



# Circuit-breaker, 3 p, 100A

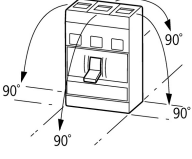
Part no. LZMC1-A100-I  
Article no. 111895

Similar to illustration

## Delivery programme

|                                                    |                          |    |                             |
|----------------------------------------------------|--------------------------|----|-----------------------------|
| Product range                                      |                          |    | Circuit-breaker             |
| Protective function                                |                          |    | System and cable protection |
| Standard/Approval                                  |                          |    | IEC                         |
| Installation type                                  |                          |    | Fixed                       |
| Release system                                     |                          |    | Thermomagnetic release      |
| Construction size                                  |                          |    | LZM1                        |
| Number of poles                                    |                          |    | 3 pole                      |
| Standard equipment                                 |                          |    | Box terminal                |
| <b>Switching capacity</b>                          |                          |    |                             |
| 400/415 V 50/60 Hz                                 | $I_{cu}$                 | kA | 36                          |
| <b>Rated current = rated uninterrupted current</b> |                          |    |                             |
| Rated current = rated uninterrupted current        | $I_n = I_u$              | A  | 100                         |
| <b>Setting range</b>                               |                          |    |                             |
| Overload trip                                      |                          |    |                             |
|                                                    | $I_r$                    | A  | 80 - 100                    |
| Short-circuit releases                             |                          |    |                             |
|                                                    |                          |    |                             |
| Non-delayed                                        | $I_i = I_n \times \dots$ |    | 6 - 10                      |
|                                                    |                          |    |                             |

## Technical data

|                                                                                       |  |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------|--|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General</b>                                                                        |  |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Standards                                                                             |  |      | IEC/EN 60947, VDE 0660                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 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                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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   | 1.05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mounting position                                                                     |  |      | Vertical and 90° in all directions<br><br>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° 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 |

|                              |  |  |                                                                      |
|------------------------------|--|--|----------------------------------------------------------------------|
| Direction of incoming supply |  |  | as required                                                          |
| Degree of protection         |  |  |                                                                      |
| Device                       |  |  | In the area of the HMI devices: IP20 (basic protection type)         |
| Enclosures                   |  |  | with insulating surround: IP40with door coupling rotary handle: IP66 |
| Terminations                 |  |  | Tunnel terminal: IP10<br>Phase isolator and band terminal: IP00      |

## Circuit-breakers

|                                             |             |      |                                                                                       |
|---------------------------------------------|-------------|------|---------------------------------------------------------------------------------------|
| Rated current = rated uninterrupted current | $I_n = I_u$ | A    | 100                                                                                   |
| 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 50/60 Hz                                  | $I_{cm}$   | kA | 121                                                                                                                                             |
| 400/415 V 50/60 Hz                              | $I_{cm}$   | 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 |                                                                                                                                                 |
| 230 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                                                                                                                                               |
| Rated making and breaking capacity              |            |    |                                                                                                                                                 |
| Rated operational current                       | $I_e$      | A  |                                                                                                                                                 |
| AC-1                                            |            |    |                                                                                                                                                 |
| 380 V 400 V                                     | $I_e$      | A  | 160                                                                                                                                             |
| 415 V                                           | $I_e$      | A  | 125                                                                                                                                             |
| 690 V                                           | $I_e$      | A  | 160                                                                                                                                             |
| AC--3                                           |            |    |                                                                                                                                                 |
| 380 V 400 V                                     | $I_e$      | A  | 100                                                                                                                                             |
| 415 V                                           | $I_e$      | A  | 100                                                                                                                                             |
| 660 V 690 V                                     | $I_e$      | A  | 100                                                                                                                                             |
| Lifespan, mechanical                            | 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-2, AC-3                                                                                                           |            |       |                                                                                                                     |
| 415 V 50/60 Hz                                                                                                       | Operations |       | 7500                                                                                                                |
| 690 V 50/60 Hz                                                                                                       | Operations |       | 5000                                                                                                                |
| Max. operating frequency                                                                                             |            | Ops/h | 120                                                                                                                 |
| Current heat losses per pole at I <sub>u</sub> are based on the maximum rated operational current of the frame size. |            | W     | 16.7                                                                                                                |
|                                                                                                                      |            |       | For current heat loss per pole the specification refers to the maximum rated operational current of the frame size. |
| Total downtime in a short-circuit                                                                                    |            | ms    | < 10                                                                                                                |

