

## Circuit-breaker, 4 p, 20A

**Part no.**                    **LZMC1-4-A20-I**  
**111908**

<b>General specifications</b>	
Product name	Eaton Moeller series Power Defense molded case circuit-breaker
Part no.	LZMC1-4-A20-I
EAN	4015081114566
Product Length/Depth	88 millimetre
Product height	145 millimetre
Product width	120 millimetre
Product weight	1.324 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
<b>Delivery program</b>	
Application	Use in unearthed supply systems at 690 V
Type	Circuit breaker
Circuit breaker frame type	LZM1
Number of poles	Four-pole
Amperage Rating	20 A
Release system	Thermomagnetic release
Features	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 I <sub>cn</sub> ) Rated current = rated uninterrupted current: 20 A Set value in neutral conductor is synchronous with set value I <sub>r</sub> of main pole.
<b>Technical Data - Electrical</b>	
Voltage rating	690 V - 690 V
Rated insulation voltage (U <sub>i</sub> )	690 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	6000 V
Current rating of neutral conductor	200% of phase conductor
Rated operational current	20 A (660-690 V AC-3, making and breaking capacity) 20 A (415 V AC-3, making and breaking capacity) 160 A (690 V AC-1, making and breaking capacity) 125 A (415 V AC-1, making and breaking capacity) 160 A (380/400 V AC-1, making and breaking capacity)
Instantaneous current setting (I <sub>i</sub> ) - min	350 A
Instantaneous current setting (I <sub>i</sub> ) - max	350 A
Overload current setting (I <sub>r</sub> )	15 A - 20 A
Overload current setting (I <sub>r</sub> ) - min	15 A
Overload current setting (I <sub>r</sub> ) - max	20 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	350 A
Short-circuit release non-delayed setting - max	350 A
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 230 V, 50/60 Hz	55 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 400/415 V, 50/60 Hz	36 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 440 V, 50/60 Hz	22.5 kA
Rated short-circuit breaking capacity I <sub>cs</sub> (IEC/EN 60947) at 525 V, 50/60 Hz	6 kA
Rated short-circuit making capacity I <sub>cm</sub> at 240 V, 50/60 Hz	121 kA

Rated short-circuit making capacity I <sub>cm</sub> at 400/415 V, 50/60 Hz		76 kA
Rated short-circuit making capacity I <sub>cm</sub> at 440 V, 50/60 Hz		63 kA
Rated short-circuit making capacity I <sub>cm</sub> at 525 V, 50/60 Hz		24 kA
Rated short-circuit making capacity I <sub>cm</sub> at 690 V, 50/60 Hz		14 kA
Short-circuit total breaktime		< 10 ms
Electrical connection type of main circuit		Frame clamp
Isolation		300 V AC (between the auxiliary contacts) 500 V AC (between auxiliary contacts and main 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 415 V AC-3 7500 operations at 690 V AC-1
Direction of incoming supply		As required
<b>Technical Data - Mechanical</b>		
Mounting Method		Built-in device fixed built-in technique DIN rail (top hat rail) mounting optional Fixed
Degree of protection		In the area of the HMI devices: IP20 (basic protection type) IP20
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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
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> ) Rated current = rated uninterrupted current: 20 A Set value in neutral conductor is synchronous with set value I <sub>r</sub> of main pole.
Lifespan, mechanical		20000 operations
<b>Technical Data - Mechanical - Terminals</b>		
Standard terminals		Box terminal
Terminal capacity (copper busbar)		M8 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		16 mm <sup>2</sup> - 95 mm <sup>2</sup> (1x) at tunnel terminal
Terminal capacity (copper stranded conductor/cable)		25 mm <sup>2</sup> - 70 mm <sup>2</sup> (1x) at box terminal 25 mm <sup>2</sup> (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> )		20 A
Equipment heat dissipation, current-dependent		9.82 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