



**Motor-protective circuit-breaker, Ir= 50 - 58 A, Screw terminals,  
Terminations: IP00**

**Part no.** PKZM4-58  
**222394**  
**EL Number** 4355162  
**(Norway)**

|                                          |  |                                                                                                                                                                                                                         |
|------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General specifications</b>            |  |                                                                                                                                                                                                                         |
| Product name                             |  | Eaton Moeller® series PKZM4 Motor-protective circuit-breaker                                                                                                                                                            |
| Part no.                                 |  | PKZM4-58                                                                                                                                                                                                                |
| EAN                                      |  | 4015082223946                                                                                                                                                                                                           |
| Product Length/Depth                     |  | 160 millimetre                                                                                                                                                                                                          |
| Product height                           |  | 140 millimetre                                                                                                                                                                                                          |
| Product width                            |  | 55 millimetre                                                                                                                                                                                                           |
| Product weight                           |  | 1.136 kilogram                                                                                                                                                                                                          |
| Certifications                           |  | UL File No.: E36332<br>UL<br>IEC/EN 60947-4-1<br>UL Category Control No.: NLRV<br>VDE 0660<br>CE<br>CSA<br>CSA-C22.2 No. 60947-4-1-14<br>CSA Class No.: 3211-05<br>UL 60947-4-1<br>CSA File No.: 165628<br>IEC/EN 60947 |
| Product Tradename                        |  | PKZM4                                                                                                                                                                                                                   |
| Product Type                             |  | Motor-protective circuit-breaker                                                                                                                                                                                        |
| Product Sub Type                         |  | None                                                                                                                                                                                                                    |
| Catalog Notes                            |  | IE3-ready devices are identified by the logo on their packaging.                                                                                                                                                        |
| <b>Features &amp; Functions</b>          |  |                                                                                                                                                                                                                         |
| Actuator type                            |  | Turn button                                                                                                                                                                                                             |
| Features                                 |  | Phase-failure sensitivity (according to IEC/EN 60947-4-1, VDE 0660 Part 102)                                                                                                                                            |
| Functions                                |  | Motor protection<br>Phase failure sensitive                                                                                                                                                                             |
| Number of poles                          |  | Three-pole                                                                                                                                                                                                              |
| <b>General information</b>               |  |                                                                                                                                                                                                                         |
| Connection                               |  | Screw terminals                                                                                                                                                                                                         |
| Degree of protection                     |  | IP20<br>Terminals: IP00                                                                                                                                                                                                 |
| Explosion safety category for dust       |  | ATEX dust-ex-protection, PTB 10, ATEX 3012, Ex II(2) G                                                                                                                                                                  |
| Lifespan, electrical                     |  | 30,000 operations (at 400V, AC-3)                                                                                                                                                                                       |
| Lifespan, mechanical                     |  | 30,000 Operations (Main conducting paths)                                                                                                                                                                               |
| Mounting position                        |  | Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height.                                                                                                                                                |
| Operating frequency                      |  | 40 Operations/h                                                                                                                                                                                                         |
| Overvoltage category                     |  | III                                                                                                                                                                                                                     |
| Pollution degree                         |  | 3                                                                                                                                                                                                                       |
| Product category                         |  | Motor protective circuit breaker                                                                                                                                                                                        |
| Protection                               |  | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)                                                                                                                    |
| Rated impulse withstand voltage (Uimp)   |  | 6000 V AC                                                                                                                                                                                                               |
| Shock resistance                         |  | 15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms                                                                                                                                           |
| Suitable for                             |  | Also motors with efficiency class IE3<br>Branch circuit: Manual type E if used with terminal, or suitable for group installations, (UL/CSA)                                                                             |
| Temperature compensation                 |  | -25 - 55 °C, Operating range<br>-5 - 40 °C to IEC/EN 60947, VDE 0660<br>≤ 0.25 %/K, residual error for T > 40°                                                                                                          |
| <b>Climatic environmental conditions</b> |  |                                                                                                                                                                                                                         |
| Altitude                                 |  | Max. 2000 m                                                                                                                                                                                                             |

