

Switch-disconnector 4p 400A + withdrawable unit



Part no. **N3-4-400-AVE**
110872

General specifications	
Product name	Eaton Moeller series NZM switch-disconnector
Part no.	N3-4-400-AVE
EAN	4015081104017
Product Length/Depth	260 millimetre
Product height	346 millimetre
Product width	230 millimetre
Product weight	20.241 kilogram
Compliances	RoHS conform
Certifications	IEC IEC/EN 60947
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	N3
Accessories required	NZM3-4-XAVS socket base
Number of poles	Four-pole
Amperage Rating	400 A
Features	Version as emergency stop installation Motor drive optional Version as main switch Version as maintenance-/service switch
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: 400 A
Technical Data - Electrical	
Voltage rating	690 V - 690 V
Rated operating voltage (Ue) at AC - max	690 V
Rated insulation voltage (Ui)	1000 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	630 A (690 V AC-22/23A, making and breaking capacity) 630 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	80 kA at 690 V PN3(N3)-400...630: 630 AgGgL 100 kA at 400/415 V
Rated conditional short-circuit current with downstream fuse	PN3(N3)-400...630: 630 AgGgL 100 kA at 400/415 V 80 kA at 690 V
Rated short-time withstand current (Icw)	12 kA
Rated short-time withstand current (t = 0.3 s)	12 kA
Rated short-time withstand current (t = 1 s)	12 kA
Rated operating frequency	50 Hz
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz	25 kA
Rated operating power at AC-3, 400 V	0 kW
Rated operating power at AC-23, 400 V	200 kW

Switching power at 400 V		0 kW
Short-circuit protective device fuses - max		630 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		60
Handle type		Rocker lever
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		5000 operations at 400 V AC-1 2000 operations at 690 V AC-3 5000 operations at 415 V AC-1 3000 operations at 690 V AC-1 3000 operations at 400 V AC-3 3000 operations at 415 V AC-3
Direction of incoming supply		As required
Technical Data - Mechanical		
Mounting Method		Withdrawable Ground mounting Intermediate mounting Distribution board installation Built-in device slide-in technique (withdrawable)
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) IP20 IP40 (with insulating surround)
Degree of protection (terminations)		IP10 (tunnel terminal) IP00 (terminations, phase isolator and band 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: 400 A
Lifespan, mechanical		15000 operations
Technical Data - Mechanical - Terminals		
Terminal capacity (aluminum solid conductor/cable)		16 mm ² (1x) at tunnel terminal 16 mm ² (1x) direct at switch rear-side connection 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 up to 240 mm ² depending on the cable manufacturer.
Terminal capacity (copper busbar)		Min. 20 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		16 mm ² (2x) at box terminal 300 mm ² (2x) at rear-side width extension 16 mm ² (1x) direct at switch rear-side connection 16 mm ² (2x) direct at switch rear-side connection
Terminal capacity (copper stranded conductor/cable)		50 mm ² - 240 mm ² (1x) at 2-hole tunnel terminal 50 mm ² - 240 mm ² (2x) at 2-hole tunnel terminal 25 mm ² - 120 mm ² (2x) at box terminal 25 mm ² - 120 mm ² (1x) 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 25 mm ² - 120 mm ² (2x) direct at switch rear-side connection
Terminal capacity (copper strip)		Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Max. 8 segments of 24 mm x 1 mm (2x) at box terminal 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Min. 6 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)		400 A
Equipment heat dissipation, current-dependent		43.2 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 Voltage release optional 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 (ec1@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	
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	12
Rated operation power at AC-23, 400 V	kW	200
Switching power at 400 V	kW	0
Conditioned rated short-circuit current Iq	kA	0

Number of poles			4
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 slide-in technique (withdrawable)
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	230
Height		mm	346
Depth		mm	260
Width in number of modular spacings			