DATASHEET - NS3-600-NA

Molded Case Switch, 3p, 600A

Part no. NS3-600-NA
102688

EL Number (Norway) 4315512

Powering Business Worldwide™

General specifications

Product name	Eaton Moeller series NZM molded case switch
Part no.	NS3-600-NA
EAN	4015081025480
Product Length/Depth	159 millimetre
Product height	275 millimetre
Product width	140 millimetre
Product weight	6.34 kilogram
Compliances	RoHS conform
Certifications	UL listed CSA-C22.2 No. 5-09 UL (File No. E148671) Specially designed for North America CSA (Class No. 4652-06) UL/CSA CSA (File No. 22086) UL 489 UL (Category Control Number WJAZ) CE marking CSA certified IEC IEC 60947-2
Product Tradename	NZM
Product Type	Molded case switch
Product Sub Type	None

Delivery program

Application	Branch circuits, feeder circuits
Type	Switch-disconnector
Circuit breaker frame type	N3
Number of poles	Three-pole
Amperage Rating	600 A
Features	Protection unit Motor drive optional
Special features	IEC/EN 60947-2: circuit breakers without overcurrent (CBI-X) with main switch characteristics and isolating characteristics to IEC/EN 60204. Rated current = rated uninterrupted current: 600 A Terminal capacity hint: Up to 240 mm^2 can be connected depending on the cable manufacturer.

Technical Data - Electrical

Voltage rating	690 V - 690 V
Rated operating voltage Ue (UL) - max	600 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
Current rating (Iu) (UL 489 csa 22.2 no. 5.1)	600 A
Rated current (Iu)	600 A
Instantaneous current setting (Ii) - min	6600 A
Instantaneous current setting (Ii) - max	6600 A
Overload current setting (Ir) - min	0 A
Overload current setting (Ir) - max	0 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - max	0 A
Short-circuit release non-delayed setting - min	6600 A
Short-circuit release non-delayed setting - max	6600 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 breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz	130 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz	33 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 690 V, 50/60 Hz	9 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
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz	286 kA
Rated short-circuit making capacity Icm at 525 V, 50/60 Hz	143 kA
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz	74 kA
Short-circuit total breaktime	< 10 ms
Electrical connection type of main circuit	Screw connection
Number of operations per hour - max	60
Handle type	Rocker lever
Overvoltage category	III
Pollution degree	3
Lifespan, electrical	5000 operations at 400 V AC-1 2000 operations at 415 V AC-3 2000 operations at 690 V AC-3 3000 operations at 415 V AC-1 3000 operations at 690 V AC-1 2000 operations at 400 V AC-3
Direction of incoming supply	As required

Technical Data - Mechanical

Mounting Method	DIN rail (top hat rail) mounting optional Built-in device fixed built-in technique Fixed
Degree of protection	IP20 In the area of the HMI devices: IP20 (basic protection type)
Degree of protection (IP), front side	IP40 (with insulating surround) IP66 (with door coupling rotary handle)
Degree of protection (terminations)	IP10 (tunnel terminal) IP00 (terminations, phase isolator and band terminal)
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
Switch positions	I, +, 0
Special features	IEC/EN 60947-2: circuit breakers without overcurrent (CBI-X) with main switch characteristics and isolating characteristics to IEC/EN 60204. Rated current = rated uninterrupted current: 600 A Terminal capacity hint: Up to 240 mm^2 can be connected depending on the cable manufacturer.
Lifespan, mechanical	15000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Screw terminal
Optional terminals	Box terminal. Connection on rear. Tunnel terminal
Terminal capacity (aluminum solid conductor/cable)	16 mm^2 (1x) at tunnel terminal 10 mm^2 - 16 mm^2 (2x) direct at switch rear-side connection 16 mm^2 (1x) direct at switch rear-side connection
Terminal capacity (aluminum stranded conductor/cable)	25 mm^2 - 120 mm^2 (2x) direct at switch rear-side connection 25 mm^2 - 185 mm^2 (1x) at 1-hole tunnel terminal up to 240 mm^2 depending on the cable manufacturer. 25 mm^2 - 120 mm^2 (1x) direct at switch rear-side connection 50 mm^2 - 240 mm^2 (1x) at 2-hole tunnel terminal 50 mm^2 - 240 mm^2 (2x) at 2-hole tunnel terminal
Terminal capacity (copper busbar)	NA: max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension NA: min. 20 mm x 5 mm direct at switch rear-side connection Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection Min. 20 mm x 5 mm direct at switch rear-side connection M10 at rear-side screw connection NA: max. 10 mm x 50 mm (2x) at rear-side width extension NA: M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)	300 mm^2 (2x) at rear-side width extension NA: 500 AWG/kcmil (2x) at rear-side width extension NA: 6 AWG (1x) at tunnel terminal 16 mm^2 (2x) direct at switch rear-side connection 16 mm^2 (2x) at box terminal 16 mm^2 (1x) direct at switch rear-side connection

Terminal capacity (copper stranded conductor/cable)			25 mm^2 - 120 mm^2 (2x) at box terminal NA: 2 - 500 AWG/kcmil (1x) at box terminal 25 mm^2 - 240 mm^2 (2x) direct at switch rear-side connection 35 mm^2 - 240 mm^2 (1x) at box terminal 25 mm^2 - 185 mm^2 (1x) at 1-hole tunnel terminal NA: Max. 500 AWG/kcmil (2x) at 2-hole tunnel terminal 25 mm^2 - 240 mm^2 (1x) direct at switch rear-side connection NA: Max. 500 AWG/kcmil (1x) at 2-hole tunnel terminal
Terminal capacity (copper strip)			NA: 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm NA: max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 8 segments of 24 mm x 1 mm (2x) at box terminal Min. 6 segments of 16 mm x 0.8 mm at box terminal NA: min. 6 segments of 16 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)			600 A
Equipment heat dissipation, current-dependent			108 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			Disconnectors/main switches

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	600
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	150
Overload release current setting	A	0 - 0
Adjustment range short-term delayed short-circuit release	A	0 - 0

Adjustment range undelayed short-circuit release		A	6600 - 6600
Power loss		W	
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