

## Eaton 278453

Eaton Moeller® series ZB Overload relay,  
ZB32, Ir= 16 - 24 A, 1 N/O, 1 N/C, Direct  
mounting, IP20

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| <b>PRODUCT NAME</b>             | Eaton Moeller® series ZB<br>Thermal overload relay                                                                                                                                                                             |
| <b>CATALOG NUMBER</b>           | 278453                                                                                                                                                                                                                         |
| <b>UPC</b>                      | 782116358793                                                                                                                                                                                                                   |
| <b>PRODUCT<br/>LENGTH/DEPTH</b> | 96 mm                                                                                                                                                                                                                          |
| <b>PRODUCT HEIGHT</b>           | 67 mm                                                                                                                                                                                                                          |
| <b>PRODUCT WIDTH</b>            | 45 mm                                                                                                                                                                                                                          |
| <b>PRODUCT WEIGHT</b>           | 0.145 kg                                                                                                                                                                                                                       |
| <b>CERTIFICATIONS</b>           | IEC/EN 60947<br>UL 60947-4-1<br>UL File No.: E29184<br>CSA File No.: 012528<br>CE<br>UL Category Control No.:<br>NKCR<br>UL<br>VDE 0660<br>CSA<br>CSA Class No.: 3211-03<br>CSA-C22.2 No. 60947-4-1-<br>14<br>IEC/EN 60947-4-1 |

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| <b>FEATURES</b>                                                                         | Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102)                                                         |
|                                                                                         | Reset pushbutton manual/auto<br>Test/off button<br>Trip-free release                                                             |
| <b>10.10 TEMPERATURE RISE</b>                                                           | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| <b>10.11 SHORT-CIRCUIT RATING</b>                                                       | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>                                              | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| <b>10.13 MECHANICAL FUNCTION</b>                                                        | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |
| <b>10.2.2 CORROSION RESISTANCE</b>                                                      | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>                         | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>       | Meets the product standard's requirements.                                                                                       |
| <b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b> | Meets the product standard's requirements.                                                                                       |
| <b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>                                 | Meets the product standard's requirements.                                                                                       |
| <b>10.2.5 LIFTING</b>                                                                   | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| <b>10.2.6 MECHANICAL IMPACT</b>                                                         | Does not apply, since the entire switchgear needs to                                                                             |

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| <b>CHARACTERISTIC CURVE</b>       | <a href="#">eaton-tripping-devices-zb-overload-relay-characteristic-curve-011.eps</a> |
| <b>DECLARATIONS OF CONFORMITY</b> | <a href="#">eaton-thermal-overload-relay-declaration-of-conformity-uk251269en.pdf</a> |
|                                   | <a href="#">IL03407195Z</a>                                                           |
|                                   | <a href="#">eaton-overload-relays-zb12-zb32-il03407015z.pdf</a>                       |

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|                                                                     | be evaluated.                                                                  |
| <b>10.2.7 INSCRIPTIONS</b>                                          | Meets the product standard's requirements.                                     |
| <b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>                      | Does not apply, since the entire switchgear needs to be evaluated.             |
| <b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>                       | Meets the product standard's requirements.                                     |
| <b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>                       | Does not apply, since the entire switchgear needs to be evaluated.             |
| <b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>       | Does not apply, since the entire switchgear needs to be evaluated.             |
| <b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>            | Is the panel builder's responsibility.                                         |
| <b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>                     | Is the panel builder's responsibility.                                         |
| <b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>                     | Is the panel builder's responsibility.                                         |
| <b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>                             | Is the panel builder's responsibility.                                         |
| <b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>     | Is the panel builder's responsibility.                                         |
| <b>POLLUTION DEGREE</b>                                             | 3                                                                              |
| <b>CLASS</b>                                                        | CLASS 10 A                                                                     |
| <b>CLIMATIC PROOFING</b>                                            | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78 |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>                       | 6000 V AC<br>4000 V (auxiliary and control circuits)                           |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 220 V, 230 V, 240 V</b> | 1.5 A                                                                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 380 V, 400 V, 415 V</b> | 0.9 A                                                                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 110 V</b>               | 0.4 A                                                                          |
| <b>RATED OPERATIONAL CURRENT (IE) AT DC-13, 220 V, 230 V</b>        | 0.2 A                                                                          |
| <b>RATED OPERATIONAL</b>                                            | 0.9 A                                                                          |

