

Specifications



Eaton 113733

Eaton Moeller series NZM - Molded Case Circuit Breaker. Switch-disconnector 3p 160A +pull out

General specifications

PRODUCT NAME	Eaton Moeller series NZM switch-disconnector
CATALOG NUMBER	113733
MODEL CODE	N2-160-SVE
EAN	4015081132737
PRODUCT LENGTH/DEPTH	180 mm
PRODUCT HEIGHT	245 mm
PRODUCT WIDTH	105 mm
PRODUCT WEIGHT	2.385 kg
COMPLIANCES	RoHS conform
CERTIFICATIONS	IEC/EN 60947 IEC

Additional information

FUNCTIONS

Voltage release optional
Disconnectors/main
switches
Interlockable

Delivery programme

ACCESSORIES REQUIRED NZM2-XSVS socket base

AMPERAGE RATING 160 A

APPLICATION Use in unearthed supply systems at 690 V

CIRCUIT BREAKER FRAME TYPE N2

FEATURES
Version as main switch
Version as emergency stop installation
Version as maintenance-/service switch
Motor drive optional

NUMBER OF POLES Three-pole

SPECIAL FEATURES

- Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113.
- Isolating characteristics to IEC/EN 60947-3 and VDE 0660.
- Busbar tag shroud to VDE 0160 Part 100.
- Rated current = rated uninterrupted current: 160 A
- The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...Icw = 1.5 kA

TYPE Switch-disconnector

Design verification to IEC/EN 61439

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.
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	Does not apply, since the

Design verification to IEC/EN 61439 - technical data

AMBIENT OPERATING TEMPERATURE - MAX	70 °C
AMBIENT STORAGE TEMPERATURE - MAX	70 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MIN	40 °C
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT	19.66 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	160 A

AGAINST ELECTRIC SHOCK	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.

Technical data - electrical

AMPERAGE RATING	160 A
DIRECTION OF INCOMING SUPPLY	As required
ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
HANDLE TYPE	Rocker lever
ISOLATION	500 V AC (between auxiliary contacts and main contacts) 300 V AC (between the auxiliary contacts)
LIFESPAN, ELECTRICAL	7500 operations at 415 V AC-3 7500 operations at 690 V AC-1 5000 operations at 690 V AC-3 10000 operations at 400 V AC-1 10000 operations at 415 V AC-1 7500 operations at 400 V AC-3
NUMBER OF OPERATIONS PER HOUR - MAX	120
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
RATED CONDITIONAL SHORT-CIRCUIT CURRENT WITH BACK-UP FUSE	80 kA at 690 V 100 kA at 400/415 V PN2(N2)-160...250: 250 AgGgL
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 IMPULSE WITHSTAND VOLTAGE (UIMP) AT AUXILIARY CONTACTS	6000 V
RATED IMPULSE WITHSTAND VOLTAGE (UIMP) AT MAIN CONTACTS	8000 V
RATED INSULATION VOLTAGE (UI)	690 V
RATED OPERATING FREQUENCY	50 Hz
RATED OPERATING POWER AT AC-23, 400 V	90 kW

Technical data - mechanical

CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
DEGREE OF PROTECTION	IP20 (basic protection type, in the area of the HMI devices) Other
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)
HANDLE COLOR	Black
LIFESPAN, MECHANICAL	20000 operations
MOUNTING METHOD	Ground mounting Intermediate mounting Plug-in unit Built-in device plug-in technique Distribution board installation
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
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)
SPECIAL FEATURES	- Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113. - Isolating characteristics to IEC/EN 60947-3 and VDE 0660.

RATED OPERATING VOLTAGE (UE) AT AC - MAX	690 V
RATED OPERATIONAL CURRENT	160 A (415 V AC-22/23A, making and breaking capacity) 160 A (690 V AC-22/23A, making and breaking capacity)
RATED SHORT-CIRCUIT MAKING CAPACITY ICM AT 690 V, 50/60 HZ	5.5 kA
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
SHORT-CIRCUIT PROTECTIVE DEVICE FUSES - MAX	250 A gL
VOLTAGE RATING	690 V - 690 V

	• Busbar tag shroud to VDE 0160 Part 100. • Rated current = rated uninterrupted current: 160 A • The rated short-time withstand current for PN2/N2 in conjunction with earth-fault release NZM2-4-XFI...Icw = 1.5 kA
SWITCH POSITIONS	I, +, 0

Technical data - mechanical - terminals

TERMINAL CAPACITY (ALUMINUM SOLID CONDUCTOR/CABLE)	10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (1x) at tunnel terminal 10 mm ² - 16 mm ² (2x) direct at switch rear-side connection
TERMINAL CAPACITY (ALUMINUM STRANDED CONDUCTOR/CABLE)	25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal
TERMINAL CAPACITY (COPPER BUSBAR)	Min. 16 mm x 5 mm direct at switch rear-side connection Max. 24 mm x 8 mm direct at switch rear-side connection M8 at rear-side screw connection
TERMINAL CAPACITY (COPPER SOLID CONDUCTOR/CABLE)	6 mm ² - 16 mm ² (2x) at box terminal 16 mm ² (1x) at tunnel 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 10 mm ² - 16 mm ² (1x) at box terminal
TERMINAL CAPACITY (COPPER STRANDED CONDUCTOR/CABLE)	25 mm ² - 185 mm ² (1x) at box terminal 25 mm ² - 185 mm ² (1x) at 1-hole tunnel terminal 25 mm ² - 185 mm ² (1x) direct at switch rear-side connection 25 mm ² - 70 mm ² (2x) at box terminal 25 mm ² - 70 mm ² (2x) direct at switch rear-side connection
TERMINAL CAPACITY (COPPER STRIP)	Max. 10 segments of 16 mm x 0.8 mm at box terminal Max. 10 segments of 24 mm x 0.8 mm at rear-side connection (punched) Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched) Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 8 segments of 15.5 mm x 0.8 mm (2x) at box

Resources

BROCHURES	eaton-digital-nzm-brochure-br013003en-en-us.pdf eaton-feerum-the-whole-grain-solution-success-story-en-us.pdf
CATALOGUES	eaton-digital-nzm-catalog-ca013003en-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-switch-disconnector-declaration-of-conformity-eu250126en.pdf
DRAWINGS	eaton-circuit-breaker-nzm-mccb-dimensions-019.eps eaton-circuit-breaker-switch-nzm-mccb-dimensions-017.eps eaton-circuit-breaker-switch-nzm-mccb-3d-drawing.eps
ECAD MODEL	DA-CE-ETN.N2-160-SVE
INSTALLATION VIDEOS	The new digital NZM Range Introduction of the new digital circuit breaker NZM
	DA-CS-nzm2 xsve
MCAD MODEL	eaton-molded-case-switches-mcad-drawings-nzm2-xsve.dwg
PEP ECO-PASSPORT	eaton-switch-disconnectors-pep-eato-00196-v0101-en.pdf
TECHNICAL DATA SHEETS	eaton-nzm-technical-information-sheet

terminal

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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