



Overload relay, ZB150, Ir= 145 - 175 A, 1 N/O, 1 N/C, Direct mounting, IP00



Part no. ZB150-175  
107316

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| General specifications                         |  |   |
| Product name                                   |  | Eaton Moeller® series ZB Thermal overload relay   |
| Part no.                                       |  | ZB150-175   |
| EAN  |  | 4015081070794   |
| Product Length/Depth                           |  | 134 millimetre  |
| Product height                                 |  | 135 millimetre  |
| Product width                                  |  | 118 millimetre  |
| Product weight                                 |  | 1.21 kilogram   |
| Certifications                                 |  | UL<br>VDE 0660<br>CSA<br>UL 60947-4-1<br>CSA Class No.: 3211-03<br>UL File No.: E29184<br>IEC/EN 60947-4-1<br>UL Category Control No.: NKCR<br>CSA File No.: 012528<br>IEC/EN 60947<br>CE<br>CSA-C22.2 No. 60947-4-1-14                                 |
| Product Tradename                              |  | ZB  |
| Product Type                                   |  | Thermal overload relay  |
| Product Sub Type                               |  | None  |
| Catalog Notes                                  |  | Ambient air temperature: Operating range to IEC/EN 60947, PTB: -5°C to +55°C<br>Ambient operating temperature (according to IEC/EN 60947)<br>Rated operational current: Switch-on and switch-off conditions based on DC-13, time constant as specified. |
| Features & Functions                           |  |   |
| Features                                       |  | Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102)<br>Test/off button<br>Reset pushbutton manual/auto<br>Trip-free release  |
| General information                            |  |   |
| Ambient operating temperature - min            |  | -25 °C  |
| Ambient operating temperature - max            |  | 55 °C   |
| Ambient operating temperature (enclosed) - min |  | 25 °C   |
| Ambient operating temperature (enclosed) - max |  | 40 °C   |
| Class  |  | CLASS 10 A  |
| Climatic proofing                              |  | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30  |
| Degree of protection                           |  | IP00  |
| Frame size                                     |  | ZB150   |
| Mounting method                                |  | Direct mounting<br>Direct attachment  |
| Overload release current setting - min         |  | 145 A   |
| Overload release current setting - max         |  | 175 A   |
| Overvoltage category                           |  | III   |
| Pollution degree                               |  | 3   |
| Product category                               |  | Accessories<br>Overload relay ZB up to 150 A  |
| Protection                                     |  | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)  |
| Rated impulse withstand voltage (Uimp)         |  | 8000 V AC<br>4000 V (auxiliary and control circuits)  |
| Shock resistance                               |  | 10 g, Mechanical, Sinusoidal, Shock duration 10 ms  |
| Suitable for                                   |  | Branch circuits, (UL/CSA)   |
| Temperature compensation                       |  | Continuous<br>≤ 0.25 %/K, residual error for T > 40°  |

