

DATASHEET - LZMC3-A400-I



Circuit-breaker, 3 p, 400A

Part no. LZMC3-A400-I
111955

General specifications		
Product name		Eaton Moeller series Power Defense molded case circuit-breaker
Part no.		LZMC3-A400-I
EAN		4015081115037
Product Length/Depth		166 millimetre
Product height		275 millimetre
Product width		140 millimetre
Product weight		5.8 kilogram
Compliances		RoHS conform
Certifications		IEC IEC/EN 60947 VDE 0660
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		400 A
Release system		Thermomagnetic release
Features		Motor drive optional Protection unit
Special features		Rated current = rated uninterrupted current: 400 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
Voltage rating (DC)		750 V DC
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 (690 V AC -1, making and breaking capacity) 400 A (660-690 V AC-3, making and breaking capacity) 500 A (380/400 V AC-1, making and breaking capacity) 400 A (415 V AC-3, making and breaking capacity) 500 A (415 V AC-1, 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		2400 A
Instantaneous current setting (Ii) - max		4000 A
Overload current setting (Ir) - min		320 A
Overload current setting (Ir) - max		400 A
Short delay current setting (Isd) - min		0 A
Short delay current setting (Isd) - max		0 A
Short-circuit release non-delayed setting - min		2400 A
Short-circuit release non-delayed setting - max		4000 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		9 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		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 690 V AC-3 3000 operations at 690 V AC-1 2000 operations at 400 V AC-3 5000 operations at 400 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		In the area of the HMI devices: IP20 (basic protection type) IP20
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		Rated current = rated uninterrupted current: 400 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		15000 operations
Technical Data - Mechanical - Terminals		
Standard terminals		Screw terminal
Terminal capacity (copper busbar)		M10 at rear-side screw connection
Terminal capacity (copper solid conductor/cable)		16 mm ² - 185 mm ² (1x) at tunnel terminal
Design verification as per IEC/EN 61439 - technical data		
Rated operational current for specified heat dissipation (In)		400 A
Equipment heat dissipation, current-dependent		72.48 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 (ecI@ss8.1-27-37-04-09 [AJZ716010])		
Rated permanent current I _u	A	400
Rated voltage	V	690 - 690
Rated short-circuit breaking capacity I _{cu} at 400 V, 50 Hz	kA	36
Overload release current setting	A	320 - 400
Adjustment range short-term delayed short-circuit release	A	0 - 0
Adjustment range undelayed short-circuit release	A	2400 - 4000
Integrated earth fault protection		No
Type of electrical connection of main circuit		Screw connection
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		No
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		Yes
Degree of protection (IP)		IP20