## 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 <sup>2</sup> 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 <sup>2</sup> 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 <sup>2</sup> - 2.5 mm <sup>2</sup> (1x) 10 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 (aluminum stranded conductor/cable)	25 mm <sup>2</sup> - 35 mm <sup>2</sup> (2x) direct at switch rear-side connection 25 mm <sup>2</sup> - 35 mm <sup>2</sup> (1x) direct at switch rear-side connection 25 mm <sup>2</sup> - 95 mm <sup>2</sup> (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 <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 10 mm <sup>2</sup> - 16 mm <sup>2</sup> (1x) direct at switch rear-side connection 16 mm <sup>2</sup> (1x) at tunnel terminal 6 mm <sup>2</sup> - 16 mm <sup>2</sup> (2x) direct at switch rear-side connection
Terminal capacity (copper stranded conductor/cable)	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 10 mm <sup>2</sup> - 70 mm <sup>2</sup> (1x) direct at switch rear-side connection 6 mm <sup>2</sup> - 25 mm <sup>2</sup> (2x) at box terminal 10 mm <sup>2</sup> - 70 mm <sup>2</sup> (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		