






## Circuit-breaker, 3p, 32A, plug-in module

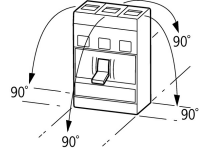
Part no. **NZMH2-A32-SVE**  
 Article no. **113353**

Similar to illustration

## Delivery program

|   |                          |    |  |                             |
|---|--------------------------|----|--|-----------------------------|
| Product range   |                          |    |  | Circuit-breaker             |
| Protective function   |                          |    |  | System and cable protection |
| Standard/Approval   |                          |    |  | IEC                         |
| Installation type   |                          |    |  | Plug-in units               |
| Release system  |                          |    |  | Thermomagnetic release      |
| Construction size   |                          |    |  | NZM2                        |
| Number of poles   |                          |    |  | 3 pole                      |
| Standard equipment  |                          |    |  | Screw connection            |
| <b>Switching capacity</b>   |                          |    |  |                             |
| 400/415 V 50 Hz   | $I_{cu}$                 | kA |  | 150                         |
| <b>Rated current = rated uninterrupted current</b>                                  |                          |    |  |                             |
| Rated current = rated uninterrupted current   | $I_n = I_u$              | A  |  | 32                          |
| <b>Setting range</b>  |                          |    |  |                             |
| Overload trip   |                          |    |  |                             |
|  | $I_r$                    | A  |  | 25 - 32                     |
| Short-circuit releases  |                          |    |  |                             |
|  |                          |    |  |                             |
| Non-delayed   | $I_i = I_n \times \dots$ |    |  | 350 A fixed                 |
|  |                          |    |  |                             |

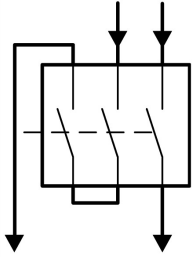
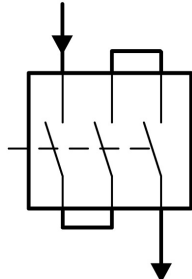

## Technical data

|   |  |      |  |  |
|---|--|------|--|--|
| <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   |  |      |  | Vertical and 90° in all directions   |
|   |  |      |  |  <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:</p> |

- NZM3, N3: vertical, 90 ° 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) |  |  | Weight<br>Temperature dependency, Derating<br>Effective power loss       |

### Circuit-breakers

|   |             |      |   |
|---|-------------|------|---|
| Rated current = rated uninterrupted current   | $I_n = I_u$ | A    | 32  |
| 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>Circuit type: 2 pole, + and -, two sides</b></p>  </div> <div style="text-align: center;"> <p><b>Circuit type: 1 pole, + or -, two sides</b></p>  </div> </div> |             |      |   |
| 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 | 330 |
| 400/415 V                                      | $I_{cm}$ | kA | 330 |
| 440 V 50/60 Hz                                 | $I_{cm}$ | kA | 286 |
| 525 V 50/60 Hz                                 | $I_{cm}$ | kA | 105 |
| 690 V 50/60 Hz                                 | $I_c$    | kA | 40  |
| Rated short-circuit breaking capacity $I_{cn}$ | $I_{cn}$ |    |     |
| $I_{cu}$ to IEC/EN 60947 test cycle 0-t-CO     | $I_{cu}$ | kA |     |
| 240 V 50/60 Hz                                 | $I_{cu}$ | kA | 150 |
| 400/415 V 50/60 Hz                             | $I_{cu}$ | kA | 150 |
| 440 V 50/60 Hz                                 | $I_{cu}$ | kA | 130 |
| 525 V 50/60 Hz                                 | $I_{cu}$ | kA | 50  |
| 690 V 50/60 Hz                                 | $I_{cu}$ | kA | 20  |
| 500 V DC                                       | $I_{cu}$ | kA | 60  |