## Terminal capacity

|                                                           |      |                 |                                                                                                                                                                                                                                                |
|-----------------------------------------------------------|------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard equipment                                        |      |                 | Box terminal                                                                                                                                                                                                                                   |
| Overview                                                  |      |                 | <div>Basic equipment</div> <div>Box terminal</div> <div>Screw connection</div> <div>accessory consideration</div> <div>Box terminals</div> <div>Screw connection</div> <div>Tunnel terminal connection</div> <div>on rear Strip terminal</div> |
| 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 - 70)<br>2 x 25                                                                                                                                                                                                                        |
| Tunnel terminal                                           |      |                 |                                                                                                                                                                                                                                                |
| Solid                                                     |      | mm <sup>2</sup> | 1 x (16 - 95)                                                                                                                                                                                                                                  |
| Stranded                                                  |      | mm <sup>2</sup> |                                                                                                                                                                                                                                                |
| 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 (6 - 16)                                                                                                                                                                                                                  |
| Stranded                                                  |      | mm <sup>2</sup> | 1 x (25 - 70)<br>2 x 25                                                                                                                                                                                                                        |
| 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 - 95)                                                                                                                                                                                                                                  |
| 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                                          |      |                 | M8                                                                                                                                                                                                                                             |
| 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

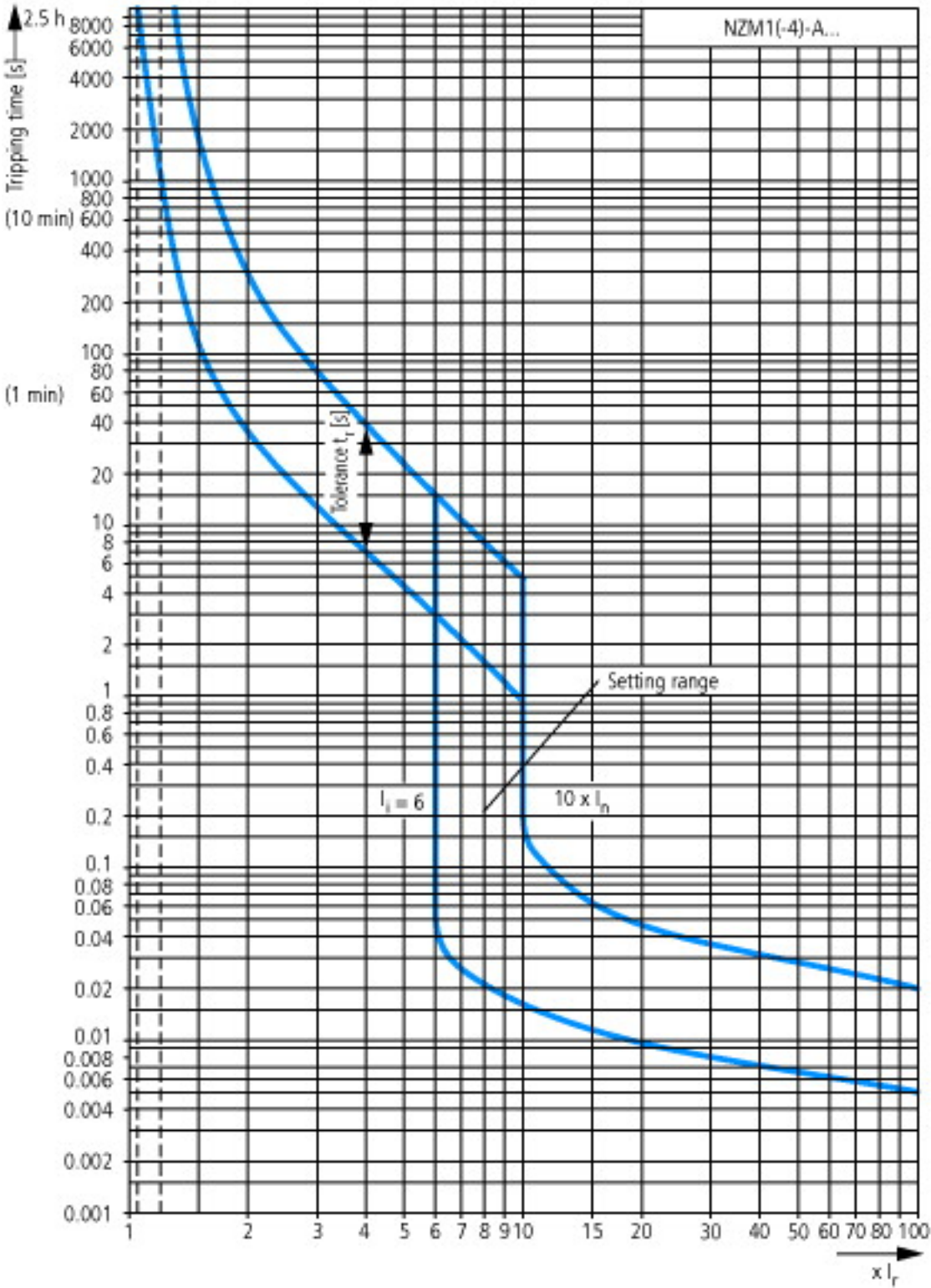
|                                                                                                                        |                  |   |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------|------------------|---|----------------------------------------------------------------------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                  |   |                                                                                                                                  |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>   | A | 100                                                                                                                              |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub> | W | 21.9                                                                                                                             |
| 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.                         |

