DATASHEET - LZMC1-A100-I



Circuit-breaker, 3 p, 100A

Part no. **LZMC1-A100-I**
111895

General specifications

Product name	Eaton Moeller series Power Defense molded case circuit-breaker
Part no.	LZMC1-A100-I
EAN	4015081114436
Product Length/Depth	88 millimetre
Product height	145 millimetre
Product width	90 millimetre
Product weight	1.014 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

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	100 A
Release system	Thermomagnetic release
Features	Protection unit
Special features	Rated current = rated uninterrupted current: 100 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 Icn)

Technical Data - Electrical

Voltage rating	690 V - 690 V
Rated insulation voltage (Ui)	690 V AC
Rated impulse withstand voltage (Uimp) at auxiliary contacts	6000 V
Rated impulse withstand voltage (Uimp) at main contacts	6000 V
Rated operational current	125 A (415 V AC-1, making and breaking capacity) 160 A (380/400 V AC-1, making and breaking capacity) 100 A (660-690 V AC-3, making and breaking capacity) 160 A (690 V AC-1, making and breaking capacity) 100 A (415 V AC-3, making and breaking capacity)
Instantaneous current setting (Ii) - min	600 A
Instantaneous current setting (Ii) - max	1000 A
Overload current setting (Ir) - min	80 A
Overload current setting (Ir) - max	100 A
Short delay current setting (Isd) - min	0 A
Short delay current setting (Isd) - max	0 A
Short-circuit release non-delayed setting - min	600 A
Short-circuit release non-delayed setting - max	1000 A
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz	55 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 400/415 V, 50/60 Hz	36 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz	22.5 kA
Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 525 V, 50/60 Hz	6 kA
Rated short-circuit making capacity Icm at 240 V, 50/60 Hz	121 kA
Rated short-circuit making capacity Icm at 400/415 V, 50/60 Hz	76 kA
Rated short-circuit making capacity Icm at 440 V, 50/60 Hz	63 kA

Rated short-circuit making capacity Icm at 525 V, 50/60 Hz	24 kA
Rated short-circuit making capacity Icm 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	7500 operations at 690 V AC-1 10000 operations at 415 V AC-1 7500 operations at 415 V AC-3 5000 operations at 690 V AC-3 10000 operations at 400 V AC-1
Direction of incoming supply	As required

Technical Data - Mechanical

Mounting Method	Fixed DIN rail (top hat rail) mounting optional 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	IP40 (with insulating surround) IP66 (with door coupling rotary handle)
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	Rated current = rated uninterrupted current: 100 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 Icn)
Lifespan, mechanical	20000 operations

Technical Data - Mechanical - Terminals

Standard terminals	Box 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)	25 mm^2 - 95 mm^2 (1x) at tunnel terminal
Terminal capacity (copper busbar)	Min. 12 mm x 5 mm direct at switch rear-side connection M8 at rear-side screw connection Max. 16 mm x 5 mm direct at switch rear-side connection
Terminal capacity (copper solid conductor/cable)	16 mm^2 - 95 mm^2 (1x) at tunnel terminal 10 mm^2 - 16 mm^2 (1x) direct at switch rear-side connection 6 mm^2 - 16 mm^2 (2x) at box terminal 6 mm^2 - 16 mm^2 (2x) direct at switch rear-side connection 10 mm^2 - 16 mm^2 (1x) at box terminal
Terminal capacity (copper stranded conductor/cable)	25 mm^2 - 70 mm^2 (1x) at box terminal 25 mm^2 - 70 mm^2 (1x) direct at switch rear-side connection 25 mm^2 (2x) at box terminal 25 mm^2 - 95 mm^2 (1x) at tunnel terminal 25 mm^2 (2x) direct at switch rear-side connection
Terminal capacity (copper strip)	Max. 9 segments of 9 mm x 0.8 mm at box terminal 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)	100 A
Equipment heat dissipation, current-dependent	21.9 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

Technical data ETIM 6.0

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation prot. (EC000228)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss8.1-27-37-04-09 [AJZ716010])		
Rated permanent current Iu	A	100
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity Icu at 400 V, 50 Hz	kA	36
Overload release current setting	A	80 - 100
Adjustment range short-term delayed short-circuit release	A	0 - 0
Adjustment range undelayed short-circuit release	A	600 - 1000
Integrated earth fault protection		No
Type of electrical connection of main circuit		Frame clamp
Device construction		Built-in device fixed built-in technique
Suitable for DIN rail (top hat rail) mounting		No
DIN rail (top hat rail) mounting optional		Yes
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as change-over contact		0
Switched-off indicator available		No
With under voltage release		No
Number of poles		3
Position of connection for main current circuit		Front side
Type of control element		Rocker lever
Complete device with protection unit		Yes
Motor drive integrated		No
Motor drive optional		No
Degree of protection (IP)		IP20

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