DATASHEET - LZMN3-AE630-I

Circuit-breaker, 3 p, 630A

Part no. **LZMN3-AE630-I**
111969

Powering Business Worldwide™

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 Icn) 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 (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 (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 (Ii) - min	1260 A
Instantaneous current setting (Ii) - max	5040 A
Overload current setting (Ir) - min	315 A
Overload current setting (Ir) - max	630 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - 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 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 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

Technical Data - Mechanical

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

Technical Data - Mechanical - Terminals

Standard terminals	Screw terminal
Terminal capacity (control cable)	0.75 mm^2 - 1.5 mm^2 (2x) 0.75 mm^2 - 2.5 mm^2 (1x)
Terminal capacity (aluminum solid conductor/cable)	16 mm^2 (1x) at tunnel terminal
Terminal capacity (aluminum stranded conductor/cable)	50 mm^2 - 240 mm^2 (1x) at 2-hole tunnel terminal 25 mm^2 - 185 mm^2 (1x) at tunnel terminal 50 mm^2 - 240 mm^2 (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^2 - 185 mm^2 (1x) at tunnel terminal 16 mm^2 (1x) direct at switch rear-side connection 300 mm^2 (2x) at rear-side width extension 16 mm^2 (2x) direct at switch rear-side connection 16 mm^2 (2x) at box terminal

Terminal capacity (copper stranded conductor/cable)	25 mm^2 - 240 mm^2 (2x) direct at switch rear-side connection 25 mm^2 - 240 mm^2 (1x) direct at switch rear-side connection 35 mm^2 - 240 mm^2 (1x) at box terminal 25 mm^2 - 185 mm^2 (1x) at tunnel terminal 25 mm^2 - 120 mm^2 (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
Design verification as per IEC/EN 61439 - technical data	
Rated operational current for specified heat dissipation (In)	630 A
Equipment heat dissipation, current-dependent	119.07 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