DATASHEET - PN1-100

Switch-disconnector 3p, 100A

Part no.	**PN1-100**
	259141
EL Number (Norway)	**4358713**

Powering Business Worldwide™

General specifications

Product name	Eaton Moeller series NZM switch-disconnector
Part no.	PN1-100
EAN	4015082591410
Product Length/Depth	88 millimetre
Product height	145 millimetre
Product width	90 millimetre
Product weight	0.849 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	PN1
Number of poles	Three-pole
Amperage Rating	100 A
Features	Version as emergency stop installation Version as maintenance-/service switch Version as main 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: 100 A

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	6000 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 gG/gL 100 kA at 400/415 V
Rated conditional short-circuit current with downstream fuse	100 kA at 400/415 V 10 kA at 690 V 100 gG/gL
Rated short-time withstand current (Icw)	2 kA
Rated short-time withstand current (t = 0.3 s)	2 kA
Rated short-time withstand current (t = 1 s)	2 kA
Rated operating frequency	50 Hz
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz	2.8 kA
Rated operating power at AC-3, 400 V	0 kW
Rated operating power at AC-23, 400 V	55 kW
Switching power at 400 V	0 kW

Short-circuit protective device fuses - max	125 A gL
Electrical connection type of main circuit	Frame clamp
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	1000 operations at 400 V AC-23A 7500 operations at 690 V AC-1 10000 operations at 400 V AC-1 10000 operations at 415 V AC-1 1000 operations at 415 V AC-23A 1000 operations at 690 V AC-23A
Direction of incoming supply	As required

Technical Data - Mechanical

Mounting Method	Built-in device fixed built-in technique Distribution board installation Fixed Intermediate mounting Ground mounting
Degree of protection	IP20 (basic protection type, in the area of the HMI devices) Other
Degree of protection (IP), front side	IP20 IP40 (with insulating surround) IP66 (with door coupling rotary handle)
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: 100 A
Lifespan, mechanical	20000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Box terminal
Optional terminals	Connection on rear. Screw terminal. Tunnel terminal
Terminal capacity (aluminum solid conductor/cable)	10 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 16 mm^2 (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)	25 mm^2 - 95 mm^2 (1x) at 1-hole tunnel terminal
Terminal capacity (copper busbar)	Min. 12 mm x 5 mm direct at switch rear-side connection Max. 16 mm x 5 mm direct at switch rear-side connection M6 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)	10 mm^2 - 16 mm^2 (1x) at box terminal 10 mm^2 - 16 mm^2 (1x) direct at switch rear-side connection 6 mm^2 - 16 mm^2 (2x) at box terminal 6 mm^2 - 16 mm^2 (2x) direct at switch rear-side connection 16 mm^2 (1x) at tunnel terminal
Terminal capacity (copper stranded conductor/cable)	25 mm^2 (2x) direct at switch rear-side connection 25 mm^2 - 70 mm^2 (1x) direct at switch rear-side connection 6 mm^2 - 25 mm^2 (2x) at box terminal 10 mm^2 - 70 mm^2 (1x) at box terminal Terminal capacity hint: Up to 95 mm^2 can be connected depending on the cable manufacturer 25 mm^2 - 95 mm^2 (1x) at 1-hole tunnel terminal
Terminal capacity (copper strip)	Max. 9 segments of 9 mm x 0.8 mm at box terminal Min. 2 segments of 9 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)		100 A
Equipment heat dissipation, current-dependent		11.4 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 Interlockable

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Switch disconnector (low voltage) (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (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	
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	2
Rated operation power at AC-23, 400 V	kW	55
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			No
Motor drive integrated			No
Voltage release optional			No
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			Frame clamp
With pre-assembled cabling			No
Degree of protection (IP), front side			IP20
Degree of protection (NEMA)			Other
Width		mm	90
Height		mm	145
Depth		mm	88
Width in number of modular spacings			

© 04/2023 by Eaton Industries GmbH