

DATASHEET - LZMC2-A300-I



Circuit-breaker, 3 p, 300A

Part no. LZMC2-A300-I
111941

General specifications		
Product name		Eaton Moeller series Power Defense molded case circuit-breaker
Part no.		LZMC2-A300-I
EAN		4015081114894
Product Length/Depth		142 millimetre
Product height		185 millimetre
Product width		105 millimetre
Product weight		2.345 kilogram
Compliances		RoHS conform
Certifications		IEC/EN 60947 VDE 0660 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		Circuit breaker
Circuit breaker frame type		LZM2
Number of poles		Three-pole
Amperage Rating		300 A
Release system		Thermomagnetic release
Features		Motor drive optional Protection unit
Special features		Rated current = rated uninterrupted current: 300 A 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 _{cn})
Technical Data - Electrical		
Voltage rating		690 V - 690 V
Rated insulation voltage (U _i)		690 V AC
Rated impulse withstand voltage (U _{imp}) at auxiliary contacts		6000 V
Rated impulse withstand voltage (U _{imp}) at main contacts		8000 V
Rated operational current		300 A (415 V AC-3, making and breaking capacity) 300 A (380/400 V AC-1, making and breaking capacity) 300 A (690 V AC-1, making and breaking capacity) 300 A (660-690 V AC-3, making and breaking capacity) 300 A (415 V AC-1, making and breaking capacity)
Instantaneous current setting (I _i) - min		2000 A
Instantaneous current setting (I _i) - max		2500 A
Overload current setting (I _r) - min		240 A
Overload current setting (I _r) - max		300 A
Short delay current setting (I _{sd}) - min		0 A
Short delay current setting (I _{sd}) - max		0 A
Short-circuit release delayed setting - min		1200 A
Short-circuit release delayed setting - max		2490 A
Short-circuit release non-delayed setting - min		1800 A
Short-circuit release non-delayed setting - max		3000 A
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 230 V, 50/60 Hz		55 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz		36 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 440 V, 50/60 Hz		22.5 kA
Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 525 V, 50/60 Hz		3 kA

Rated short-circuit making capacity I _{cm} at 240 V, 50/60 Hz		121 kA
Rated short-circuit making capacity I _{cm} at 400/415 V, 50/60 Hz		76 kA
Rated short-circuit making capacity I _{cm} at 440 V, 50/60 Hz		63 kA
Rated short-circuit making capacity I _{cm} at 525 V, 50/60 Hz		24 kA
Rated short-circuit making capacity I _{cm} at 690 V, 50/60 Hz		14 kA
Short-circuit total breaktime		< 10 ms
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
Utilization category		A (IEC/EN 60947-2)
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		7500 operations at 690 V AC-1 6500 operations at 415 V AC-3 10000 operations at 400 V AC-1 7500 operations at 415 V AC-1
Direction of incoming supply		As required
Technical Data - Mechanical		
Mounting Method		Fixed Built-in device fixed built-in technique DIN rail (top hat rail) mounting optional
Degree of protection		IP20 In the area of the HMI devices: IP20 (basic protection type)
Degree of protection (IP), front side		IP66 (with door coupling rotary handle) 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
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		Rated current = rated uninterrupted current: 300 A 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 _{cn})
Lifespan, mechanical		20000 operations
Technical Data - Mechanical - Terminals		
Standard terminals		Screw 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 - 185 mm ² (1x) at tunnel terminal
Terminal capacity (copper busbar)		Min. 16 mm x 5 mm direct at switch rear-side connection Max. 20 mm x 5 mm direct at switch rear-side connection M8 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		4 mm ² - 16 mm ² (2x) direct at switch rear-side connection 4 mm ² - 16 mm ² (2x) at box terminal 16 mm ² (1x) at tunnel terminal 4 mm ² - 16 mm ² (1x) direct at switch rear-side connection 4 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) direct at switch rear-side connection 25 mm ² - 185 mm ² (1x) at tunnel terminal 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 Min. 2 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 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
Design verification as per IEC/EN 61439 - technical data		

Rated operational current for specified heat dissipation (In)		300 A
Equipment heat dissipation, current-dependent		83.7 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		System and cable protection