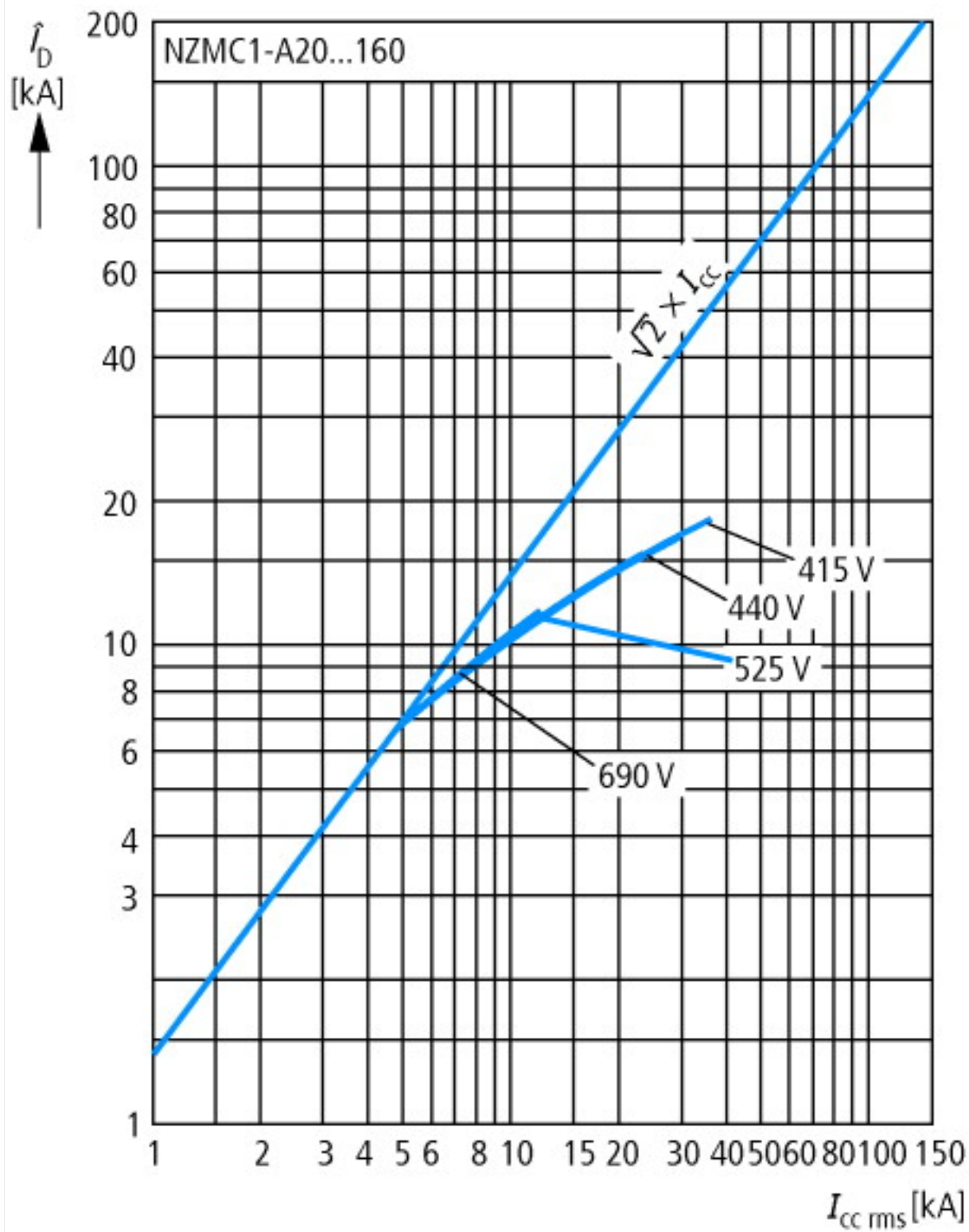
## Technical data ETIM 6.0

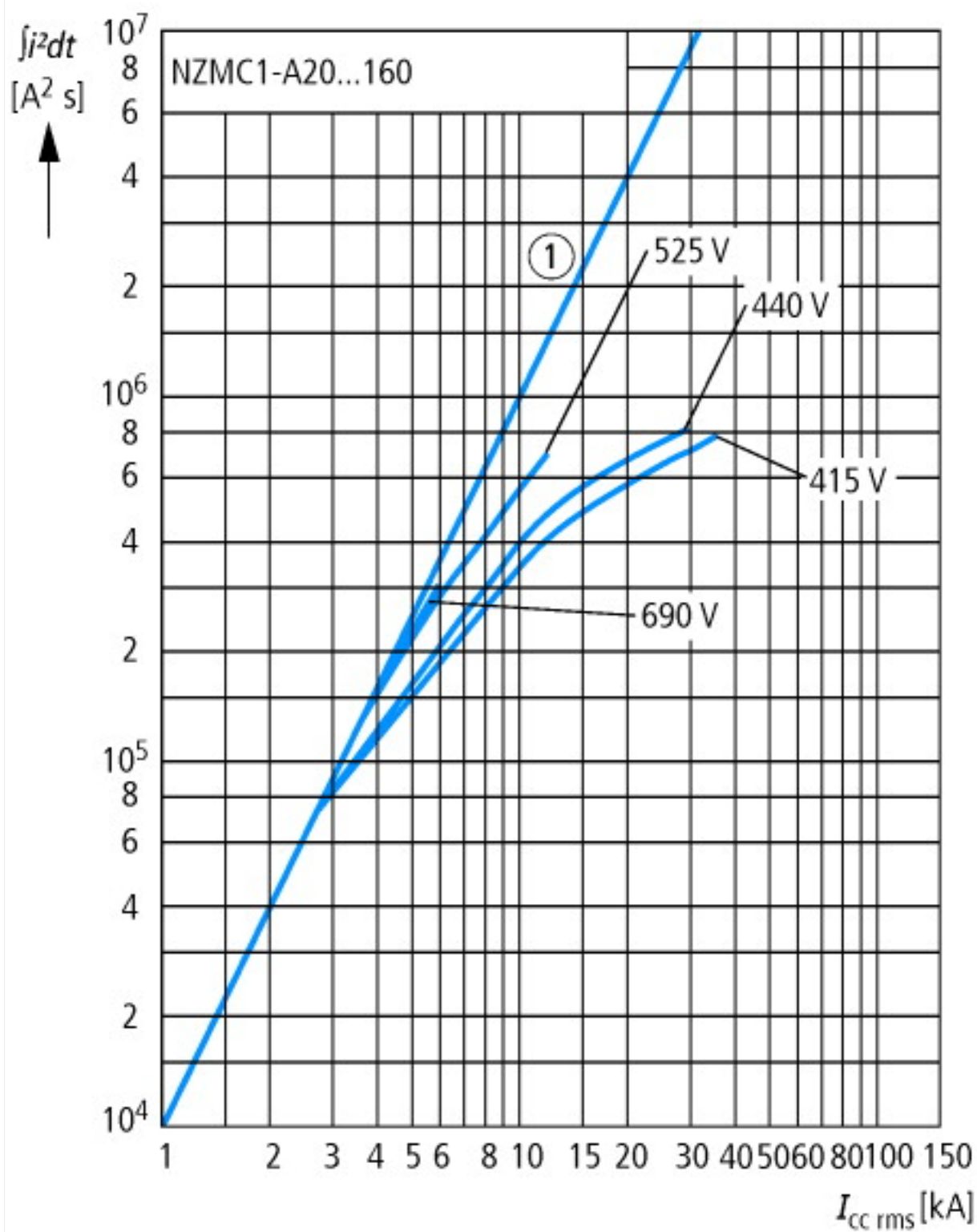
|                                                                                                                                                                                                                                         |  |    |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|------------------------------------------|
| 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 (ec@ss8.1-27-37-04-09 [AJZ716010]) |  |    |                                          |
| Rated permanent current I <sub>u</sub>                                                                                                                                                                                                  |  | A  | 100                                      |
| 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  | 80 - 100                                 |
| Adjustment range short-term delayed short-circuit release                                                                                                                                                                               |  | A  | 0 - 0                                    |
| Adjustment range undelayed short-circuit release                                                                                                                                                                                        |  | A  | 600 - 1000                               |
| 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                                        |
| 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                 |  | No   |
| Degree of protection (IP)            |  | IP20 |

