

Switch-disconnector, 4 p, 160A, frame size 1



Part no. LN1-4-160-I
112001

General specifications		
Product name		Eaton Moeller series Power Defense molded case circuit-breaker
Part no.		LN1-4-160-I
EAN		4015081115495
Product Length/Depth		88 millimetre
Product height		145 millimetre
Product width		120 millimetre
Product weight		1.164 kilogram
Compliances		RoHS conform
Certifications		IEC
Product Tradename		Power Defense
Product Type		Molded case circuit breaker
Product Sub Type		None
Delivery program		
Application		Use in unearthed supply systems at 690 V
Type		Switch-disconnector
Circuit breaker frame type		LN1
Number of poles		Four-pole
Amperage Rating		160 A
Features		Version as maintenance-/service switch Version as emergency stop installation Motor drive optional 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: 160 A
Technical Data - Electrical		
Voltage rating		690 V - 690 V
Rated operating voltage (Ue) at AC - max		400 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)		100 kA
Rated operational current		160 A (690 V AC-1, making and breaking capacity) 160 A (415 V AC-1, making and breaking capacity) 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 conditional short-circuit current with back-up fuse		PN1(N1)-63...125: 125 AgGgL; PN1(N1)-160: 160 AgGgL 100 kA at 400/415 V 80 kA at 690 V
Rated conditional short-circuit current with downstream fuse		100 kA at 400/415 V 10 kA at 690 V PN1(N1)-63...125: 125 AgGgL; PN1(N1)-160: 160 AgGgL
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		90 kW
Switching power at 400 V		0 kW
Short-circuit total breaktime		< 10 ms

Short-circuit protective device fuses - max		160 A gL
Electrical connection type of main circuit		Frame clamp
Number of operations per hour - max		120
Handle type		Rocker lever
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		7500 operations at 400 V AC-3 10000 operations at 400 V AC-1 5000 operations at 690 V AC-3 7500 operations at 690 V AC-1 10000 operations at 415 V AC-1 7500 operations at 415 V AC-3
Technical Data - Mechanical		
Mounting Method		Distribution board installation Intermediate mounting Ground mounting Built-in device fixed built-in technique Fixed
Degree of protection (IP), front side		IP20
Number of auxiliary contacts (change-over contacts)		0
Number of auxiliary contacts (normally closed contacts)		0
Number of auxiliary contacts (normally open contacts)		0
Handle color		Gray
Switch positions		I, +, 0
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
Lifespan, mechanical		20000 operations
Technical Data - Mechanical - Terminals		
Standard terminals		Box terminal
Terminal capacity (control cable)		0.75 mm ² - 2.5 mm ² (1x) 0.75 mm ² - 1.5 mm ² (2x)
Terminal capacity (aluminum solid conductor/cable)		16 mm ² (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)		25 mm ² - 95 mm ² (1x) at tunnel terminal
Terminal capacity (copper busbar)		Min. 12 mm x 5 mm direct at switch rear-side connection M6 at rear-side screw connection Max. 16 mm x 5 mm direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)		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 6 mm ² - 16 mm ² (2x) at box terminal 10 mm ² - 16 mm ² (1x) at box terminal 16 mm ² (1x) at tunnel terminal
Terminal capacity (copper stranded conductor/cable)		25 mm ² (2x) at box terminal 25 mm ² (2x) direct at switch rear-side connection 25 mm ² - 70 mm ² (1x) at box terminal 25 mm ² - 95 mm ² (1x) at tunnel terminal 25 mm ² - 70 mm ² (1x) direct at switch rear-side connection
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 (I _n)		160 A
Equipment heat dissipation, current-dependent		29.18 W
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