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| <b>Terminal capacities</b>  |  |  |
| Terminal capacity (flexible with ferrule)   |  | 1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables<br>1 x (4 - 70) mm <sup>2</sup> , Main cables<br>2 x (4 - 70) mm <sup>2</sup> , Main cables |
| Terminal capacity (solid)   |  | 2 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables<br>1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables<br>1 x (4 - 16) mm <sup>2</sup> , Main cables<br>2 x (4 - 16) mm <sup>2</sup> , Main cables     |
| Terminal capacity (solid/stranded AWG)  |  | 2 x (18 - 14), Control circuit cables<br>3/0, Main cables  |
| Terminal capacity (stranded)  |  | 1 x (16 - 70) mm <sup>2</sup> , Main cables<br>2 x (16 - 70) mm <sup>2</sup> , Main cables   |
| Stripping length (main cable)   |  | 24 mm  |
| Stripping length (control circuit cable)  |  | 8 mm   |
| Screw size  |  | M10, Terminal screw, Main cables<br>5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables<br>M3.5, Terminal screw, Control circuit cables  |
| Screwdriver size  |  | 1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver<br>2, Terminal screw, Control circuit cables, Pozidriv screwdriver  |
| Tightening torque   |  | 10 Nm, Screw terminals, Main cables<br>1.2 Nm, Screw terminals, Control circuit cables   |
| <b>Electrical rating</b>  |  |  |
| Conventional thermal current I <sub>th</sub> of auxiliary contacts (1-pole, open) |  | 6 A  |
| Rated operational current (I <sub>e</sub> ) at AC-15, 120 V                       |  | 1.5 A  |
| Rated operational current (I <sub>e</sub> ) at AC-15, 220 V, 230 V, 240 V         |  | 1.5 A  |
| Rated operational current (I <sub>e</sub> ) at AC-15, 380 V, 400 V, 415 V         |  | 0.9 A  |
| Rated operational current (I <sub>e</sub> ) at DC-13, 110 V                       |  | 0.4 A  |
| Rated operational current (I <sub>e</sub> ) at DC-13, 220 V, 230 V                |  | 0.2 A  |
| Rated operational current (I <sub>e</sub> ) at DC-13, 24 V                        |  | 0.9 A  |
| Rated operational current (I <sub>e</sub> ) at DC-13, 60 V                        |  | 0.75 A   |
| Rated operational voltage (U <sub>e</sub> ) - max                                 |  | 1000 V   |
| Safe isolation  |  | 440 V AC, Between auxiliary contacts and main contacts, According to EN 61140<br>440 V AC, Between main circuits, According to EN 61140<br>240 V AC, Between auxiliary contacts, According to EN 61140             |
| Switching capacity (auxiliary contacts, pilot duty)                               |  | B300 at opposite polarity, AC operated (UL/CSA)<br>R300, DC operated (UL/CSA)<br>B600 at opposite polarity, AC operated (UL/CSA)   |
| Voltage rating - max  |  | 600 V AC   |
| <b>Short-circuit rating</b>   |  |  |
| Short-circuit current rating (basic rating)                                       |  | 600 A Class K5, max. Fuse, SCCR (UL/CSA)<br>600 A, max. CB, SCCR (UL/CSA)<br>10 kA, SCCR (UL/CSA)  |
| Short-circuit protection rating   |  | Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits<br>315 A gG/gL, Fuse, Type "1" coordination<br>250 A gG/gL, Fuse, Type "2" coordination  |
| <b>Contacts</b>   |  |  |
| Number of auxiliary contacts (change-over contacts)                               |  | 0  |
| Number of auxiliary contacts (normally closed contacts)                           |  | 1  |
| Number of auxiliary contacts (normally open contacts)                             |  | 1  |
| Number of contacts (normally closed contacts)                                     |  | 1  |
| Number of contacts (normally open contacts)                                       |  | 1  |
| <b>Design verification</b>  |  |  |
| Equipment heat dissipation, current-dependent P <sub>vid</sub>                    |  | 34.5 W   |
| Heat dissipation capacity P <sub>diss</sub>                                       |  | 0 W  |
| Heat dissipation per pole, current-dependent P <sub>vid</sub>                     |  | 11.5 W   |
| Rated operational current for specified heat dissipation (I <sub>ln</sub> )       |  | 175 A  |
| Static heat dissipation, non-current-dependent P <sub>vs</sub>                    |  | 0 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.   |
| 10.2.4 Resistance to ultra-violet (UV) radiation                                  |  | Meets the product standard's requirements.   |

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| 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.                         |

## Technical data ETIM 9.0

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| Low-voltage industrial components (EG000017) / Thermal overload relay (EC000106)   |   |                   |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Thermal overload relay (ecl@ss13-27-37-15-01 [AKF075019]) |   |                   |
| Adjustable current range   | A | 145 - 175         |
| Max. rated operation voltage Ue  | V | 1000              |
| Mounting method  |   | Direct attachment |
| Type of electrical connection of main circuit  |   | Screw connection  |
| Number of auxiliary contacts as normally closed contact  |   | 1                 |
| Number of auxiliary contacts as normally open contact  |   | 1                 |
| Number of auxiliary contacts as change-over contact  |   | 0                 |
| Release class  |   | CLASS 10 A        |
| Reset function input   |   | No                |
| Reset function automatic   |   | Yes               |
| Reset function push-button   |   | Yes               |