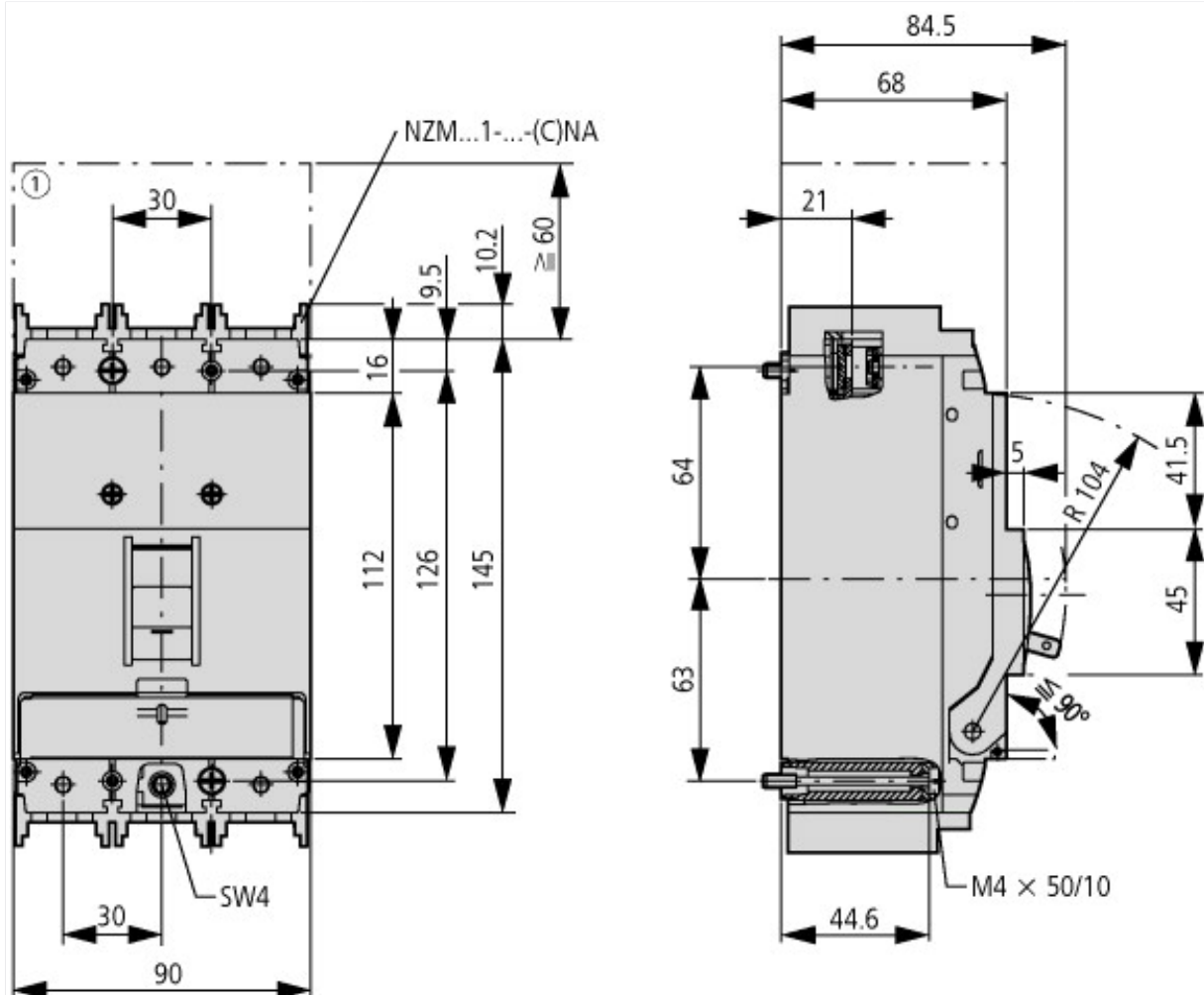
Characteristics





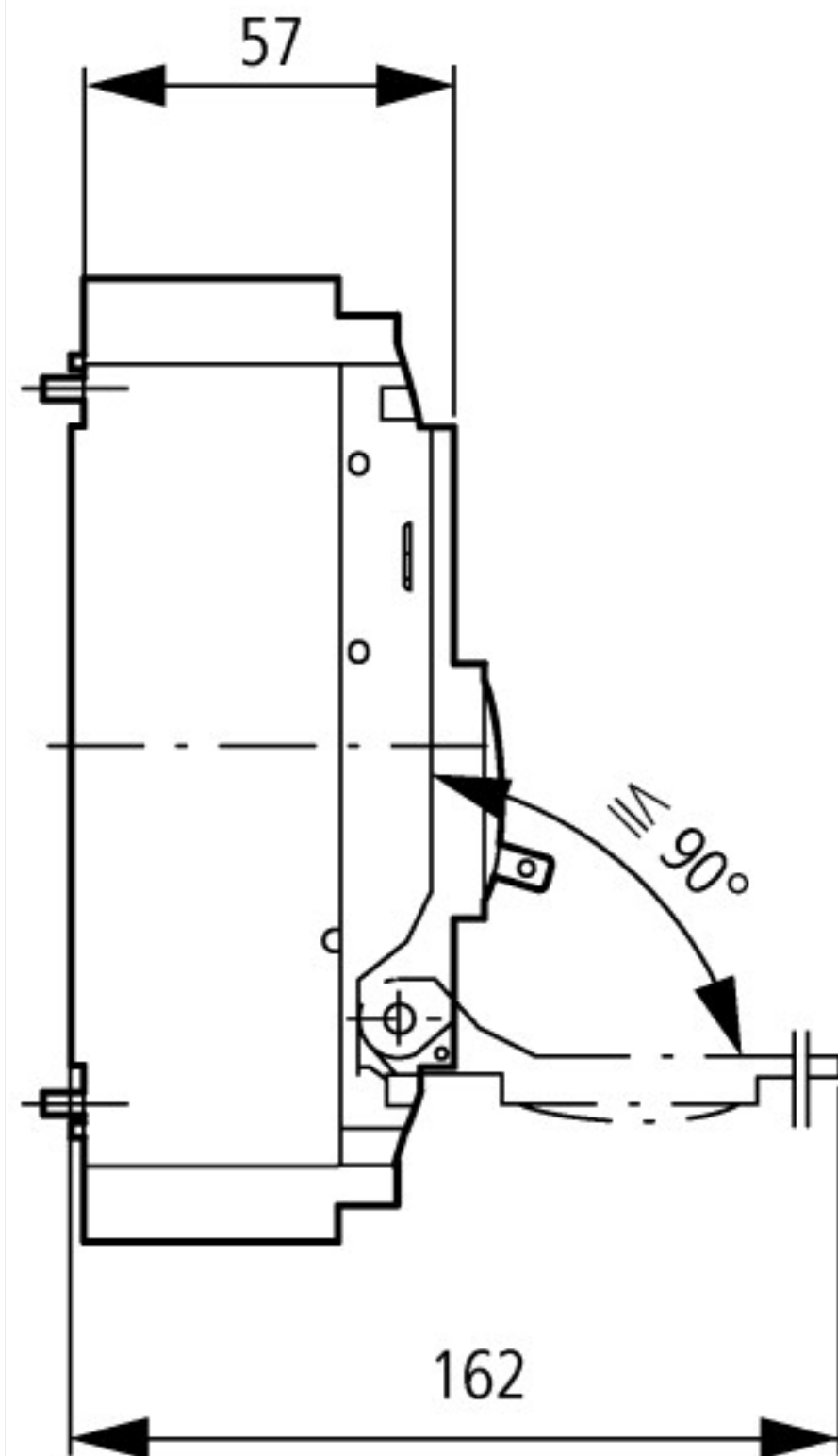


## Dimensions



① Blow out area, minimum clearance to other parts





### Additional product information (links)

**IL01203007Z circuit-breaker LZM.1(-4), switch-disconnector LN1**

IL01203007Z circuit-breaker LZM.1(-4), switch-disconnector LN1 [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL01203007Z2011\\_01.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL01203007Z2011_01.pdf)