

# Specifications



## Eaton 113729

Eaton Moeller series NZM - Molded Case Circuit Breaker. Switch-disconnector 3p 63A +pull out

### General specifications

|                             |                                              |
|-----------------------------|----------------------------------------------|
| <b>PRODUCT NAME</b>         | Eaton Moeller series NZM switch-disconnector |
| <b>CATALOG NUMBER</b>       | 113729                                       |
| <b>MODEL CODE</b>           | N1-63-SVE                                    |
| <b>EAN</b>                  | 4015081132690                                |
| <b>PRODUCT LENGTH/DEPTH</b> | 90 mm                                        |
| <b>PRODUCT HEIGHT</b>       | 201 mm                                       |
| <b>PRODUCT WIDTH</b>        | 95 mm                                        |
| <b>PRODUCT WEIGHT</b>       | 1.023 kg                                     |
| <b>COMPLIANCES</b>          | RoHS conform                                 |
| <b>CERTIFICATIONS</b>       | IEC/EN 60947<br>IEC                          |

## Additional information

### FUNCTIONS

Disconnectors/main  
switches  
Interlockable  
Voltage release optional

## Delivery programme

|                             |                       |
|-----------------------------|-----------------------|
| <b>ACCESSORIES REQUIRED</b> | NZM2-XSVS socket base |
|-----------------------------|-----------------------|

|                        |      |
|------------------------|------|
| <b>AMPERAGE RATING</b> | 63 A |
|------------------------|------|

|                    |                                             |
|--------------------|---------------------------------------------|
| <b>APPLICATION</b> | Use in unearthed supply<br>systems at 690 V |
|--------------------|---------------------------------------------|

|                                       |    |
|---------------------------------------|----|
| <b>CIRCUIT BREAKER FRAME<br/>TYPE</b> | N1 |
|---------------------------------------|----|

|                 |                                                                                                                   |
|-----------------|-------------------------------------------------------------------------------------------------------------------|
| <b>FEATURES</b> | Version as maintenance-<br>/service switch<br>Version as emergency stop<br>installation<br>Version as main switch |
|-----------------|-------------------------------------------------------------------------------------------------------------------|

|                        |            |
|------------------------|------------|
| <b>NUMBER OF POLES</b> | Three-pole |
|------------------------|------------|

|                         |                                                                                                                                                                                                                                                                                                                        |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SPECIAL FEATURES</b> | <ul style="list-style-type: none"><li>• Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.</li><li>• Isolating characteristics to IEC/EN 60947-3 and VDE 0660.</li><li>• Busbar tag shroud to VDE 0160 Part 100.</li><li>• Rated current = rated uninterrupted current: 63 A</li></ul> |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|             |                     |
|-------------|---------------------|
| <b>TYPE</b> | Switch-disconnector |
|-------------|---------------------|

## Design verification to IEC/EN 61439

|                                                                                         |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>10.10 TEMPERATURE RISE</b>                                                           | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| <b>10.11 SHORT-CIRCUIT RATING</b>                                                       | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>                                              | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.13 MECHANICAL FUNCTION</b>                                                        | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
| <b>10.2.2 CORROSION RESISTANCE</b>                                                      | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>                         | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>       | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b> | Meets the product standard's requirements.                                                                                       |
| <b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>                                 | Meets the product standard's requirements.                                                                                       |
| <b>10.2.5 LIFTING</b>                                                                   | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.6 MECHANICAL IMPACT</b>                                                         | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.7 INSCRIPTIONS</b>                                                              | Meets the product standard's requirements.                                                                                       |
| <b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>                                          | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>                                           | Meets the product standard's requirements.                                                                                       |
| <b>10.5 PROTECTION</b>                                                                  | Does not apply, since the                                                                                                        |

## Design verification to IEC/EN 61439 - technical data

|                                                                      |        |
|----------------------------------------------------------------------|--------|
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>                           | 70 °C  |
| <b>AMBIENT STORAGE TEMPERATURE - MAX</b>                             | 70 °C  |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>                           | -25 °C |
| <b>AMBIENT STORAGE TEMPERATURE - MIN</b>                             | 40 °C  |
| <b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT</b>                 | 4.52 W |
| <b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b> | 63 A   |

|                                                                 |                                                                    |
|-----------------------------------------------------------------|--------------------------------------------------------------------|
| <b>AGAINST ELECTRIC SHOCK</b>                                   | entire switchgear needs to be evaluated.                           |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>   | Does not apply, since the entire switchgear needs to be evaluated. |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>        | Is the panel builder's responsibility.                             |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                 | Is the panel builder's responsibility.                             |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                 | Is the panel builder's responsibility.                             |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                         | Is the panel builder's responsibility.                             |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b> | Is the panel builder's responsibility.                             |