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| <b>CURRENT (IE) AT DC-13,<br/>24 V</b>                                                   |                                                                                                          |
| <b>RATED OPERATIONAL<br/>CURRENT (IE) AT DC-13,<br/>60 V</b>                             | 0.75 A                                                                                                   |
| <b>RATED OPERATIONAL<br/>CURRENT FOR SPECIFIED<br/>HEAT DISSIPATION (IN)</b>             | 24 A                                                                                                     |
| <b>STATIC HEAT<br/>DISSIPATION, NON-<br/>CURRENT-DEPENDENT<br/>PVS</b>                   | 0 W                                                                                                      |
| <b>STRIPPING LENGTH<br/>(CONTROL CIRCUIT<br/>CABLE)</b>                                  | 8 mm                                                                                                     |
| <b>STRIPPING LENGTH<br/>(MAIN CABLE)</b>                                                 | 10 mm                                                                                                    |
| <b>VOLTAGE RATING - MAX</b>                                                              | 600 VAC                                                                                                  |
| <b>PRODUCT CATEGORY</b>                                                                  | <ul style="list-style-type: none"> <li>• Accessories</li> <li>• Overload relay ZB up to 150 A</li> </ul> |
| <b>PROTECTION</b>                                                                        | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)     |
| <b>FRAME SIZE</b>                                                                        | ZB32                                                                                                     |
| <b>ADJUSTABLE CURRENT<br/>RANGE - MAX</b>                                                | 24 A                                                                                                     |
| <b>ADJUSTABLE CURRENT<br/>RANGE - MIN</b>                                                | 16 A                                                                                                     |
| <b>AMBIENT OPERATING<br/>TEMPERATURE - MAX</b>                                           | 55 °C                                                                                                    |
| <b>AMBIENT OPERATING<br/>TEMPERATURE - MIN</b>                                           | -25 °C                                                                                                   |
| <b>AMBIENT OPERATING<br/>TEMPERATURE<br/>(ENCLOSED) - MAX</b>                            | 40 °C                                                                                                    |
| <b>AMBIENT OPERATING<br/>TEMPERATURE<br/>(ENCLOSED) - MIN</b>                            | 25 °C                                                                                                    |
| <b>CONVENTIONAL<br/>THERMAL CURRENT ITH<br/>OF AUXILIARY CONTACTS<br/>(1-POLE, OPEN)</b> | 6 A                                                                                                      |
| <b>EQUIPMENT HEAT<br/>DISSIPATION, CURRENT-<br/>DEPENDENT PVID</b>                       | 6 W                                                                                                      |

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| <b>HEAT DISSIPATION CAPACITY PDISS</b>                         | 0 W                                                                                                                                          |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>       | 2 W                                                                                                                                          |
| <b>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>     | 0                                                                                                                                            |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 1                                                                                                                                            |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 1                                                                                                                                            |
| <b>NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)</b>           | 1                                                                                                                                            |
| <b>NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)</b>             | 1                                                                                                                                            |
| <b>OVERLOAD RELEASE CURRENT SETTING - MAX</b>                  | 24 A                                                                                                                                         |
| <b>OVERLOAD RELEASE CURRENT SETTING - MIN</b>                  | 16 A                                                                                                                                         |
| <b>RATED OPERATIONAL VOLTAGE (UE) - MAX</b>                    | 690 V                                                                                                                                        |
| <b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 120 V</b>          | 1.5 A                                                                                                                                        |
| <b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>              | Screw connection                                                                                                                             |
| <b>RESET FUNCTION</b>                                          | Push-button<br>Automatic                                                                                                                     |
| <b>SCREWDRIVER SIZE</b>                                        | 1 x 6 mm, Terminal screw, Standard screwdriver<br>2, Terminal screw, Pozidriv screwdriver                                                    |
| <b>MOUNTING METHOD</b>                                         | Direct mounting<br>Direct attachment                                                                                                         |
| <b>DEGREE OF PROTECTION</b>                                    | IP20                                                                                                                                         |
| <b>OVERVOLTAGE CATEGORY</b>                                    | III                                                                                                                                          |
| <b>SAFE ISOLATION</b>                                          | 240 V AC, Between auxiliary contacts,<br>According to EN 61140<br>440 V, Between auxiliary contacts and main contacts, According to EN 61140 |

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|                                                            | 440 V AC, Between main circuits, According to EN 61140                                                                                                                                                           |
| <b>SCREW SIZE</b>                                          | M3.5, Terminal screw,<br>Control circuit cables<br>M4, Terminal screw                                                                                                                                            |
| <b>SHOCK RESISTANCE</b>                                    | 10 g, Mechanical,<br>Sinusoidal, Shock duration<br>10 ms                                                                                                                                                         |
| <b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>  | 100 kA, Fuse, SCCR (UL/CSA)<br>45 A, Class J, max. Fuse, SCCR (UL/CSA)                                                                                                                                           |
| <b>SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)</b> | R300, DC operated (UL/CSA)<br>B300 at opposite polarity, AC operated (UL/CSA)<br>B600 at opposite polarity, AC operated (UL/CSA)                                                                                 |
| <b>SHORT-CIRCUIT PROTECTION RATING</b>                     | Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits<br>50 A gG/gL, Fuse, Type "2" coordination<br>125 A gG/gL, Fuse, Type "1" coordination                                                     |
| <b>SUITABLE FOR</b>                                        | Branch circuits, (UL/CSA)                                                                                                                                                                                        |
| <b>TEMPERATURE COMPENSATION</b>                            | Continuous<br>$\leq 0.25\text{ \%}/\text{K}$ , residual error for $T > 40^\circ$                                                                                                                                 |
| <b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>           | 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>2 x (1 - 4) mm <sup>2</sup> , Main cables<br>1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>1 x (1 - 4) mm <sup>2</sup> , Main cables |
| <b>TERMINAL CAPACITY (SOLID)</b>                           | 1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables<br>1 x (1 - 6) mm <sup>2</sup> , Main cables<br>2 x (1 - 6) mm <sup>2</sup> , Main cables<br>2 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables     |
| <b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>              | 2 x (18 - 14), Control circuit cables<br>18 - 8, Main cables                                                                                                                                                     |
| <b>TIGHTENING TORQUE</b>                                   | 1.2 Nm, Screw terminals, Control circuit cables<br>1.8 Nm, Screw terminals, Main cables                                                                                                                          |

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| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| :               |



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