

Circuit-breaker, 4 p, 20A

Part no. **LZMB1-4-A20-I**
111868

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| Product name | Eaton Moeller series Power Defense molded case circuit-breaker |
| Part no. | LZMB1-4-A20-I |
| EAN | 4015081114160 |
| Product Length/Depth | 88 millimetre |
| Product height | 145 millimetre |
| Product width | 120 millimetre |
| Product weight | 1.324 kilogram |
| Compliances | RoHS conform |
| Certifications | IEC/EN 60947 VDE 0660 IEC |
| Product Tradename | Power Defense |
| Product Type | Molded case circuit breaker |
| Product Sub Type | None |
| Application | Use in unearthed supply systems at 440 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 _{cn}) Rated current = rated uninterrupted current: 20 A Set value in neutral conductor is synchronous with set value I _r of main pole. |
| Voltage rating | 440 V - 440 V |
| Rated insulation voltage (U _i) | 690 V AC |
| Rated impulse withstand voltage (U _{imp}) at auxiliary contacts | 6000 V |
| Rated impulse withstand voltage (U _{imp}) at main contacts | 6000 V |
| Current rating of neutral conductor | 200% of phase conductor |
| Rated operational current | 20 A (415 V AC-3, making and breaking capacity) 160 A (380/400 V AC-1, making and breaking capacity) 20 A (660-690 V AC-3, making and breaking capacity) 125 A (415 V AC-1, making and breaking capacity) |
| Instantaneous current setting (I _i) - min | 350 A |
| Instantaneous current setting (I _i) - max | 350 A |
| Overload current setting (I _r) | 15 A - 20 A |
| Overload current setting (I _r) - min | 15 A |
| Overload current setting (I _r) - max | 20 A |
| Short delay current setting (I _{sd}) - min | 0 A |
| Short delay current setting (I _{sd}) - 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 _{cs} (IEC/EN 60947) at 230 V, 50/60 Hz | 30 kA |
| Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz | 25 kA |
| Rated short-circuit breaking capacity I _{cs} (IEC/EN 60947) at 440 V, 50/60 Hz | 18.5 kA |
| Rated short-circuit making capacity I _{cm} at 240 V, 50/60 Hz | 63 kA |
| Rated short-circuit making capacity I _{cm} at 400/415 V, 50/60 Hz | 53 kA |
| Rated short-circuit making capacity I _{cm} at 440 V, 50/60 Hz | 53 kA |

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| 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 | | 10000 operations at 415 V AC-1 7500 operations at 415 V AC-3 7500 operations at 400 V AC-1 |
| Direction of incoming supply | | As required |
| Mounting Method | | Built-in device fixed built-in technique DIN rail (top hat rail) mounting optional Fixed |
| 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, 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 Icn) Rated current = rated uninterrupted current: 20 A Set value in neutral conductor is synchronous with set value Ir of main pole. |
| Lifespan, mechanical | | 20000 operations |
| 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) | | 10 mm ² - 16 mm ² (1x) at box terminal 6 mm ² - 16 mm ² (2x) direct at switch rear-side connection 10 mm ² - 16 mm ² (1x) direct at switch rear-side connection 16 mm ² - 95 mm ² (1x) at tunnel terminal 6 mm ² - 16 mm ² (2x) at box terminal |
| Terminal capacity (copper stranded conductor/cable) | | 25 mm ² (2x) at box terminal 25 mm ² (2x) direct at switch rear-side connection 25 mm ² - 70 mm ² (1x) at box terminal 25 mm ² - 95 mm ² (1x) at tunnel terminal 25 mm ² - 70 mm ² (1x) 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 |
| Rated operational current for specified heat dissipation (In) | | 20 A |
| Equipment heat dissipation, current-dependent | | 9.82 W |
| 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. |

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| 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. |
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| Functions | | System and cable protection |