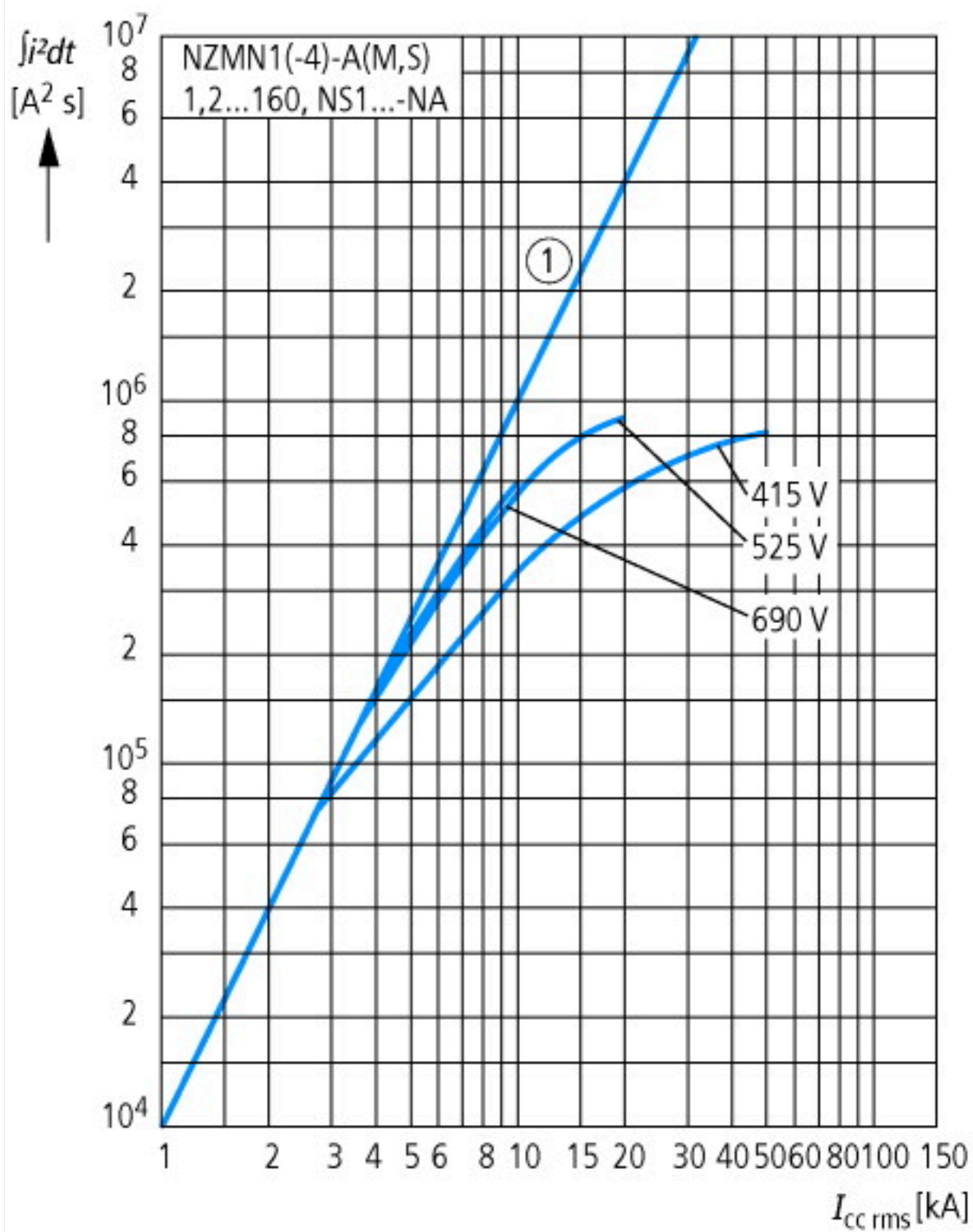
## Technical data ETIM 7.0

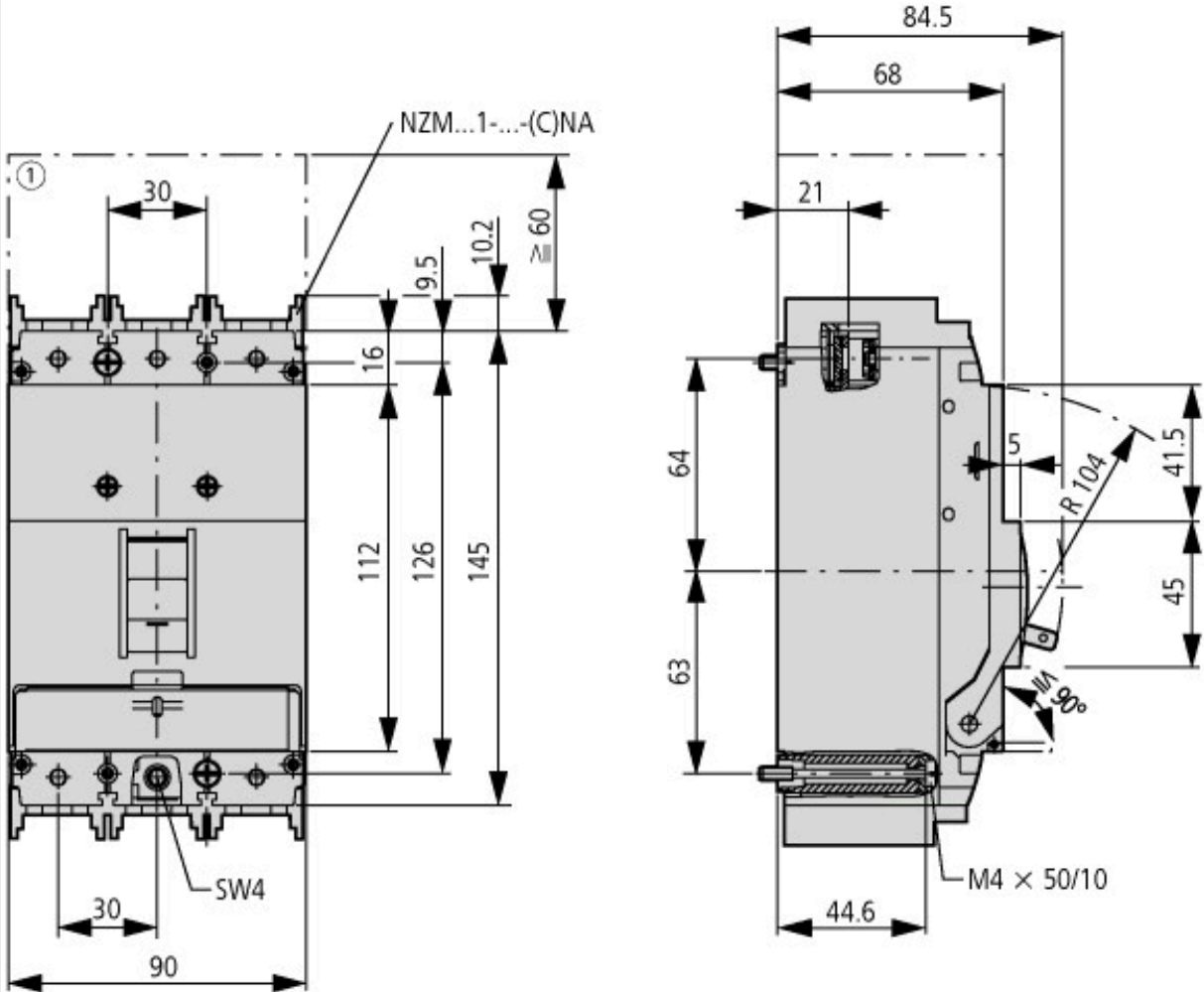
|                                                                                                                                                                                                       |    |                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------|
| 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 Iu                                                                                                                                                                            | A  | 63                                |
| Rated operation power at AC-3, 230 V                                                                                                                                                                  | kW | 18.5                              |
| Rated operation power at AC-3, 400 V                                                                                                                                                                  | kW | 30                                |
| Type of electrical connection of main circuit                                                                                                                                                         |    | Other                             |
| 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 Icu at 400 V, AC                                                                                                                                                | kA | 50                                |
| Degree of protection (IP)                                                                                                                                                                             |    | IP20                              |
| Height                                                                                                                                                                                                | mm | 201                               |
| Width                                                                                                                                                                                                 | mm | 95                                |
| Depth                                                                                                                                                                                                 | mm | 90                                |