|   |            |            |   |
|---|------------|------------|---|
| 750 V DC  | $I_{CU}$   | kA         | 60  |
| Ics to IEC/EN 60947 test cycle O-t-CO-t-CO                                  | $I_{CS}$   | kA         |   |
| 240 V 50/60 Hz  | $I_{CS}$   | kA         | 150   |
| 400/415 V 50/60 Hz  | $I_{CS}$   | kA         | 150   |
| 440 V 50/60 Hz  | $I_{CS}$   | kA         | 130   |
| 525 V 50/60 Hz  | $I_{CS}$   | kA         | 37.5  |
| 690 V 50/60 Hz  | $I_{CS}$   | kA         | 5   |
| 500 V DC  | $I_{CS}$   | kA         | 15  |
| 750 V DC  | $I_{CS}$   | 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   | $I_{CW}$   | kA         | 1.9   |
| t = 1 s   | $I_{CW}$   | kA         | 1.9   |
| Utilization category to IEC/EN 60947-2                                      |            |            | A   |
| Rated making and breaking capacity  |            |            |   |
| Rated operational current   |            | $I_e$      | A   |
| AC-1  |            |            |   |
| 380 V 400 V   | $I_e$      | A          | 32  |
| 415 V   | $I_e$      | A          | 32  |
| 690 V   | $I_e$      | A          | 32  |
| AC--3   |            |            |   |
| 380 V 400 V   | $I_e$      | A          | 32  |
| 415 V   | $I_e$      | A          | 32  |
| 660 V 690 V   | $I_e$      | A          | 32  |
| 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                |
| Accessories required                   |  |                 | NZM2-XSVS                       |
| 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 (6 - 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  |

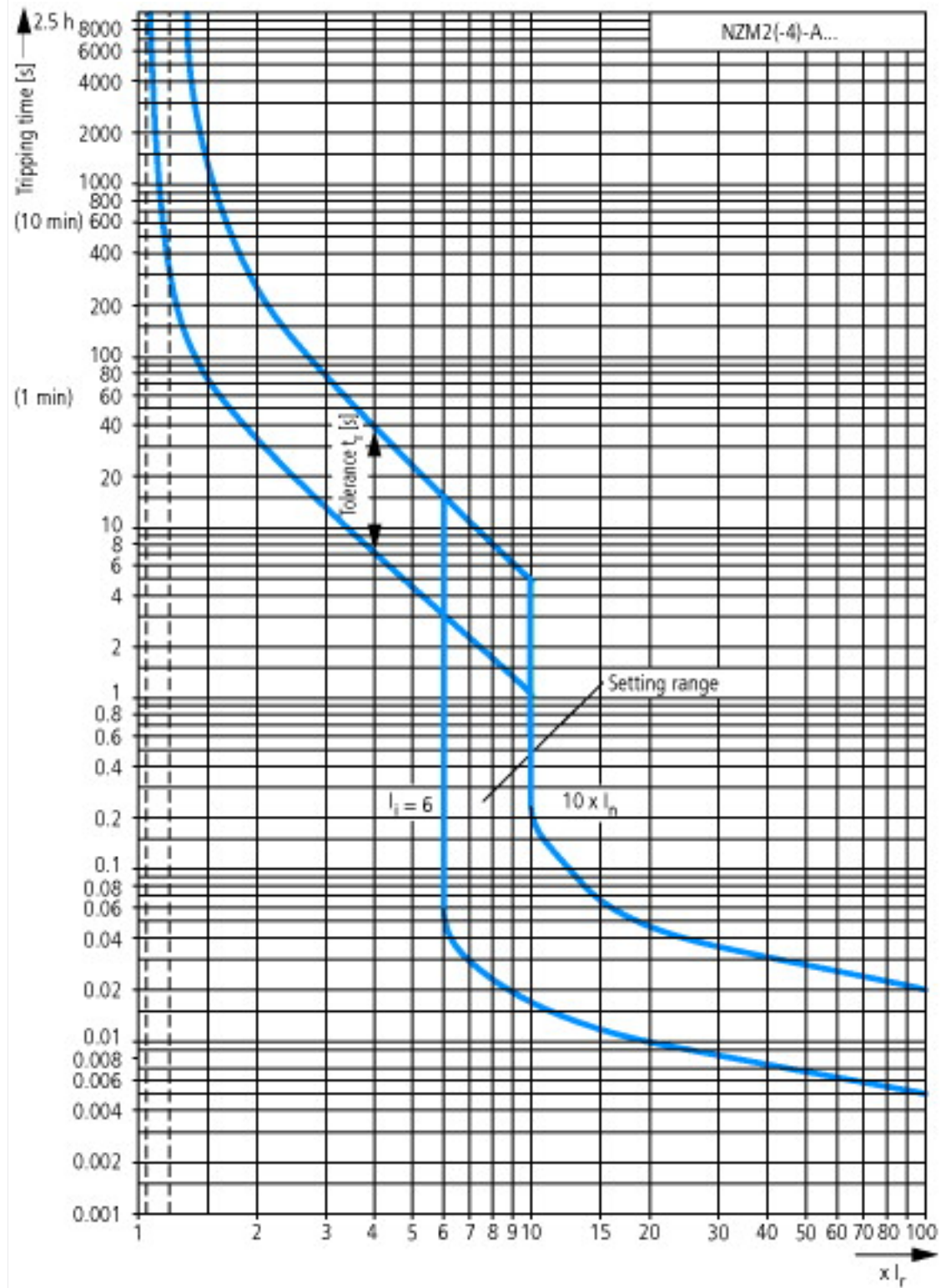
## Design verification as per IEC/EN 61439