## Technical data - electrical

|                                                                     |                                                                                                                                                                                                            |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AMPERAGE RATING</b>                                              | 63 A                                                                                                                                                                                                       |
| <b>DIRECTION OF INCOMING SUPPLY</b>                                 | As required                                                                                                                                                                                                |
| <b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>                   | Frame clamp                                                                                                                                                                                                |
| <b>HANDLE TYPE</b>                                                  | Rocker lever                                                                                                                                                                                               |
| <b>ISOLATION</b>                                                    | 300 V AC (between the auxiliary contacts)<br>500 V AC (between auxiliary contacts and main contacts)                                                                                                       |
| <b>LIFESPAN, ELECTRICAL</b>                                         | 1000 operations at 415 V AC-23A<br>7500 operations at 690 V AC-1<br>1000 operations at 400 V AC-23A<br>10000 operations at 400 V AC-1<br>10000 operations at 415 V AC-1<br>1000 operations at 690 V AC-23A |
| <b>NUMBER OF OPERATIONS PER HOUR - MAX</b>                          | 120                                                                                                                                                                                                        |
| <b>OVERVOLTAGE CATEGORY</b>                                         | III                                                                                                                                                                                                        |
| <b>POLLUTION DEGREE</b>                                             | 3                                                                                                                                                                                                          |
| <b>RATED CONDITIONAL SHORT-CIRCUIT CURRENT WITH BACK-UP FUSE</b>    | 80 kA at 690 V<br>63 gG/gL<br>100 kA at 400/415 V                                                                                                                                                          |
| <b>RATED CONDITIONAL SHORT-CIRCUIT CURRENT WITH DOWNSTREAM FUSE</b> | 10 kA at 690 V<br>63 gG/gL<br>100 kA at 400/415 V                                                                                                                                                          |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS</b> | 6000 V                                                                                                                                                                                                     |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS</b>      | 6000 V                                                                                                                                                                                                     |
| <b>RATED INSULATION VOLTAGE (UI)</b>                                | 690 V                                                                                                                                                                                                      |
| <b>RATED OPERATING FREQUENCY</b>                                    | 50 Hz                                                                                                                                                                                                      |
| <b>RATED OPERATING POWER AT AC-23, 400 V</b>                        | 30 kW                                                                                                                                                                                                      |

## Technical data - mechanical

|                                                                |                                                                                                                                                                                               |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CLIMATIC PROOFING</b>                                       | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78                                                                                                                |
| <b>DEGREE OF PROTECTION</b>                                    | IP20 (basic protection type, in the area of the HMI devices)<br>Other                                                                                                                         |
| <b>DEGREE OF PROTECTION (IP), FRONT SIDE</b>                   | IP20<br>IP40 (with insulating surround)<br>IP66 (with door coupling rotary handle)                                                                                                            |
| <b>DEGREE OF PROTECTION (TERMINATIONS)</b>                     | IP10 (tunnel terminal)<br>IP00 (terminations, phase isolator and band terminal)                                                                                                               |
| <b>HANDLE COLOR</b>                                            | Black                                                                                                                                                                                         |
| <b>LIFESPAN, MECHANICAL</b>                                    | 20000 operations                                                                                                                                                                              |
| <b>MOUNTING METHOD</b>                                         | Plug-in unit<br>Ground mounting<br>Intermediate mounting<br>Built-in device plug-in technique<br>Distribution board installation                                                              |
| <b>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>     | 0                                                                                                                                                                                             |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 0                                                                                                                                                                                             |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 0                                                                                                                                                                                             |
| <b>NUMBER OF SWITCHES</b>                                      | 1                                                                                                                                                                                             |
| <b>PROTECTION AGAINST DIRECT CONTACT</b>                       | Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110                                                                                                                               |
| <b>SHOCK RESISTANCE</b>                                        | 20 g (half-sinusoidal shock 20 ms)                                                                                                                                                            |
| <b>SPECIAL FEATURES</b>                                        | <ul style="list-style-type: none"> <li>Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.</li> <li>Isolating characteristics to IEC/EN 60947-3 and</li> </ul> |

