



Eaton Moeller series NZM - Molded Case Circuit Breaker. Switch disconnecter 4p, 250A, KCO

Part no. N2-250  
266010  
EL Number 4315574  
(Norway)

General specifications		
Product name		Eaton Moeller series NZM switch-disconnector
Part no.		N2-250
EAN		4015082660109
Product Length/Depth		142 millimetre
Product height		185 millimetre
Product width		105 millimetre
Product weight		1.931 kilogram
Compliances		RoHS conform
Certifications		IEC/EN 60947 IEC
Product Tradename		NZM
Product Type		Switch-disconnector
Product Sub Type		None
Delivery program		
Application		Use in unearthed supply systems at 690 V
Type		Switch-disconnector
Circuit breaker frame type		N2
Number of poles		Three-pole
Amperage Rating		250 A
Features		Version as maintenance-/service switch Version as emergency stop installation Motor drive optional Version as main switch
Special features		The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...Icw = 1.5 kA Rated current = rated uninterrupted current: 250 A Busbar tag shroud to VDE 0160 Part 100. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.
Technical Data - Electrical		
Voltage rating		690 V - 690 V
Rated operating voltage (Ue) at AC - max		690 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		8000 V
Rated conditional short-circuit current (Iq)		0 kA
Rated operational current		250 A (690 V AC-22/23A, making and breaking capacity) 250 A (415 V AC-22/23A, making and breaking capacity)
Rated permanent current at AC-21, 400 V		0 A
Rated permanent current at AC-23, 400 V		0 A
Rated conditional short-circuit current with back-up fuse		PN2(N2)-160...250: 250 AgGgL 80 kA at 690 V 100 kA at 400/415 V
Rated conditional short-circuit current with downstream fuse		100 kA at 400/415 V 80 kA at 690 V PN2(N2)-160...250: 250 AgGgL
Rated short-time withstand current (Icw)		3.5 kA
Rated short-time withstand current (t = 0.3 s)		3.5 kA
Rated short-time withstand current (t = 1 s)		3.5 kA
Rated operating frequency		50 Hz
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz		5.5 kA

Rated operating power at AC-3, 400 V		0 kW
Rated operating power at AC-23, 400 V		132 kW
Switching power at 400 V		0 kW
Short-circuit protective device fuses - max		250 A gL
Electrical connection type of main circuit		Screw connection
Isolation		300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts)
Number of operations per hour - max		120
Handle type		Rocker lever
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		7500 operations at 690 V AC-1 10000 operations at 400 V AC-1 7500 operations at 400 V AC-3 7500 operations at 415 V AC-3 5000 operations at 690 V AC-3 10000 operations at 415 V AC-1
Direction of incoming supply		As required

## Technical Data - Mechanical

Mounting Method		Built-in device fixed built-in technique Distribution board installation Ground mounting Fixed Intermediate mounting
Degree of protection		Other IP20 (basic protection type, in the area of the HMI devices)
Degree of protection (IP), front side		IP66 (with door coupling rotary handle) IP40 (with insulating surround) IP20
Degree of protection (terminations)		IP00 (terminations, phase isolator and band 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
Number of switches		1
Handle color		Black
Switch positions		I, +, 0
Climatic proofing		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Special features		The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...Icw = 1.5 kA Rated current = rated uninterrupted current: 250 A Busbar tag shroud to VDE 0160 Part 100. Isolating characteristics to IEC/EN 60947-3 and VDE 0660. Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.
Lifespan, mechanical		20000 operations

## Technical Data - Mechanical - Terminals

Standard terminals		Screw terminal
Optional terminals		Box terminal. Connection on rear. Tunnel terminal
Terminal capacity (aluminum solid conductor/cable)		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 16 mm <sup>2</sup> (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)		25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal
Terminal capacity (copper busbar)		Max. 24 mm x 8 mm direct at switch rear-side connection M8 at rear-side screw connection Min. 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) direct at switch rear-side connection 6 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) at box terminal 16 mm <sup>2</sup> (1x) at tunnel terminal
Terminal capacity (copper stranded conductor/cable)		25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at 1-hole tunnel terminal 25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x) direct at switch rear-side connection 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) direct at switch rear-side connection 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at box terminal 25 mm <sup>2</sup> - 70 mm <sup>2</sup> (2x) at box terminal

Terminal capacity (copper strip)			Max. 8 segments of 15.5 mm x 0.8 mm (2x) at box terminal Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 16 mm x 0.8 mm at box terminal Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched)
Design verification as per IEC/EN 61439 - technical data			
Rated operational current for specified heat dissipation (In)			250 A
Equipment heat dissipation, current-dependent			48 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			Interlockable Voltage release optional Disconnectors/main switches

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Switch disconnecter (low voltage) (EC000216)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ec!@ss13-27-37-14-03 [AKF060018])			
Version as main switch			Yes
Version as maintenance-/service switch			Yes
Version as safety switch			No
Version as emergency stop installation			Yes
Version as reversing switch			No
Number of switches			1
Max. rated operation voltage Ue AC		V	690
Rated operating voltage		V	690 - 690
Rated permanent current Iu		A	250
Rated permanent current at AC-23, 400 V		A	0
Rated permanent current at AC-21, 400 V		A	0
Rated operation power at AC-3, 400 V		kW	0

Rated short-time withstand current I <sub>cn</sub>	kA	3.5
Rated operation power at AC-23, 400 V	kW	132
Switching power at 400 V	kW	0
Conditioned rated short-circuit current I <sub>q</sub>	kA	0
Number of poles		3
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
Motor drive optional		Yes
Motor drive integrated		No
Voltage release optional		Yes
Device construction		Built-in device fixed built-in technique
Suitable for floor mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for front mounting centre		No
Suitable for distribution board installation		Yes
Suitable for intermediate mounting		Yes
Colour control element		Black
Type of control element		Rocker lever
Interlockable		Yes
Type of electrical connection of main circuit		Screw connection
With pre-assembled cabling		No
Degree of protection (IP), front side		IP20
Degree of protection (NEMA)		Other
Width	mm	105
Height	mm	185
Depth	mm	142
Width in number of modular spacings		