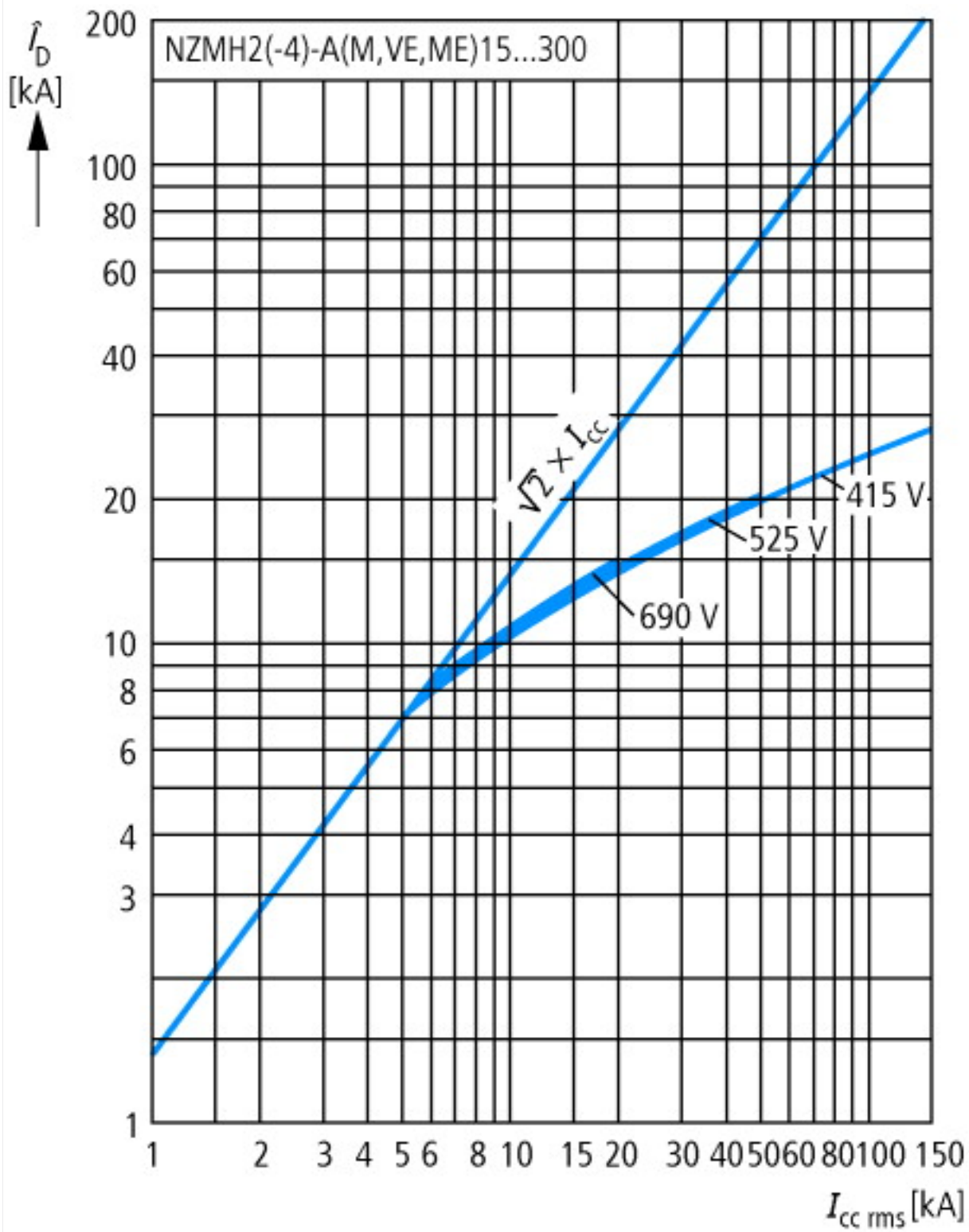
|  |                  |    |  |
|--|------------------|----|--|
| Technical data for design verification   |                  |    |  |
| Rated operational current for specified heat dissipation   | I <sub>n</sub>   | A  | 32   |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub> | W  | 9.65   |
| 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.                         |

