DATASHEET - NZMH2-A100-FIA30

Circuit-breaker, 3p, 100A, +residual current circuit-breaker, 30mA, AC/DC sensitive

Part no. **NZMH2-A100-FIA30**
158530

General specifications	
Product name	Eaton Moeller series NZM molded case circuit breaker thermo-magnetic
Part no.	NZMH2-A100-FIA30
EAN	4015081550807
Product Length/Depth	293 millimetre
Product height	145 millimetre
Product width	140 millimetre
Product weight	4.738 kilogram
Compliances	RoHS conform
Certifications	IEC/EN 60947 VDE 0660 IEC EN 62423: Type B
Product Tradename	NZM
Product Type	Molded case circuit breaker
Product Sub Type	Thermo-magnetic
Delivery program	
Application	Use in unearthed supply systems at 400 V
Type	Circuit breaker
Circuit breaker frame type	NZM2
Number of poles	Three-pole
Amperage Rating	100 A
Release system	Thermomagnetic release, AC/DC sensitive earth-fault release
Features	Motor drive optional Protection unit
Special features	Rated current = rated uninterrupted current: 100 A 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) Depending on the cable manufacturer up to 240 mm^2 can be connected Rated fault current I△n = 0.03 A Rated frequency 50 Hz Rated operating voltage 400 V AC (+/- 10 %) Adjusting buttons can be sealed. Not UL/CSA approved Type A functionality even without operational voltage for rated frequency of 50 Hz Operational voltage range Type B 50 - 400 V AC (+ 10 %) Personnel protection and preventive fire protection for 0 - 100 kHz fault current frequency Suitability for the application in three-phase systems without neutral conductor Ready-to-connect combination consisting of type B circuit-breaker and residual current circuit-breaker and type A passive section For equipment with power electronics, such as inverters and variable frequency drives
Technical Data - Electrical	
Voltage rating	400 V - 400 V
Rated insulation voltage (Ui)	1000 V AC
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	8000 V
Rated short-time withstand current (t = 0.3 s)	1.9 kA
Rated short-time withstand current (t = 1 s)	1.9 kA
Instantaneous current setting (Ii) - min	600 A
Instantaneous current setting (Ii) - max	1000 A
Overload current setting (Ir) - min	80 A
Overload current setting (Ir) - max	100 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - max	0 A

Short-circuit release non-delayed setting - min	600 A
Short-circuit release non-delayed setting - max	1000 A
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz	150 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz	150 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz	330 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz	330 kA
Short-circuit total breaktime	< 10 ms
Electrical connection type of main circuit	Screw connection
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
Pollution degree	3
Lifespan, electrical	6500 operations at 415 V AC-3 10000 operations at 400 V AC-1 10000 operations at 415 V AC-1 6500 operations at 400 V AC-3
Direction of incoming supply	Bottom

Technical Data - Mechanical

Mounting Method	Built-in device fixed built-in technique Fixed DIN rail (top hat rail) mounting optional
Degree of protection	IP20 IP20 (basic degree of protection, in the operating controls area)
Degree of protection (IP), front side	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
Degree of protection (terminations)	IP00 (terminations, phase isolator and strip terminal) IP10 (tunnel terminal)
Protection against direct contact	Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part 110
Shock resistance	20 g (half-sinusoidal shock 20 ms)
Number of auxiliary contacts (change-over contacts)	0
Number of auxiliary contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)	0
Position of connection for main current circuit	Front side
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Special features	Rated current = rated uninterrupted current: 100 A 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) Depending on the cable manufacturer up to 240 mm^2 can be connected Rated fault current I△n = 0.03 A Rated frequency 50 Hz Rated operating voltage 400 V AC (+/- 10 %) Adjusting buttons can be sealed. Not UL/CSA approved Type A functionality even without operational voltage for rated frequency of 50 Hz Operational voltage range Type B 50 - 400 V AC (+ 10 %) Personnel protection and preventive fire protection for 0 - 100 kHz fault current frequency Suitability for the application in three-phase systems without neutral conductor Ready-to-connect combination consisting of type B circuit-breaker and residual current circuit-breaker and type A passive section For equipment with power electronics, such as inverters and variable frequency drives
Lifespan, mechanical	20000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Screw terminal
Optional terminals	Box terminal. Connection on rear. Tunnel terminal
Terminal capacity (control cable)	0.75 mm^2 - 1.5 mm^2 (2x) 0.75 mm^2 - 2.5 mm^2 (1x)
Terminal capacity (aluminum solid conductor/cable)	16 mm^2 (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)	25 mm^2 - 185 mm^2 (1x) at tunnel terminal
Terminal capacity (copper busbar)	M8 at rear-side screw connection Max. 24 mm x 8 mm direct at switch rear-side connection Min. 16 mm x 5 mm direct at switch rear-side connection

Terminal capacity (copper solid conductor/cable)			16 mm^2 (1x) at tunnel terminal 6 mm^2 - 16 mm^2 (2x) at box terminal 10 mm^2 - 16 mm^2 (1x) at box terminal 6 mm^2 - 16 mm^2 (2x) direct at switch rear-side connection 10 mm^2 - 16 mm^2 (1x) direct at switch rear-side connection
Terminal capacity (copper stranded conductor/cable)			25 mm^2 - 70 mm^2 (2x) direct at switch rear-side connection 25 mm^2 - 70 mm^2 (2x) at box terminal 25 mm^2 - 185 mm^2 (1x) direct at switch rear-side connection 25 mm^2 - 185 mm^2 (1x) at box terminal 25 mm^2 - 185 mm^2 (1x) at 1-hole tunnel terminal
Terminal capacity (copper strip)			Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 2 segements of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 16 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)			100 A
Equipment heat dissipation, current-dependent			8.25 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			System and cable protection, fire protection, personnel protection

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss13-27-37-04-09 [AJZ716018])

Rated permanent current Iu		A	100
Rated voltage		V	400 - 400
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz		kA	150
Overload release current setting		A	80 - 100
Adjustment range short-term delayed short-circuit release		A	0 - 0
Adjustment range undelayed short-circuit release		A	600 - 1000
Power loss		W	25.7

Device construction	Built-in device fixed built-in technique
Integrated earth fault protection	No
Type of electrical connection of main circuit	Screw connection
Suitable for DIN rail (top hat rail) mounting	No
DIN rail (top hat rail) mounting optional	Yes
Number of auxiliary contacts as normally closed contact	0
Number of auxiliary contacts as normally open contact	0
Number of auxiliary contacts as change-over contact	0
With switched-off indicator	No
With integrated under voltage release	No
Number of poles	3
Position of connection for main current circuit	Front side
Type of control element	Rocker lever
Complete device with protection unit	Yes
Motor drive integrated	No
Motor drive optional	Yes
Degree of protection (IP)	IP20

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