

**Part no.** NZMB2-M125-SVE  
**Catalog No.** 113196

### Delivery program

|                     |  |  |                                                                                                                                           |
|---------------------|--|--|-------------------------------------------------------------------------------------------------------------------------------------------|
| Product range       |  |  | Circuit-breaker                                                                                                                           |
| Protective function |  |  | Motor protection                                                                                                                          |
| Standard/Approval   |  |  | IEC                                                                                                                                       |
| Installation type   |  |  | Plug-in units                                                                                                                             |
| Release system      |  |  | Thermomagnetic release                                                                                                                    |
| Construction size   |  |  | NZM2                                                                                                                                      |
| Description         |  |  | Tripping class 10 A<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  |  |  | Screw connection                                                                                                                          |

### Switching capacity

|                                             |             |    |     |
|---------------------------------------------|-------------|----|-----|
| 400/415 V 50 Hz                             | $I_{cu}$    | kA | 25  |
| Rated current = rated uninterrupted current | $I_n = I_u$ | A  | 125 |

### Setting range

|                                                                                     |                          |   |           |
|-------------------------------------------------------------------------------------|--------------------------|---|-----------|
| Overload trip                                                                       |                          |   |           |
|   | $I_r$                    | A | 100 - 125 |
| Short-circuit releases                                                              |                          |   |           |
|  |                          |   |           |
| Non-delayed                                                                         | $I_i = I_n \times \dots$ |   | 8 - 14    |
|  |                          |   |           |

### Motor rating AC-3 50/60 Hz

|             |   |    |    |
|-------------|---|----|----|
| 380 V 400 V | P | kW | 55 |
|-------------|---|----|----|

### Motor rating AC-3 50/60 Hz

|       |   |    |    |
|-------|---|----|----|
| 400 V | P | kW | 55 |
|-------|---|----|----|

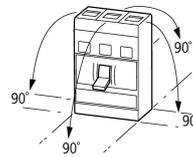
### Rated operational current AC-3 50/60 Hz

|       |       |   |    |
|-------|-------|---|----|
| 400 V | $I_e$ | A | 99 |
|-------|-------|---|----|

## 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                                             |



With XFI earth-fault release:

- NZM1, N1, NZM2, N2: vertical and 90° in all directions with plug-in unit
- NZM1, N1, NZM2, N2: vertical, 90° right/left with withdrawable unit:
- NZM3, N3: vertical, 90° right/left
- NZM4, N4: vertical with remote operator:
- NZM2, N(S)2, NZM3, N(S)3, NZM4, N(S)4: vertical and 90° in all directions

|                                        |  |                                                                          |
|----------------------------------------|--|--------------------------------------------------------------------------|
| Direction of incoming supply           |  | as required                                                              |
| Degree of protection                   |  |                                                                          |
| Device                                 |  | In the operating controls area: IP20 (basic degree of protection)        |
| Enclosures                             |  | With insulating surround: IP40<br>With door coupling rotary handle: IP66 |
| Terminations                           |  | Tunnel terminal: IP10<br>Phase isolator and strip terminal: IP00         |
| Other technical data (sheet catalogue) |  | Temperature dependency, Derating                                         |

### Circuit-breakers

|                                             |             |      |       |
|---------------------------------------------|-------------|------|-------|
| Rated current = rated uninterrupted current | $I_n = I_u$ | A    | 125   |
| Rated surge voltage invariability           | $U_{imp}$   |      |       |
| Main contacts                               |             | V    | 8000  |
| Auxiliary contacts                          |             | V    | 6000  |
| Rated operational voltage                   | $U_e$       | V AC | 440   |
| Overtoltage category/pollution degree       |             |      | III/3 |
| Rated insulation voltage                    | $U_i$       | V    | 690   |
| Use in unearthed supply systems             |             | V    | ≤ 440 |

### Switching capacity

|                                                                              |            |       |                                                                                                                                                 |
|------------------------------------------------------------------------------|------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated short-circuit making capacity                                          | $I_{cm}$   |       |                                                                                                                                                 |
| 240 V                                                                        | $I_{cm}$   | kA    | 63                                                                                                                                              |
| 400/415 V                                                                    | $I_{cm}$   | kA    | 53                                                                                                                                              |
| 440 V 50/60 Hz                                                               | $I_{cm}$   | kA    | 53                                                                                                                                              |
| 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    | 30                                                                                                                                              |
| 400/415 V 50/60 Hz                                                           | $I_{cu}$   | kA    | 25                                                                                                                                              |
| 440 V 50/60 Hz                                                               | $I_{cu}$   | kA    | 25                                                                                                                                              |
| $I_{cs}$ to IEC/EN 60947 test cycle O-t-CO-t-CO                              | $I_{cs}$   | kA    |                                                                                                                                                 |
| 240 V 50/60 Hz                                                               | $I_{cs}$   | kA    | 30                                                                                                                                              |
| 400/415 V 50/60 Hz                                                           | $I_{cs}$   | kA    | 25                                                                                                                                              |
| 440 V 50/60 Hz                                                               | $I_{cs}$   | kA    | 18.5                                                                                                                                            |
|                                                                              |            |       | 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 |       | 7500                                                                                                                                            |
| Max. operating frequency                                                     |            | Ops/h | 120                                                                                                                                             |
| Total break time at short-circuit                                            |            | ms    | < 10                                                                                                                                            |

### Terminal capacity

|                        |  |                                                       |
|------------------------|--|-------------------------------------------------------|
| Standard equipment     |  | Screw connection                                      |
| Accessories required   |  | NZM2-XSVS                                             |
| 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                                                  |      |                 |                                      |
| 1-hole                                                    |      | 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 circular conductor                                     |      |                 |                                      |
| Tunnel terminal                                           |      |                 |                                      |
| Solid                                                     |      | mm <sup>2</sup> | 1 x 16                               |
| Stranded                                                  |      |                 |                                      |
| Stranded                                                  |      | mm <sup>2</sup> | 1 x (25 - 185)                       |
| 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)                         |      | mm              |                                      |
| 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  | 125                                                                |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub> | W  | 27.61                                                              |
| 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 8.0

|                                                                                                                                                                                                       |    |  |                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--|-----------------------------------|
| 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  |  | 100 - 125                         |
| Adjustment range undelayed short-circuit release                                                                                                                                                      | A  |  | 1000 - 1750                       |
| With thermal protection                                                                                                                                                                               |    |  | Yes                               |
| Phase failure sensitive                                                                                                                                                                               |    |  | No                                |
| Switch off technique                                                                                                                                                                                  |    |  | Thermomagnetic                    |
| Rated operating voltage                                                                                                                                                                               | V  |  | 440 - 440                         |
| Rated permanent current I <sub>u</sub>                                                                                                                                                                | A  |  | 125                               |
| Rated operation power at AC-3, 230 V                                                                                                                                                                  | kW |  | 37                                |
| Rated operation power at AC-3, 400 V                                                                                                                                                                  | kW |  | 55                                |
| Type of electrical connection of main circuit                                                                                                                                                         |    |  | Screw connection                  |
| 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 I <sub>cu</sub> at 400 V, AC                                                                                                                                    | kA |  | 18.5                              |
| Degree of protection (IP)                                                                                                                                                                             |    |  | IP20                              |
| Height                                                                                                                                                                                                | mm |  | 245                               |
| Width                                                                                                                                                                                                 | mm |  | 105                               |
| Depth                                                                                                                                                                                                 | mm |  | 180                               |