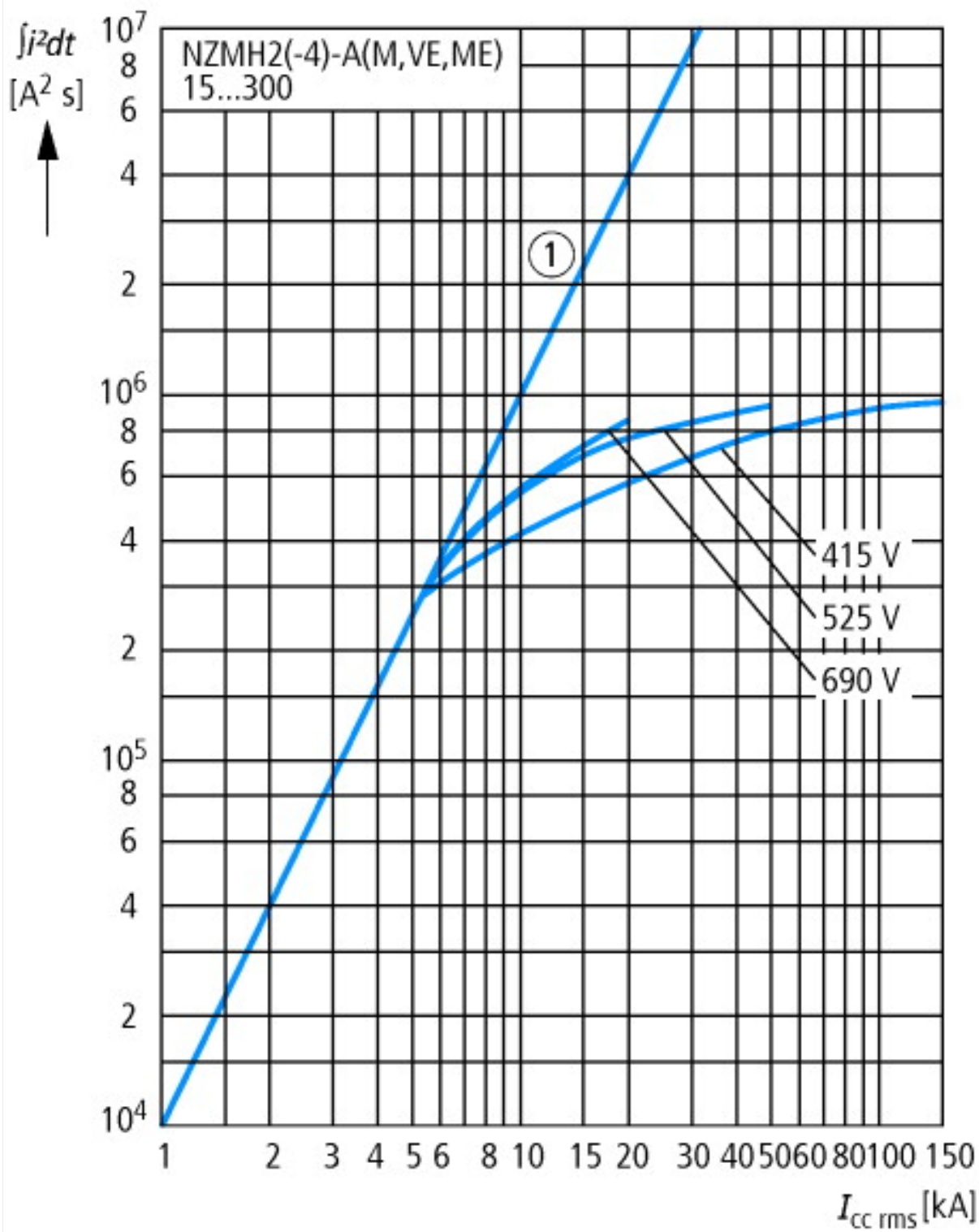
## Technical data ETIM 6.0

|  |    |                                   |
|--|----|-----------------------------------|
| Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation prot. (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 (ecl@ss8.1-27-37-04-09 [AJZ716010]) |    |                                   |
| Rated permanent current I <sub>u</sub>   | A  | 32                                |
| Rated voltage  | V  | 690 - 690                         |
| Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, 50 Hz  | kA | 150                               |
| Overload release current setting   | A  | 25 - 32                           |
| Adjustment range short-term delayed short-circuit release  | A  | 0 - 0                             |
| Adjustment range undelayed short-circuit release   | A  | 350 - 350                         |
| Integrated earth fault protection  |    | No                                |
| Type of electrical connection of main circuit  |    | Screw connection                  |
| Device construction  |    | Built-in device plug-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                                 |
| Switched-off indicator available   |    | 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   |    | Yes                               |
| Degree of protection (IP)  |    | IP20                              |

