



## Circuit-breaker, 3p, 25A

Part no. **NZMH2-M25**  
 Article no. **281300**

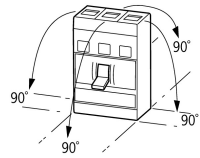
Similar to illustration

## Delivery program

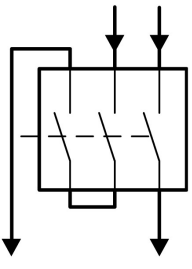
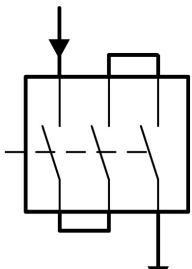
|  |                          |    |  |   |
|--|--------------------------|----|--|---|
| Product range                                  |                          |    |  | Circuit-breaker   |
| Protective function                            |                          |    |  | Motor protection  |
|  |                          |    |  |   |
| Standard/Approval                              |                          |    |  | IEC   |
| Installation type                              |                          |    |  | Fixed   |
| Release system                                 |                          |    |  | Thermomagnetic release  |
| Construction size                              |                          |    |  | NZM2  |
| Description                                    |                          |    |  | Tripping class 10 A<br>IEC/EN 60947-4-1, IEC/EN 60947-2<br>The circuit-breaker fulfills all requirements for AC-3 switching category. |
| Number of poles                                |                          |    |  | 3 pole  |
| Standard equipment                             |                          |    |  | Screw connection  |
| <b>Switching capacity</b>                      |                          |    |  |   |
| 400/415 V 50 Hz                                | $I_{cu}$                 | kA |  | 150   |
| Rated current = rated uninterrupted current    | $I_n = I_u$              | A  |  | 25  |
| <b>Setting range</b>                           |                          |    |  |   |
| Overload trip                                  |                          |    |  |   |
|  | $I_r$                    | A  |  | 20 - 25   |
| Short-circuit releases                         |                          |    |  |   |
|  |                          |    |  |   |
| Non-delayed                                    | $I_i = I_n \times \dots$ |    |  | 350 A fixed   |
|  |                          |    |  |   |
| <b>Motor rating AC-3 50/60 Hz</b>              |                          |    |  |   |
| 380 V 400 V                                    | P                        | kW |  | 11  |
| <b>Motor rating AC-3 50/60 Hz</b>              |                          |    |  |   |
| 400 V  | P                        | kW |  | 11  |
| <b>Rated operational current AC-3 50/60 Hz</b> |                          |    |  |   |
| 400 V  | $I_e$                    | A  |  | 21.7  |

## 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   |
| Weight  |  | kg   | 2.345   |
| Mounting position   |  |      | <p>Vertical and 90° in all directions</p>  <p>With residual-current release XFI:<br/> - NZM1, N1, NZM2, N2: vertical and 90° in all directions<br/> with plug-in adapter elements<br/> - NZM1, N1, NZM2, N2: vertical, 90° right/left<br/> with withdrawable unit:<br/> - NZM3, N3: vertical, 90 ° 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)  |  |      | Weight<br>Temperature dependency, Derating<br>Effective power loss  |

### Circuit-breakers

|   |             |      |  |
|---|-------------|------|--|
| Rated current = rated uninterrupted current | $I_n = I_u$ | A    | 25   |
| Rated surge voltage invariability           | $U_{imp}$   |      |  |
| Main contacts                               |             | V    | 8000   |
| Auxiliary contacts                          |             | V    | 6000   |
| Rated operational voltage                   | $U_e$       | V AC | 690  |
| Rated operational voltage                   | $U_e$       | V DC | 750  |
|   |             |      | <p>Details apply for 3 pole system protection circuit-breaker with thermomagnetic release NZMN(H)1(2)(3)-A... to 500 A.</p> <p>For rated operating voltage switching via 3 contacts:</p> <p>DC correction factor for instantaneous release response value: NZM1: 1.25, NZM2: 1.35, NZM3: 1.45</p> <p>Set value for <math>I_i</math> at DC = set value <math>I_i</math> AC/correction factor DC</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>Switching of one pole via two series contacts</b></p>  </div> <div style="text-align: center;"> <p><b>Switching of one pole via three series contacts</b></p>  </div> </div> |
| Overvoltage category/pollution degree       |             |      | III/3  |
| Rated insulation voltage                    | $U_i$       | V    | 1000   |
| Use in unearthed supply systems             |             | V    | $\leq$ 690   |

