

Circuit-breaker, 3 p, 630A



Part no. LZMN3-AE630-I  
111969

General specifications	
Product name	Eaton Moeller series Power Defense molded case circuit-breaker
Part no.	LZMN3-AE630-I
EAN	4015081115174
Product Length/Depth	166 millimetre
Product height	275 millimetre
Product width	140 millimetre
Product weight	7.097 kilogram
Compliances	RoHS conform
Certifications	VDE 0660 IEC/EN 60947 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	LZM3
Number of poles	Three-pole
Amperage Rating	630 A
Release system	Electronic release
Features	Protection unit Motor drive optional
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> ) R.m.s. value measurement and "thermal memory" Rated current = rated uninterrupted current: 630 A
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
Rated operational current	500 A (750 V DC-1, making and breaking capacity) 500 A (500 V DC-3, making and breaking capacity) 630 A (380/400 V AC-1, making and breaking capacity) 500 A (415 V AC-1, making and breaking capacity) 500 A (750 V DC-3, making and breaking capacity) 630 A (690 V AC-1, making and breaking capacity) 500 A (500 V DC-1, making and breaking capacity) 450 A (660-690 V AC-3, making and breaking capacity) 450 A (415 V AC-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	1260 A
Instantaneous current setting (I <sub>i</sub> ) - max	5040 A
Overload current setting (I <sub>r</sub> ) - min	315 A
Overload current setting (I <sub>r</sub> ) - max	630 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	1260 A
Short-circuit release non-delayed setting - max	5040 A
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 230 V, 50/60 Hz	85 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (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 415 V AC-3 5000 operations at 500 V DC-1 2000 operations at 500 V DC-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 750 V DC-1 2000 operations at 400 V AC-3 2000 operations at 690 V AC-3 5000 operations at 415 V AC-1
Direction of incoming supply		As required
<b>Technical Data - Mechanical</b>		
Mounting Method		Fixed Built-in device fixed built-in technique
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, 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) R.m.s. value measurement and "thermal memory" Rated current = rated uninterrupted current: 630 A
Lifespan, mechanical		15000 operations
<b>Technical Data - Mechanical - Terminals</b>		
Standard terminals		Screw terminal
Terminal capacity (control cable)		0.75 mm <sup>2</sup> - 1.5 mm <sup>2</sup> (2x) 0.75 mm <sup>2</sup> - 2.5 mm <sup>2</sup> (1x)
Terminal capacity (aluminum solid conductor/cable)		16 mm <sup>2</sup> (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)		50 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at 2-hole tunnel terminal 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal 50 mm <sup>2</sup> - 240 mm <sup>2</sup> (2x) at 2-hole tunnel terminal
Terminal capacity (copper busbar)		M10 at rear-side screw connection Max. 30 mm x 10 mm + 30 mm x 5 mm direct at switch rear-side connection Max. 10 mm x 50 mm (2x) at rear-side width extension Min. 20 mm x 5 mm direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)		16 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal 16 mm <sup>2</sup> (1x) direct at switch rear-side connection 300 mm <sup>2</sup> (2x) at rear-side width extension 16 mm <sup>2</sup> (2x) direct at switch rear-side connection 16 mm <sup>2</sup> (2x) at box terminal

Terminal capacity (copper stranded conductor/cable)		25 mm <sup>2</sup> - 240 mm <sup>2</sup> (2x) direct at switch rear-side connection 25 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) direct at switch rear-side connection 35 mm <sup>2</sup> - 240 mm <sup>2</sup> (1x) at box terminal 25 mm <sup>2</sup> - 185 mm <sup>2</sup> (1x) at tunnel terminal 25 mm <sup>2</sup> - 120 mm <sup>2</sup> (2x) at box terminal
Terminal capacity (copper strip)		Min. 6 segments of 16 mm x 0.8 mm at box terminal 10 segments of 50 mm x 1 mm (2x) at rear-side width extension Min. 6 segments of 16 mm x 0.8 mm at rear-side connection (punched) Max. 10 segments of 32 mm x 1 mm + 5 segments of 32 mm x 1 mm at rear-side connection (punched) Max. 10 segments of 24 mm x 1 mm + 5 segments of 24 mm x 1 mm Max. 8 segments of 24 mm x 1 mm (2x) at box terminal
<b>Design verification as per IEC/EN 61439 - technical data</b>		
Rated operational current for specified heat dissipation (I <sub>n</sub> )		630 A
Equipment heat dissipation, current-dependent		119.07 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