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|----------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                                                                                                                              |
| Ambient storage temperature - min                                          |  | 40 °C                                                                                                                                                                                              |
| Ambient storage temperature - max                                          |  | 80 °C                                                                                                                                                                                              |
| Climatic proofing                                                          |  | Damp heat, cyclic, to IEC 60068-2-30<br>Damp heat, constant, to IEC 60068-2-78                                                                                                                     |
| <b>Terminal capacities</b>                                                 |  |                                                                                                                                                                                                    |
| Terminal capacity (flexible with ferrule)                                  |  | 1 x (0.75 - 35) mm <sup>2</sup> , Main cables<br>2 x (0.75 - 25) mm <sup>2</sup> , Main cables                                                                                                     |
| Terminal capacity (solid)                                                  |  | 1 x (0.75 - 16) mm <sup>2</sup> , Main cables<br>2 x (0.75 - 16) mm <sup>2</sup>                                                                                                                   |
| Terminal capacity (solid/stranded AWG)                                     |  | 14 - 2                                                                                                                                                                                             |
| Stripping length (main cable)                                              |  | 14 mm                                                                                                                                                                                              |
| Tightening torque                                                          |  | 3.3 Nm, Screw terminals, Main cable                                                                                                                                                                |
| <b>Electrical rating</b>                                                   |  |                                                                                                                                                                                                    |
| Rated frequency - min                                                      |  | 50 Hz                                                                                                                                                                                              |
| Rated frequency - max                                                      |  | 60 Hz                                                                                                                                                                                              |
| Rated operational current (Ie)                                             |  | 58 A                                                                                                                                                                                               |
| Rated operational power at AC-3, 220/230 V, 50 Hz                          |  | 17 kW                                                                                                                                                                                              |
| Rated operational power at AC-3, 380/400 V, 50 Hz                          |  | 30 kW                                                                                                                                                                                              |
| Rated operational power at AC-3, 440 V, 50 Hz                              |  | 37 kW                                                                                                                                                                                              |
| Rated operational power at AC-3, 500 V, 50 Hz                              |  | 37 kW                                                                                                                                                                                              |
| Rated operational power at AC-3, 690 V, 50 Hz                              |  | 55 kW                                                                                                                                                                                              |
| Rated operational voltage (Ue) - min                                       |  | 690 V                                                                                                                                                                                              |
| Rated operational voltage (Ue) - max                                       |  | 690 V                                                                                                                                                                                              |
| Rated uninterrupted current (Iu)                                           |  | 58 A                                                                                                                                                                                               |
| <b>Short-circuit rating</b>                                                |  |                                                                                                                                                                                                    |
| Rated short-circuit breaking capacity Icu at 400 V AC                      |  | 50 kA                                                                                                                                                                                              |
| Short-circuit current                                                      |  | 60 kA DC, up to 250 V DC, Main conducting paths                                                                                                                                                    |
| Short-circuit current rating (group protection)                            |  | 600 A, 600 V High Fault, max. Fuse, SCCR (UL/CSA)<br>42 kA, 600 V High Fault, Fuse, SCCR (UL/CSA)<br>42 kA, 600 V High Fault, CB, SCCR (UL/CSA)<br>600 A, 600 V High Fault, max. CB, SCCR (UL/CSA) |
| Short-circuit current rating (type E)                                      |  | Accessories required BK50/3-PKZ4-E<br>50 kA, 480 Y/277 V, SCCR (UL/CSA)<br>50 kA, 240 V, SCCR (UL/CSA)                                                                                             |
| Short-circuit release                                                      |  | 899 A, I <sub>rm</sub> , Setting range max.<br>± 20% tolerance, Trip blocks<br>Basic device fixed 15.5 x I <sub>u</sub> , Trip Blocks                                                              |
| <b>Switching capacity</b>                                                  |  |                                                                                                                                                                                                    |
| Switching capacity                                                         |  | 58 A (3 contacts in series), DC-5 up to 250V<br>58 A, AC-3 up to 690 V                                                                                                                             |
| <b>Motor rating</b>                                                        |  |                                                                                                                                                                                                    |
| Assigned motor power at 230/240 V, 60 Hz, 1-phase                          |  | 10 HP                                                                                                                                                                                              |
| Assigned motor power at 460/480 V, 60 Hz, 3-phase                          |  | 40 HP                                                                                                                                                                                              |
| Assigned motor power at 575/600 V, 60 Hz, 3-phase                          |  | 50 HP                                                                                                                                                                                              |
| <b>Trip blocks</b>                                                         |  |                                                                                                                                                                                                    |
| Overload release current setting - min                                     |  | 50 A                                                                                                                                                                                               |
| Overload release current setting - max                                     |  | 58 A                                                                                                                                                                                               |
| Tripping characteristic                                                    |  | Overload trigger: tripping class 10 A                                                                                                                                                              |
| <b>Design verification</b>                                                 |  |                                                                                                                                                                                                    |
| Equipment heat dissipation, current-dependent P <sub>vid</sub>             |  | 28.2 W                                                                                                                                                                                             |
| Heat dissipation capacity P <sub>diss</sub>                                |  | 0 W                                                                                                                                                                                                |
| Heat dissipation per pole, current-dependent P <sub>vid</sub>              |  | 9.4 W                                                                                                                                                                                              |
| Rated operational current for specified heat dissipation (I <sub>n</sub> ) |  | 58 A                                                                                                                                                                                               |
| Static heat dissipation, non-current-dependent P <sub>vs</sub>             |  | 0 W                                                                                                                                                                                                |
| 10.2.2 Corrosion resistance                                                |  | Meets the product standard's requirements.                                                                                                                                                         |

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| 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.                         |

## Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss13-27-37-04-01 [AGZ529021])

|                                                                    |    |                                          |
|--------------------------------------------------------------------|----|------------------------------------------|
| Overload release current setting                                   | A  | 50 - 58                                  |
| Adjustment range undelayed short-circuit release                   | A  | 899 - 899                                |
| With thermal overload protection                                   |    | No                                       |
| Phase failure sensitive                                            |    | Yes                                      |
| Switch off technique                                               |    | Thermomagnetic                           |
| Rated operating voltage                                            | V  | 690 - 690                                |
| Rated permanent current I <sub>u</sub>                             | A  | 58                                       |
| Rated operation power at AC-3, 230 V                               | kW | 17                                       |
| Rated operation power at AC-3, 400 V                               | kW | 30                                       |
| Power loss                                                         | W  | 28.2                                     |
| Type of electrical connection of main circuit                      |    | Screw connection                         |
| Type of control element                                            |    | Turn button                              |
| Device construction                                                |    | Built-in device fixed built-in technique |
| With integrated auxiliary switch                                   |    | No                                       |
| With integrated under voltage release                              |    | No                                       |
| Number of poles                                                    |    | 3                                        |
| Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, AC | kA | 50                                       |
| Degree of protection (IP)                                          |    | IP20                                     |
| Height                                                             | mm | 140                                      |
| Width                                                              | mm | 55                                       |
| Depth                                                              | mm | 160                                      |