|                                                                   |                                                                                                                |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>RATED OPERATING VOLTAGE (UE) AT AC - MAX</b>                   | 690 V                                                                                                          |
| <b>RATED OPERATIONAL CURRENT</b>                                  | 160 A (690 V AC-22/23A, making and breaking capacity)<br>160 A (415 V AC-22/23A, making and breaking capacity) |
| <b>RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ</b> | 2.8 kA                                                                                                         |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (ICW)</b>                   | 2 kA                                                                                                           |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (T = 0.3 S)</b>             | 2 kA                                                                                                           |
| <b>RATED SHORT-TIME WITHSTAND CURRENT (T = 1 S)</b>               | 2 kA                                                                                                           |
| <b>SHORT-CIRCUIT PROTECTIVE DEVICE FUSES - MAX</b>                | 125 A gL                                                                                                       |
| <b>VOLTAGE RATING</b>                                             | 690 V - 690 V                                                                                                  |

|                         |                                                                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | VDE 0660. <ul style="list-style-type: none"> <li>• Busbar tag shroud to VDE 0160 Part 100.</li> <li>• Rated current = rated uninterrupted current: 63 A</li> </ul> |
| <b>SWITCH POSITIONS</b> | I, +, 0                                                                                                                                                            |

## Technical data - mechanical - terminals

### TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)

16 mm<sup>2</sup> (1x) at tunnel  
terminal  
10 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x)  
direct at switch rear-side  
connection  
10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x)  
direct at switch rear-side  
connection

### TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)

25 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at 1-  
hole tunnel terminal

### TERMINAL CAPACITY (COPPER BUSBAR)

Max. 16 mm x 5 mm direct  
at switch rear-side  
connection  
Min. 12 mm x 5 mm direct  
at switch rear-side  
connection  
M6 at rear-side screw  
connection

### TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)

6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) at  
box terminal  
10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x) at  
box terminal  
6 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x) direct  
at switch rear-side  
connection  
16 mm<sup>2</sup> (1x) at tunnel  
terminal  
10 mm<sup>2</sup> - 16 mm<sup>2</sup> (1x)  
direct at switch rear-side  
connection

### TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)

10 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x) at  
box terminal  
6 mm<sup>2</sup> - 25 mm<sup>2</sup> (2x) at  
box terminal  
25 mm<sup>2</sup> - 95 mm<sup>2</sup> (1x) at 1-  
hole tunnel terminal  
25 mm<sup>2</sup> (2x) direct at  
switch rear-side  
connection  
25 mm<sup>2</sup> - 70 mm<sup>2</sup> (1x)  
direct at switch rear-side  
connection  
Terminal capacity hint: Up  
to 95 mm<sup>2</sup> can be  
connected depending on  
the cable manufacturer

### TERMINAL CAPACITY (COPPER STRIP)

Max. 9 segments of 9 mm  
x 0.8 mm at box terminal  
Min. 2 segments of 9 mm  
x 0.8 mm at box terminal

## Resources

### BROCHURES

[eaton-feerum-the-whole-  
grain-solution-success-  
story-en-us.pdf](#)

[eaton-digital-nzm-  
brochure-br013003en-en-  
us.pdf](#)

### CATALOGUES

[eaton-digital-nzm-catalog-  
ca013003en-en-us.pdf](#)

### DECLARATIONS OF CONFORMITY

[eaton-switch-  
disconnecter-declaration-  
of-conformity-  
eu250125en.pdf](#)

### DRAWINGS

[eaton-circuit-breaker-  
switch-nzm-mccb-  
dimensions-014.eps](#)

[eaton-circuit-breaker-nzm-  
mccb-dimensions-017.eps](#)

[eaton-circuit-breaker-  
socket-nzm-mccb-3d-  
drawing.eps](#)

### ECAD MODEL

[DA-CE-ETN.N1-63-SVE](#)

### INSTALLATION VIDEOS

[The new digital NZM  
Range](#)

[Introduction of the new  
digital circuit breaker NZM](#)

### MCAD MODEL

[eaton-molded-case-  
switches-mcad-3d-models-  
nzm1-xsve.stp](#)

[eaton-molded-case-  
switches-mcad-drawings-  
nzm1-xsve.dwg](#)

### TECHNICAL DATA SHEETS

[eaton-nzm-technical-  
information-sheet](#)

|                 |
|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



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