### Switching capacity

|                                     |          |    |     |
|-------------------------------------|----------|----|-----|
| Rated short-circuit making capacity | $I_{cm}$ |    |     |
| 240 V                               | $I_{cm}$ | kA | 330 |
| 400/415 V                           | $I_{cm}$ | kA | 330 |
| 440 V 50/60 Hz                      | $I_{cm}$ | kA | 286 |

|   |                 |       |   |
|---|-----------------|-------|---|
| 525 V 50/60 Hz  | I <sub>cm</sub> | kA    | 105   |
| 690 V 50/60 H   | I <sub>c</sub>  | kA    | 40  |
| Rated short-circuit breaking capacity I <sub>cn</sub>                       | I <sub>cn</sub> |       |   |
| I <sub>cu</sub> to IEC/EN 60947 test cycle O-t-CO                           | I <sub>cu</sub> | kA    |   |
| 240 V 50/60 Hz  | I <sub>cu</sub> | kA    | 150   |
| 400/415 V 50/60 Hz  | I <sub>cu</sub> | kA    | 150   |
| 440 V 50/60 Hz  | I <sub>cu</sub> | kA    | 130   |
| 525 V 50/60 Hz  | I <sub>cu</sub> | kA    | 50  |
| 500 V DC  | I <sub>cu</sub> | kA    | 60  |
| 750 V DC  | I <sub>cu</sub> | kA    | 60  |
| I <sub>cs</sub> to IEC/EN 60947 test cycle O-t-CO-t-CO                      | I <sub>cs</sub> | kA    |   |
| 240 V 50/60 Hz  | I <sub>cs</sub> | kA    | 150   |
| 400/415 V 50/60 Hz  | I <sub>cs</sub> | kA    | 150   |
| 440 V 50/60 Hz  | I <sub>cs</sub> | kA    | 130   |
| 525 V 50/60 Hz  | I <sub>cs</sub> | kA    | 37.5  |
| 690 V 50/60 Hz  | I <sub>cs</sub> | kA    | 5   |
| 500 V DC  | I <sub>cs</sub> | kA    | 15  |
| 750 V DC  | I <sub>cs</sub> | kA    | 15  |
|   |                 |       | Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker. |
| Rated short-time withstand current  |                 |       |   |
| t = 0.3 s   | I <sub>cw</sub> | kA    | 1.9   |
| t = 1 s   | I <sub>cw</sub> | kA    | 1.9   |
| Utilization category to IEC/EN 60947-2                                      |                 |       | A   |
| Rated making and breaking capacity  |                 |       |   |
| Rated operational current   | I <sub>e</sub>  | A     |   |
| AC-1  |                 |       |   |
| 380 V 400 V   | I <sub>e</sub>  | A     | 25  |
| 415 V   | I <sub>e</sub>  | A     | 25  |
| 690 V   | I <sub>e</sub>  | A     | 25  |
| AC--3   |                 |       |   |
| 380 V 400 V   | I <sub>e</sub>  | A     | 25  |
| 415 V   | I <sub>e</sub>  | A     | 25  |
| 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 downtime in a 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  |      | mm <sup>2</sup> |   |
| 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 - 185)<br>2 x (25 - 70)   |
| Al conductors, Cu cable                                   |      |                 |   |
| Solid   |      | mm <sup>2</sup> | 1 x 16  |
| Stranded  |      | mm <sup>2</sup> |   |
| Stranded  |      | mm <sup>2</sup> | 1 x (25 - 185) <sup>2)</sup>  |
|   |      |                 | <sup>2)</sup> Up to 240 mm <sup>2</sup> can be connected depending on the cable manufacturer. |
| 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   |
| 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)                         |      |                 |   |
| 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