# Characteristics

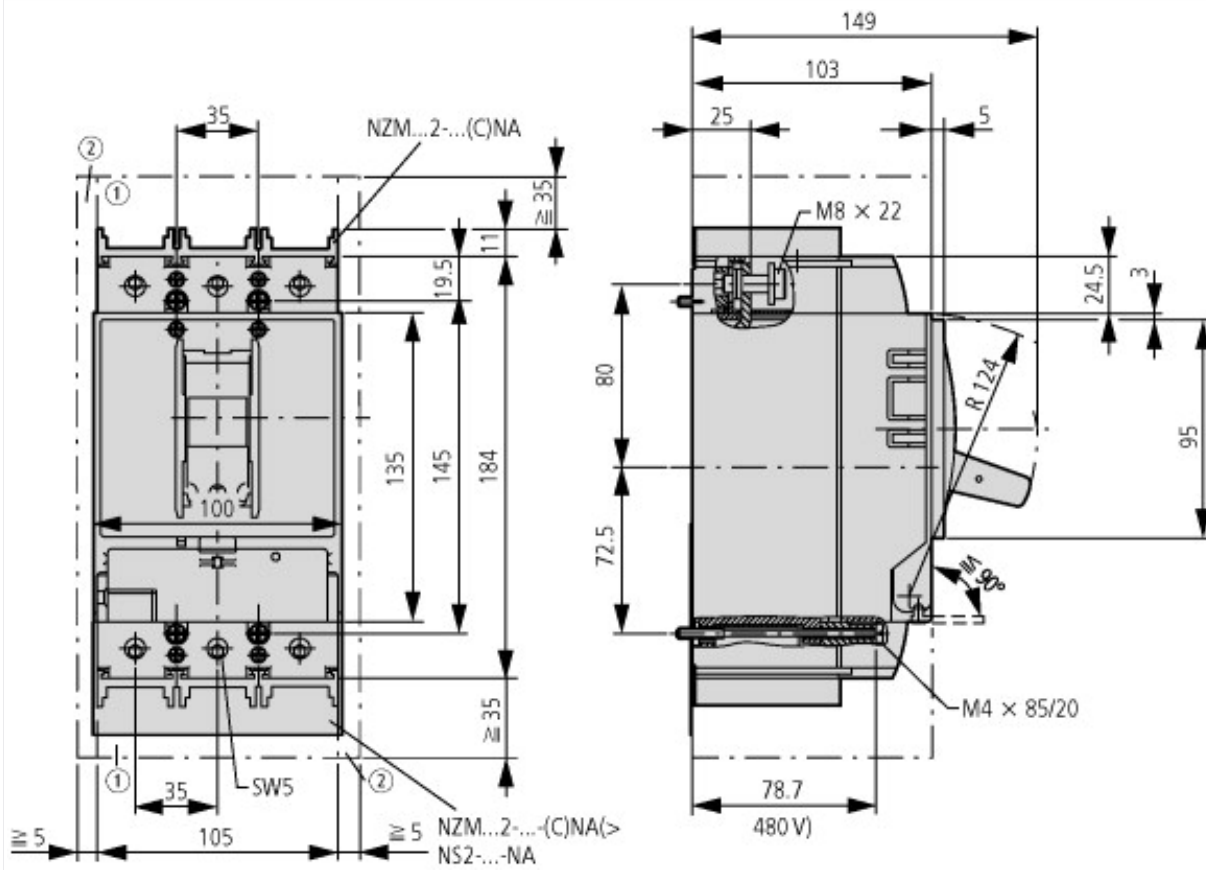




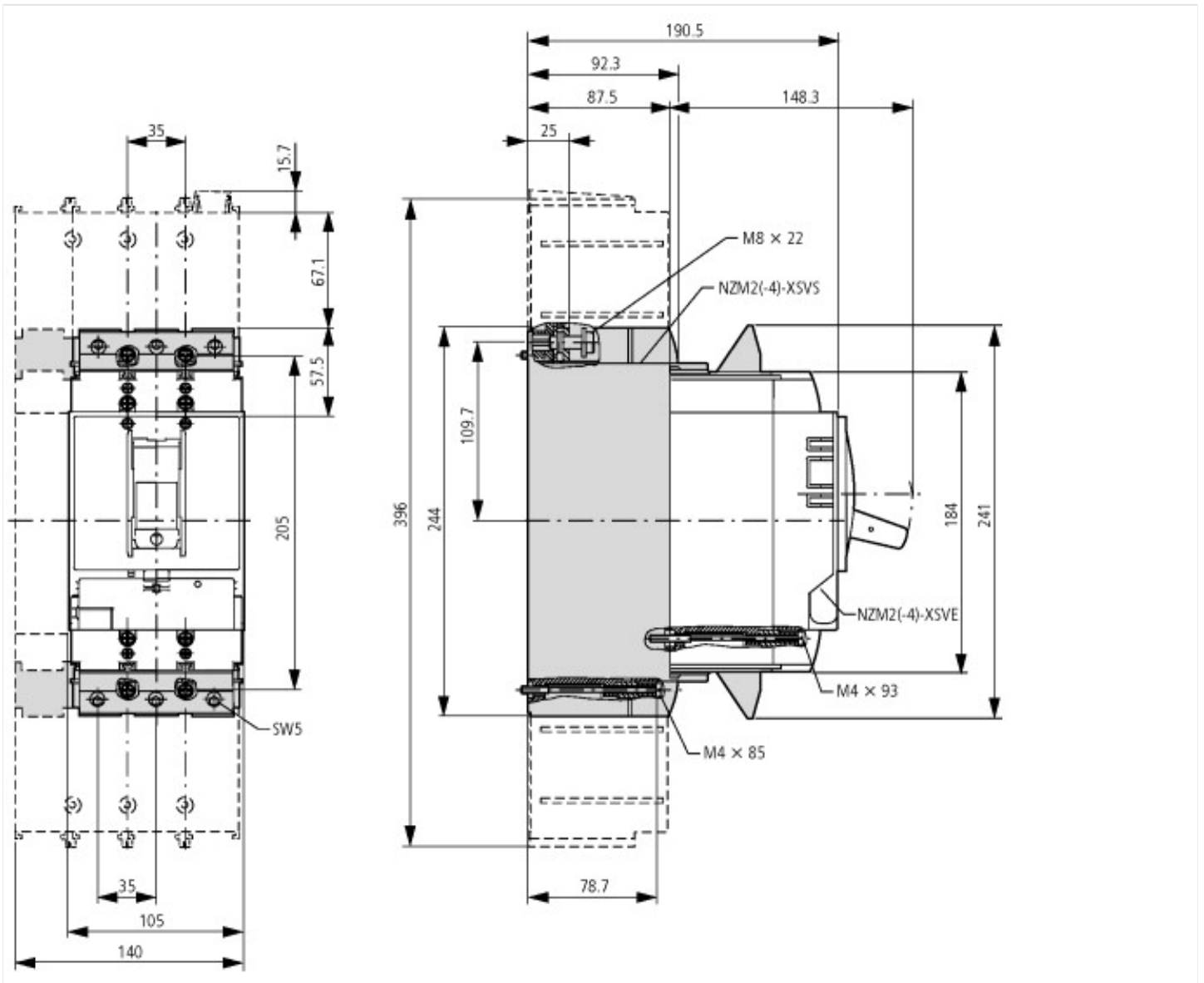




## Dimensions



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



### Additional product information (links)

|                                     |   |
|-------------------------------------|---|
| Weight                              | <a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.171">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.171</a>   |
| 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>   |
| Effective power loss                | <a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.174">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=17.174</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> |