

Circuit-breaker, 4 p, 400A



Part no. LZMN3-4-A400-I  
116474

General specifications		
Product name		Eaton Moeller series Power Defense molded case circuit-breaker
Part no.		LZMN3-4-A400-I
EAN		4015081162161
Product Length/Depth		159 millimetre
Product height		275 millimetre
Product width		185 millimetre
Product weight		7.3 kilogram
Compliances		RoHS conform
Certifications		IEC VDE 0660 IEC/EN 60947
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		Circuit breaker
Circuit breaker frame type		LZM3
Number of poles		Four-pole
Amperage Rating		400 A
Release system		Thermomagnetic release
Features		Motor drive optional Protection unit
Special features		Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity I <sub>cn</sub> ) Rated current = rated uninterrupted current: 400 A Set value in neutral conductor is synchronous with set value I <sub>r</sub> of main pole.
Technical Data - Electrical		
Voltage rating		690 V - 690 V
Rated insulation voltage (U <sub>i</sub> )		1000 V AC
Rated impulse withstand voltage (U <sub>imp</sub> ) at auxiliary contacts		6000 V
Rated impulse withstand voltage (U <sub>imp</sub> ) at main contacts		8000 V
Current rating of neutral conductor		200% of phase conductor
Rated operational current		630 A (380/400 V AC-1, making and breaking capacity) 630 A (690 V AC-1, making and breaking capacity) 500 A (415 V AC-1, making and breaking capacity) 500 A (500 V DC-1, making and breaking capacity) 400 A (660-690 V AC-3, making and breaking capacity) 500 A (500 V DC-3, making and breaking capacity) 400 A (415 V AC-3, making and breaking capacity) 500 A (750 V DC-1, making and breaking capacity) 500 A (750 V DC-3, making and breaking capacity)
Rated short-time withstand current (t = 0.3 s)		3.3 kA
Rated short-time withstand current (t = 1 s)		3.3 kA
Instantaneous current setting (I <sub>i</sub> ) - min		2400 A
Instantaneous current setting (I <sub>i</sub> ) - max		4000 A
Overload current setting (I <sub>r</sub> )		320 A - 400 A
Overload current setting (I <sub>r</sub> ) - min		320 A
Overload current setting (I <sub>r</sub> ) - max		400 A
Short delay current setting (I <sub>sd</sub> ) - min		0 A
Short delay current setting (I <sub>sd</sub> ) - max		0 A
Short-circuit release non-delayed setting - min		2400 A
Short-circuit release non-delayed setting - max		4000 A

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz		85 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz		50 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz		35 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz		13 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz		187 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz		105 kA
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz		74 kA
Rated short-circuit making capacity Icm at 525 V, 50/60 Hz		53 kA
Rated short-circuit making capacity Icm at 690 V, 50/60 Hz		40 kA
Short-circuit total breaktime		< 10 ms
Electrical connection type of main circuit		Screw connection
Isolation		300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main contacts)
Number of operations per hour - max		60
Handle type		Rocker lever
Utilization category		A (IEC/EN 60947-2)
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		2000 operations at 400 V AC-3 5000 operations at 415 V AC-1 2000 operations at 415 V AC-3 2000 operations at 750 V DC-3 3000 operations at 690 V AC-1 5000 operations at 400 V AC-1 5000 operations at 500 V DC-1 2000 operations at 500 V DC-3 2000 operations at 690 V AC-3 5000 operations at 750 V DC-1
Direction of incoming supply		As required
<b>Technical Data - Mechanical</b>		
Mounting Method		Built-in device fixed built-in technique Fixed
Degree of protection		IP20 In the area of the HMI devices: IP20 (basic protection type)
Degree of protection (IP), front side		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
Position of connection for main current circuit		Front side
Climatic proofing		Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Special features		Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit breaker (Rated short-circuit breaking capacity Icn) Rated current = rated uninterrupted current: 400 A Set value in neutral conductor is synchronous with set value Ir of main pole.
Lifespan, mechanical		15000 operations
<b>Technical Data - Mechanical - Terminals</b>		
Standard terminals		Screw terminal
Terminal capacity (copper busbar)		M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		16 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal
<b>Design verification as per IEC/EN 61439 - technical data</b>		
Rated operational current for specified heat dissipation (In)		400 A
Equipment heat dissipation, current-dependent		96.48 W
<b>Design verification as per IEC/EN 61439</b>		
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.
<b>Additional information</b>			
Functions			System and cable protection