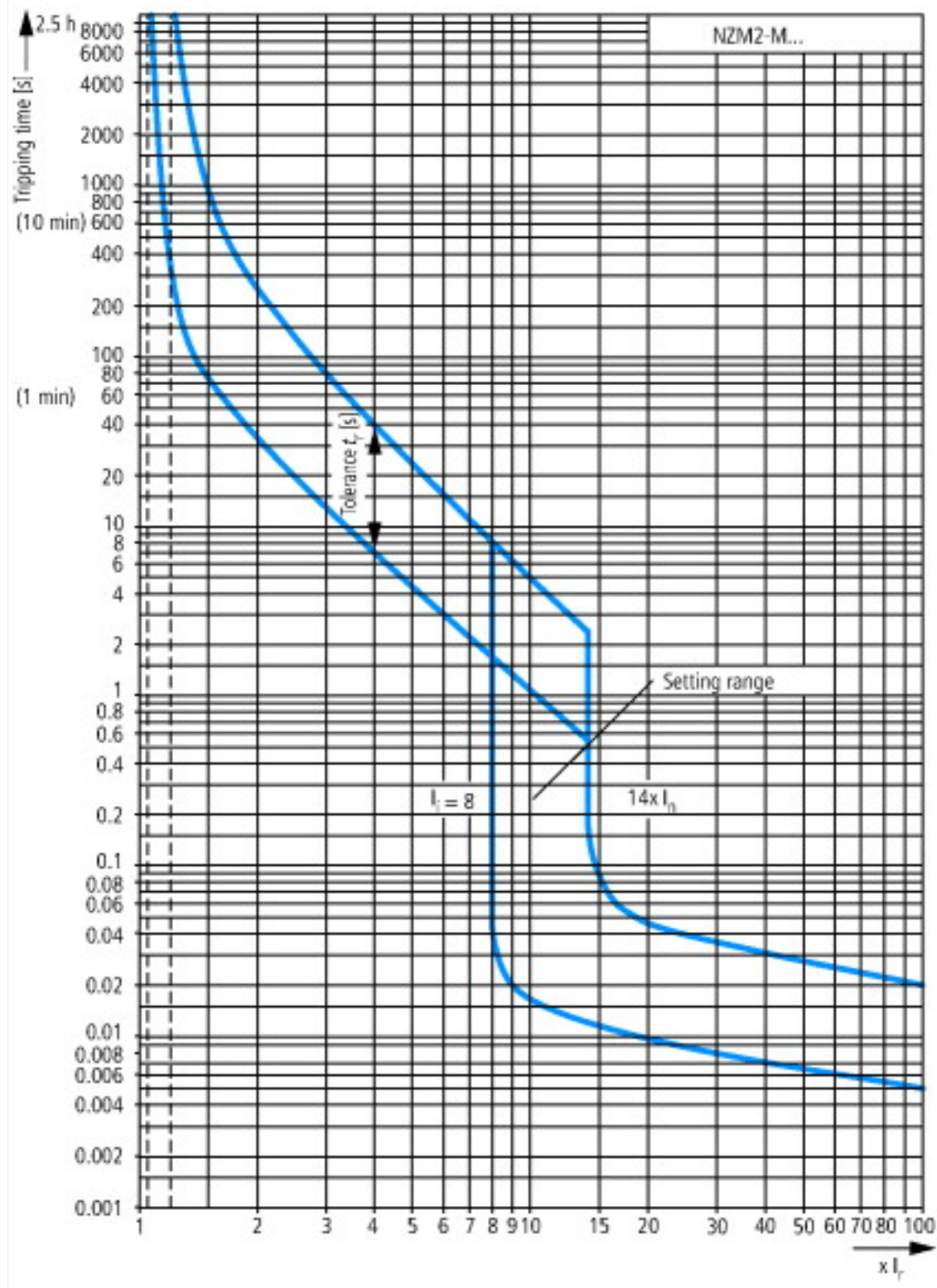
|  |                  |    |  |
|--|------------------|----|--|
| Technical data for design verification   |                  |    |  |
| Rated operational current for specified heat dissipation   | I <sub>n</sub>   | A  | 25   |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub> | W  | 7.97   |
| 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.                         |

