DATASHEET - NZMB1-S80

Circuit-breaker, 3p, 80A

Part no.

NZMB1-S80 265729



| General specifications | |
|---|--|
| Product name | Eaton Moeller series NZM molded case circuit breaker magnetic |
| Part no. | NZMB1-S80 |
| EAN | 4015082657291 |
| Product Length/Depth | 88 millimetre |
| Product height | 145 millimetre |
| Product width | 90 millimetre |
| Product weight | 1.046 kilogram |
| Compliances | RoHS conform |
| Certifications | IEC IEC/EN 60947 |
| Product Tradename | NZM |
| Product Type | Molded case circuit breaker |
| Product Sub Type | Magnetic |
| Delivery program | |
| Application | Use in unearthed supply systems at 440 V |
| Туре | Circuit breaker |
| Circuit breaker frame type | NZM1 |
| Number of poles | Three-pole |
| Amperage Rating | 80 A |
| Release system | Thermomagnetic release |
| Special features | Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity lcn) Motor protection in conjunction with overload relay With short-circuit release Without overload release Ir IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. Rated current = rated uninterrupted current: 80 A Terminal capacity hint: Up to 95 mm ² can be connected depending on the cable manufacturer. |
| Technical Data - Electrical | |
| Voltage rating | 440 V - 440 V |
| Rated insulation voltage (Ui) | 690 V |
| Rated impulse withstand voltage (Uimp) at auxiliary contacts | 6000 V |
| Rated impulse withstand voltage (Uimp) at main contacts | 6000 V |
| Rated operational current | 68 A (400 V AC-3) |
| Instantaneous current setting (li) - min | 8 A |
| Instantaneous current setting (li) - max | 44328 A |
| Overload current setting (Ir) - min | 0 A |
| Overload current setting (Ir) - max | 0 A |
| Short-circuit release non-delayed setting - min | 640 A |
| Short-circuit release non-delayed setting - max | 1120 A |
| Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz | 30 kA |
| Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz | 18.5 kA |
| Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz | 18.5 kA |
| Rated short-circuit making capacity Icm at 240 V, 50/60 Hz | 63 kA |
| Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz | 53 kA |
| Rated short-circuit making capacity Icm at 440 V, 50/60 Hz | 53 kA |
| Rated operating power at AC-3, 230 V | 22 kW |
| Rated operating power at AC-3, 400 V | 45 kW |
| Short-circuit total breaktime | < 10 ms |
| | |

| Electrical connection type of main circuit | Other |
|---|--|
| Isolation | 500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts) |
| Number of operations per hour - max | 120 |
| Handle type | Rocker lever |
| Utilization category | A (IEC/EN 60947-2) |
| Overvoltage category | III III |
| Pollution degree | 3 |
| Lifespan, electrical | 7500 operations at 415 V AC-1 7500 operations at 400 V AC-1 |
| Direction of incoming supply | As required |
| Technical Data - Mechanical | |
| Mounting Method | Built-in device fixed built-in technique Fixed |
| Degree of protection | IP20 (basic degree of protection, in the operating controls area) IP20 |
| Degree of protection (IP), front side | IP66 (with door coupling rotary handle) IP40 (with insulating surround) |
| Degree of protection (terminations) | IP10 (tunnel terminal) IP00 (terminations, phase isolator and strip terminal) |
| Protection against direct contact | Finger and back-of-hand proof to VDE 0106 part 100 |
| Shock resistance | 20 g (half-sinusoidal shock 20 ms) |
| Switch off technique | Magnetic |
| Climatic proofing Special features | Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 Maximum back-up fuse, if the expected short-circuit currents at the installation |
| | location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity Icn) Motor protection in conjunction with overload relay With short-circuit release Without overload release Ir IEC/EN 60947-4-1, IEC/EN 60947-2 The circuit-breaker fulfills all requirements for AC-3 switching category. Rated current = rated uninterrupted current: 80 A Terminal capacity hint: Up to 95 mm ² can be connected depending on the cable manufacturer. |
| Lifespan, mechanical | 20000 operations |
| Technical Data - Mechanical - Terminals | |
| Standard terminals | Box terminal |
| Optional terminals | Connection on rear. Screw terminal. Tunnel terminal |
| Terminal capacity (control cable) | $0.75 \text{ mm}^2 - 1.5 \text{ mm}^2 (2x)$ |
| Terminal capacity (aluminum solid conductor/cable) | 0.75 mm ² - 2.5 mm ² (1x) 10 mm ² - 16 mm ² (2x) direct at switch rear-side connection 16 mm ² (1x) at tunnel terminal 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection |
| Terminal capacity (aluminum stranded conductor/cable) | 25 mm ² - 35 mm ² (2x) direct at switch rear-side connection 25 mm ² - 35 mm ² (1x) direct at switch rear-side connection 25 mm ² - 95 mm ² (1x) at tunnel terminal |
| Terminal capacity (copper busbar) | Min. 12 mm x 5 mm direct at switch rear-side connection M6 at rear-side screw connection Max. 16 mm x 5 mm direct at switch rear-side connection |
| Terminal capacity (copper solid conductor/cable) | 6 mm ² - 16 mm ² (2x) at box terminal 10 mm ² - 16 mm ² (1x) at box terminal 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (1x) at tunnel terminal 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection |
| Terminal capacity (copper stranded conductor/cable) | 25 mm ² - 95 mm ² (1x) at 1-hole tunnel terminal 25 mm ² (2x) direct at switch rear-side connection 10 mm ² - 70 mm ² (1x) direct at switch rear-side connection 6 mm ² - 25 mm ² (2x) at box terminal 10 mm ² - 70 mm ² (1x) at box terminal |
| 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 |
| Design verification as per IEC/EN 61439 - technical data | |
| Rated operational current for specified heat dissipation (In) | 80 A |
| Equipment heat dissipation, current-dependent | 16.32 W |
| Ambient operating temperature - min | -25 °C |
| Ambient operating temperature - max | 70 °C |

