

DATASHEET - LZMC1-A160-I



Circuit-breaker, 3 p, 160A

Part no. LZMC1-A160-I
111897

General specifications	
Product name	Eaton Moeller series Power Defense molded case circuit-breaker
Part no.	LZMC1-A160-I
EAN	4015081114450
Product Length/Depth	88 millimetre
Product height	145 millimetre
Product width	90 millimetre
Product weight	1.014 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	LZM1
Number of poles	Three-pole
Amperage Rating	160 A
Release system	Thermomagnetic release
Features	Protection unit
Special features	Rated current = rated uninterrupted current: 160 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	6000 V
Rated operational current	125 A (415 V AC-1, making and breaking capacity) 160 A (690 V AC-1, making and breaking capacity) 160 A (415 V AC-3, making and breaking capacity) 160 A (660-690 V AC-3, making and breaking capacity) 160 A (380/400 V AC-1, making and breaking capacity)
Instantaneous current setting (I _i) - min	960 A
Instantaneous current setting (I _i) - max	1600 A
Overload current setting (I _r) - min	125 A
Overload current setting (I _r) - max	160 A
Short delay current setting (I _{sd}) - min	0 A
Short delay current setting (I _{sd}) - max	0 A
Short-circuit release non-delayed setting - min	1280 A
Short-circuit release non-delayed setting - max	1280 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	6 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		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
Utilization category		A (IEC/EN 60947-2)
Overvoltage category		III
Pollution degree		3
Lifespan, electrical		10000 operations at 415 V AC-1 10000 operations at 400 V AC-1 7500 operations at 690 V AC-1 7500 operations at 415 V AC-3
Direction of incoming supply		As required
Technical Data - Mechanical		
Mounting Method		Built-in device fixed built-in technique Fixed 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)		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		Rated current = rated uninterrupted current: 160 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		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)		Max. 16 mm x 5 mm direct at switch rear-side connection Min. 12 mm x 5 mm direct at switch rear-side connection M8 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 10 mm ² - 16 mm ² (1x) at box terminal 16 mm ² - 95 mm ² (1x) at tunnel terminal 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection 6 mm ² - 16 mm ² (2x) at box terminal
Terminal capacity (copper stranded conductor/cable)		25 mm ² - 95 mm ² (1x) at tunnel terminal 25 mm ² (2x) direct at switch rear-side connection 25 mm ² (2x) at box terminal 25 mm ² - 70 mm ² (1x) at box terminal 25 mm ² - 70 mm ² (1x) direct at switch rear-side connection
Terminal capacity (copper strip)		Min. 2 segments of 9 mm x 0.8 mm at box terminal Max. 9 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		36.1 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