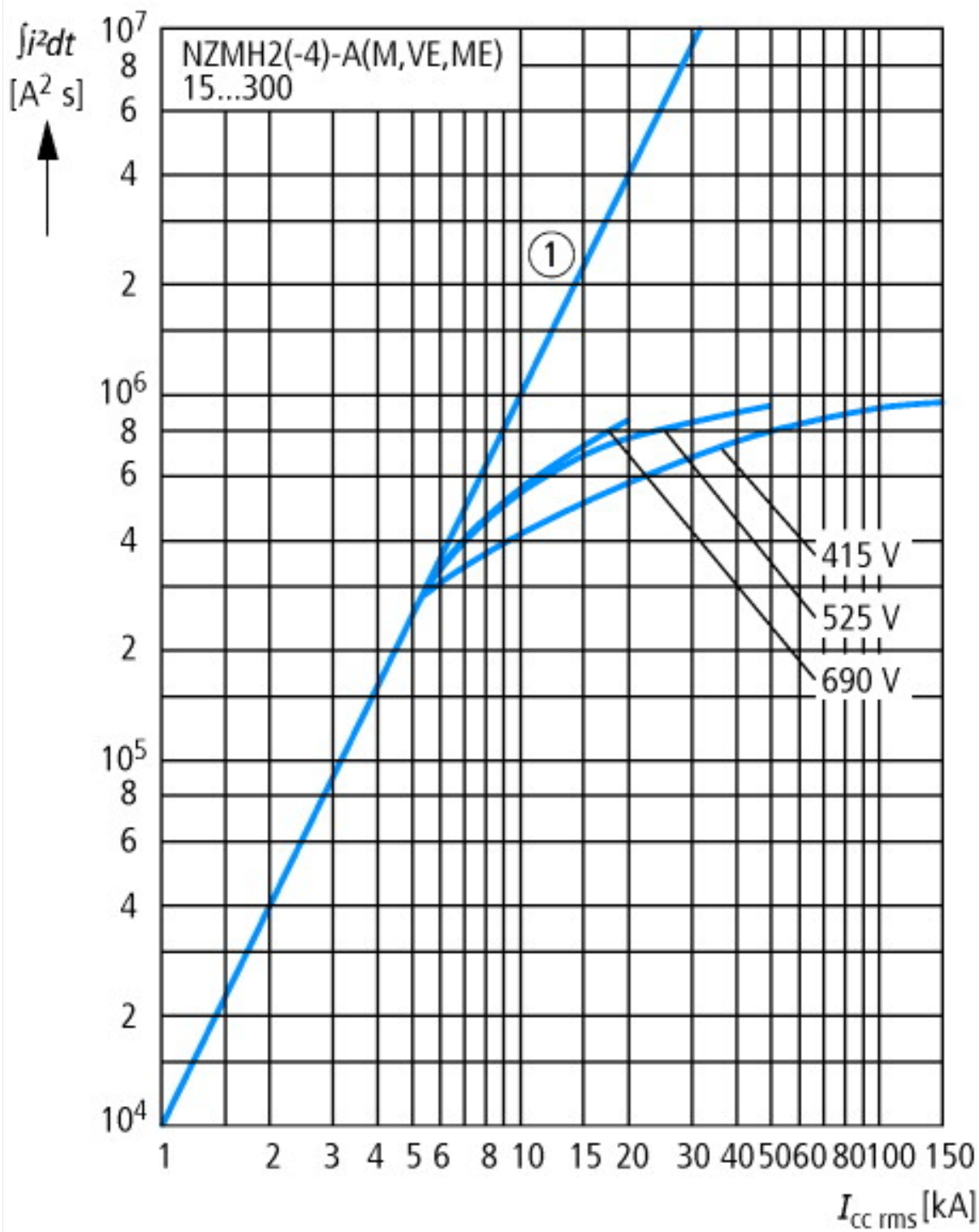
## Technical data ETIM 6.0

|  |    |  |  |
|--|----|--|--|
| 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@ss8.1-27-37-04-01 [AGZ529013]) |    |  |  |
| Overload release current setting   | A  |  | 20 - 25                                  |
| Adjustment range undelayed short-circuit release   | A  |  | 350 - 350                                |
| Thermal protection   |    |  | No                                       |
| Phase failure sensitive  |    |  | No                                       |
| Switch off technique   |    |  | Thermomagnetic                           |
| Rated operating voltage  | V  |  | 690 - 690                                |
| Rated permanent current I <sub>u</sub>   | A  |  | 25                                       |
| Rated operation power at AC-3, 230 V   | kW |  | 5.5                                      |
| Rated operation power at AC-3, 400 V   | kW |  | 11                                       |
| 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 <sub>cu</sub> at 400 V, AC   | kA |  | 150                                      |
| Degree of protection (IP)  |    |  | IP20                                     |
| Height   | mm |  | 184                                      |
| Width  | mm |  | 105                                      |
| Depth  | mm |  | 149                                      |