| Ambient storage temperature - min | 40 °C |
|--|--|
| Ambient storage temperature - max | 70 °C |
| Design verification as per IEC/EN 61439 | |
| 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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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. |
| 10.9.2 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. |
| Additional information | |
| Functions | Short-circuit protection |

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)

| [AGZz9021]) Adjustner ange undelayed short-circuit release A 0 Adjustment range undelayed short-circuit release B 44328 With thermal overload protection No No Phase failure sensitive No No Switch off technique Magnetic Magnetic Rated porrating voltage A No Rated porrating voltage A No Rated porrating voltage A No Rated porrating nower at AC-3, 200 V A No Rated operation power at AC-3, 200 V Magnetic South off technique Power loss Magnetic Magnetic South off technique Type of electrical connection of main circuit Magnetic South off technique South off technique With integrated auxiliary switch Magnetic South off technique Sou | | | | | |
|---|--|----|--|--|--|
| Ajustment range undelayed short-circuit release 8 4328 With thermal overload protection No Phase failure sensitive No Switch off technique Monetricuit release Reted operating voltage 40.40 Reted operating voltage VM Reted operation power at AC-3, 230 V VM Power loss VM Type of electrical connection of main circuit VM Power loss No Vith integrated auxiliary switch VM With integrated under voltage release VM Number of poles VM Reted short-circuit (IP) VM Number of poles VM Reted short-circuit (IP) VM With integrated under voltage release VM Number of poles VM Reted short-circuit (IP) VM Height Tm With the failed short-circuit (IP) VM Height Mone Short-Circuit (IP) VM Height Mone With the failed short-Circuit (IP) VM Height Mone | Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss13-27-37-04-01 [AGZ529021]) | | | | |
| With thermal overload protection No Phase failure sensitive No Switch off technique Magnetic Rated operating voltage V 40 - 440 Rated operating power at AC-3, 230 V KW 2 Rated operation power at AC-3, 400 V V 40 - 400 Power loss V 108 Power loss V 108 Type of control element V 108 Viti integrated auxiliary switch S No With integrated auxiliary switch S No Number of poles V S Rated short-circuit breaking capacity locat at400 V, AC KA 15 Degree of protection (IP) F Iso 15 Height mm 15 15 With therefore Imm 15 15 Bight mm 15 15 Mith therefore mm 15 15 | Overload release current setting | А | 0 - 0 | | |
| Phase failure sensitive No Switch off technique Magnetic Rated operating voltage V 40-440 Rated operating voltage V 40-440 Rated operating voltage V 40-440 Rated operating power at AC-3, 200 V KW 9 Rated operation power at AC-3, 200 V KW 5 Power loss V V 9 Power loss VW 10 10 Power loss VW 10 10 Power loss VW 10 10 Power loss VW No 10 With integrated auxiliary switch IN 10 10 Number of poles < | Adjustment range undelayed short-circuit release | А | 8 - 44328 | | |
| Switch off technique Magnetic Switch off technique Magnetic Rated operating voltage V 40 - 440 Rated operating voltage A 80 Rated operating voltage KW 2 Rated operating voltage KW 5 Rated operation power at AC-3, 200 V KW 5 Power loss KW 5 Type of electrical connection of main circuit KW 6ker lever Type of control element KW 6ker lever Device construction Solit - in device fixed built-in technique With integrated auxiliary switch KK Solit - in device fixed built-in technique With integrated under voltage release KK Solit - in device fixed built-in technique Number of poles KA Solit - in device fixed built-in technique Rated short-circuit breaking capacity leu at 400 V, AC KA Solit - in device fixed built-in technique Degree of protection (IP) KA Solit - in device fixed built-in technique Height Monte Solit - in device fixed built-in technique Solit - in device fixed built | With thermal overload protection | | No | | |
| Rated operating voltage V 40 - 440 Rated operating voltage V 40 - 440 Rated operating nower at AC-3, 230 V A 80 Rated operating nower at AC-3, 230 V V 8 Power loss V 80 Power loss V 80 Type of electrical connection of main circuit V 8 Power loss V 8 Device construction V 8 Nuth integrated auxiliary switch V No Nuth integrated under voltage release KA No Nuth of poles KA 18 Rated optractin (IP) KA 19 Height M 10 | Phase failure sensitive | | No | | |