Characteristics



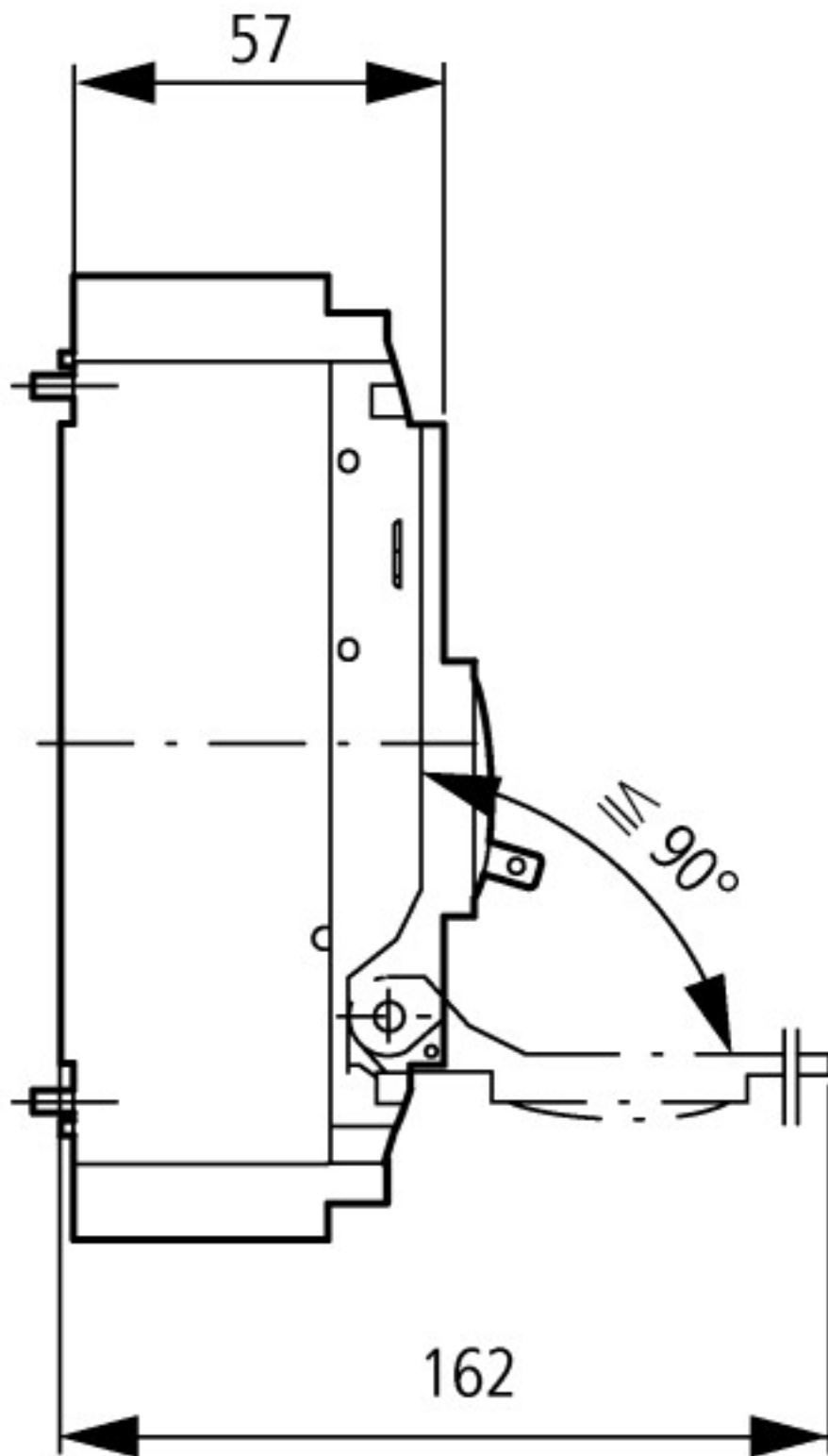






① Blow out area, minimum clearance to adjacent parts





## Additional product information (links)

### IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnecter

IL01203004Z (AWA1230-1913) Circuit-breaker, Switch-Disconnecter [https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL01203004Z2015\\_11.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL01203004Z2015_11.pdf)

### IL01219023Z (AWA1230-2052) Plug-in adapter

IL01219023Z (AWA1230-2052) Plug-in adapter [https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL01219023Z2016\\_02.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL01219023Z2016_02.pdf)

Temperature dependency, Derating <http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.172>

CurveSelect characteristics program <http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/CharacteristicsProgram/index.htm>

Eaton configurator <http://www.eaton.eu/DE/Europe/Electrical/CustomerSupport/ConfigurationTools/ConfiguratorCircuitBreaker/index.htm>

additional technical information for NZM power switch [https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm\\_techinc\\_de\\_en.pdf](https://es-assets.eaton.com/DOCUMENTATION/PDF/nzm_techinc_de_en.pdf)