# Characteristics

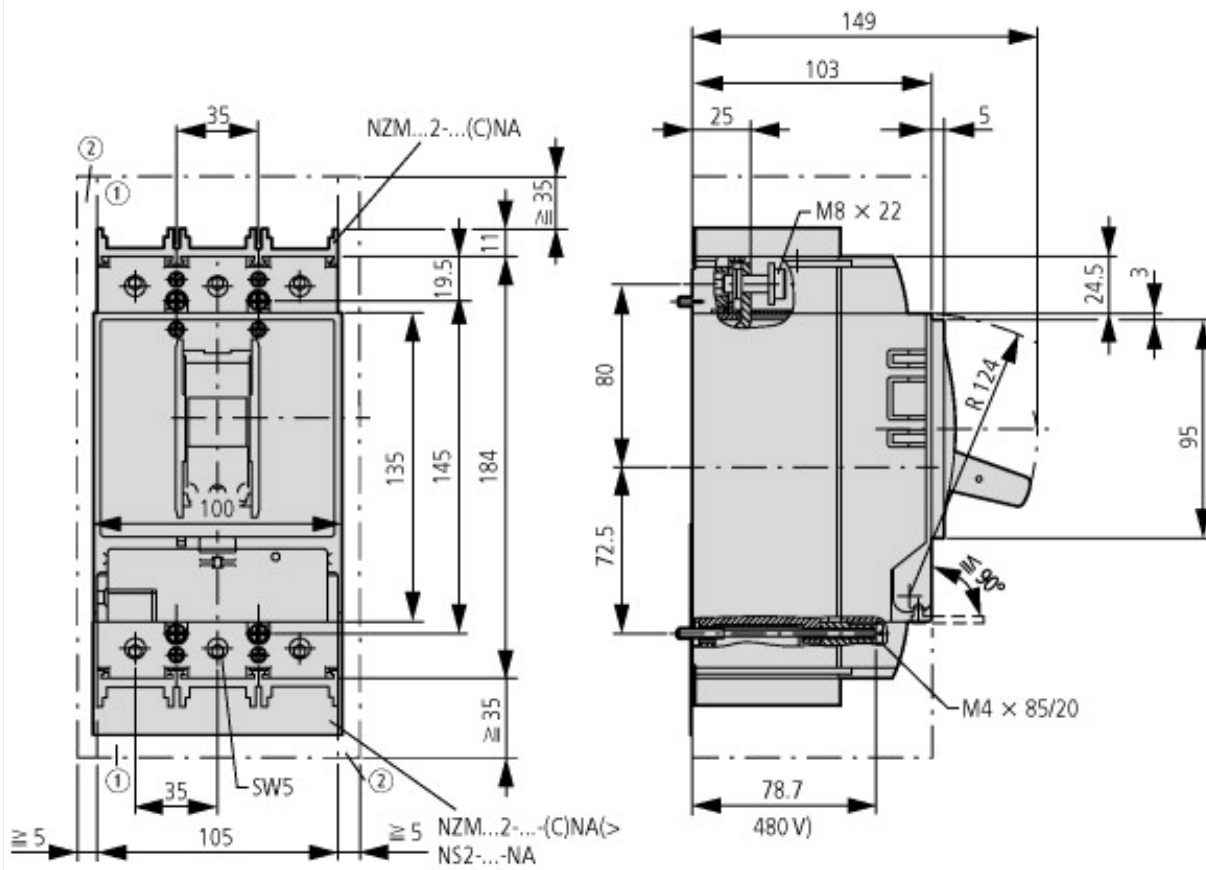








## Dimensions



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



### Additional product information (links)

#### IL01206006Z (AWA1230-1916) Circuit-Breaker, basic unit

IL01206006Z (AWA1230-1916) Circuit-Breaker, basic unit [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL01206006Z2015\\_11.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01206006Z2015_11.pdf)

Weight <http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.171>

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

Effective power loss <http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.174>