| Rated permanent current lu A 8 Rated permanent current lu A 8 Rated operation power at AC-3, 230 V KW 2 Rated operation power at AC-3, 400 V KW 45 Power loss VM 10.8 Type of electrical connection of main circuit VM 5 Type of control element KM 8cker lever Device construction Boilt-in device fixed built-in technique With integrated auxiliary switch S No Number of poles S S Rated short-circuit breaking capacity lcu at 400 V, AC KA 8.5 Degree of protection (IP) Imm 145 Height mm 145 | Switch off technique | | Magnetic | | |
| Rated operation power at AC-3, 230 V KW 2 Rated operation power at AC-3, 2400 V KW 5 Power loss KW 1.8 Power loss VW 1.8 Type of electrical connection of main circuit VW More Type of control element KW Scker lever Device construction More More With integrated auxiliary switch More More Number of poles KA No Rated short-circuit breaking capacity locu at 400 V, AC KA Scale Height Imm 152 With Mare More More With Imm More More | Rated operating voltage | V | 440 - 440 | | |
| Rated operation power at AC-3, 400 V KW 4 Power loss V 1.8 Type of electrical connection of main circuit V 1.8 Type of control element KW 6 Device construction KW 8 With integrated auxiliary switch KW 8 Number of poles No 1 Rated short-circuit breaking capacity lou at 400 V, AC KA 8 Degree of protection (IP) KM 12 Height mm 15 With Mathematic Content mm 90 | Rated permanent current lu | А | 80 | | |
| Power loss W 1.8 Type of electrical connection of main circuit S We Other Type of control element Booker lever Booker lever Device construction S No With integrated auxiliary switch S No With integrated under voltage release S S Number of poles S S Read short-circuit breaking capacity lcu at 400 V, AC Me S Degree of protection (IP) F S S Height Me Me S With integrated. S S S Number of poles Me S S Read short-circuit breaking capacity lcu at 400 V, AC Me S S No S S S S S No S S S | Rated operation power at AC-3, 230 V | kW | 22 | | |
| Type of electrical connection of main circuit Fige of electrical connection of main circuit Fige of electrical connection of main circuit Type of control element Fige of electrical connection Roker lever Device construction Fige of electrical connection of main circuit Built-in device fixed built-in technique With integrated auxiliary switch Fige of electrical connection of poles No Number of poles Fige of protection (IP) Fige of electrical connection of Poles Fige of electrical connection (IP) Height Fige of protection (IP) Fige of electrical connection | Rated operation power at AC-3, 400 V | kW | 45 | | |
| Type of control element Bocker lever Device construction Bilt-in device fixed built-in technique With integrated auxiliary switch Image: Section of the section of t | Power loss | W | 10.8 | | |
| Note Note Built-in device fixed built-in technique Device construction Built-in device fixed built-in technique With integrated auxiliary switch Image: State | Type of electrical connection of main circuit | | Other | | |
| With integrated auxiliary switchMoWith integrated under voltage releaseMoNumber of polesNoRated short-circuit breaking capacity lou at 400 V, ACKADegree of protection (IP)ImmHeightImmWith integrated under voltage methodImmWith integrated under voltage metho | Type of control element | | Rocker lever | | |
| With integrated under voltage release Mo Number of poles G Rated short-circuit breaking capacity lcu at 400 V, AC KA Degree of protection (IP) IMD Height IMD With IMD Mith IMD | Device construction | | Built-in device fixed built-in technique | | |
| Number of poles Mumber of poles <th< td=""><td>With integrated auxiliary switch</td><td></td><td>No</td></th<> | With integrated auxiliary switch | | No | | |
| Rated short-circuit breaking capacity lcu at 400 V, AC KA 18.5 Degree of protection (IP) IM IM Height IM IM Width IM IM | With integrated under voltage release | | No | | |
| Degree of protection (IP)Image: Comparison of the sector of t | Number of poles | | 3 | | |
| Height mm 145 Width mm 90 | Rated short-circuit breaking capacity Icu at 400 V, AC | kA | 18.5 | | |
| Width mm 90 | Degree of protection (IP) | | IP20 | | |
| | Height | mm | 145 | | |
| Depth mm 88 | Width | mm | 90 | | |
| | Depth | mm | 88 | | |