DATASHEET - LZMN3-A500-I

Circuit-breaker, 3 p, 500A

Part no. **LZMN3-A500-I**
111968

Product name	Eaton Moeller series Power Defense molded case circuit-breaker
Part no.	LZMN3-A500-I
EAN	4015081115167
Product Length/Depth	166 millimetre
Product height	275 millimetre
Product width	140 millimetre
Product weight	5.8 kilogram
Compliances	RoHS conform
Certifications	VDE 0660 IEC IEC/EN 60947
Product Tradename	Power Defense
Product Type	Molded case circuit breaker
Product Sub Type	None
Application	Use in unearthed supply systems at 690 V
Type	Circuit breaker
Circuit breaker frame type	LZM3
Number of poles	Three-pole
Amperage Rating	500 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 Icn) Rated current = rated uninterrupted current: 500 A
Voltage rating	690 V - 690 V
Rated insulation voltage (Ui)	1000 V AC
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	8000 V
Rated operational current	500 A (500 V DC-1, making and breaking capacity) 500 A (750 V DC-3, making and breaking capacity) 500 A (750 V DC-1, making and breaking capacity) 630 A (380/400 V AC-1, making and breaking capacity) 500 A (500 V DC-3, making and breaking capacity) 630 A (690 V AC-1, making and breaking capacity) 450 A (415 V AC-3, making and breaking capacity) 450 A (660-690 V AC-3, making and breaking capacity) 500 A (415 V AC-1, 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 (Ii) - min	3000 A
Instantaneous current setting (Ii) - max	5000 A
Overload current setting (Ir) - min	400 A
Overload current setting (Ir) - max	500 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - max	0 A
Short-circuit release non-delayed setting - min	3000 A
Short-circuit release non-delayed setting - max	5000 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	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
Utilization category	A (IEC/EN 60947-2)
Overvoltage category	III
Pollution degree	3
Lifespan, electrical	2000 operations at 415 V AC-3 2000 operations at 750 V DC-3 5000 operations at 400 V AC-1 5000 operations at 415 V AC-1 5000 operations at 500 V DC-1 2000 operations at 400 V AC-3 2000 operations at 500 V DC-3 2000 operations at 690 V AC-3 3000 operations at 690 V AC-1 5000 operations at 750 V DC-1
Direction of incoming supply	As required
Mounting Method	Built-in device fixed built-in technique Fixed
Degree of protection	In the area of the HMI devices: IP20 (basic protection type) IP20
Degree of protection (IP), front side	IP66 (with door coupling rotary handle) IP40 (with insulating surround)
Degree of protection (terminations)	IP00 (terminations, phase isolator and band terminal) IP10 (tunnel 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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
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: 500 A
Lifespan, mechanical	15000 operations
Standard terminals	Screw terminal
Terminal capacity (copper busbar)	M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)	16 mm^2 - 185 mm^2 (1x) at tunnel terminal
Rated operational current for specified heat dissipation (In)	500 A
Equipment heat dissipation, current-dependent	93 W
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.
Functions			Photovoltaic applications System and cable protection