

Switch-disconnector 3p 160A +pull out



Part no. N2-160-SVE
113733
EL Number 4357992
(Norway)

General specifications		
Product name		Eaton Moeller series NZM switch-disconnector
Part no.		N2-160-SVE
EAN		4015081132737
Product Length/Depth		180 millimetre
Product height		245 millimetre
Product width		105 millimetre
Product weight		2.385 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
Accessories required		NZM2-XSVS socket base
Number of poles		Three-pole
Amperage Rating		160 A
Features		Version as main switch Version as emergency stop installation Version as maintenance-/service switch Motor drive optional
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...lcv = 1.5 kA
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		160 A (415 V AC-22/23A, making and breaking capacity) 160 A (690 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		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 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		90 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		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
Overvoltage category		III
Pollution degree		3
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
Direction of incoming supply		As required
Technical Data - Mechanical		
Mounting Method		Ground mounting Intermediate mounting Plug-in unit Built-in device plug-in technique Distribution board installation
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)
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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
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
Lifespan, mechanical		20000 operations
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 terminal
Design verification as per IEC/EN 61439 - technical data		
Rated operational current for specified heat dissipation (In)		160 A
Equipment heat dissipation, current-dependent		19.66 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		Voltage release optional Disconnectors/main switches Interlockable

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 (ecl@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	160
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 Icw		kA	3.5
Rated operation power at AC-23, 400 V		kW	90
Switching power at 400 V		kW	0

Conditioned rated short-circuit current Iq		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 plug-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	245
Depth		mm	180
Width in number of modular spacings			