

# Specifications



## Eaton 199193

Eaton Moeller® series PKZM0 Motor-protective circuit-breaker, 0.25 kW, 0.63 - 1 A, Feed-side screw terminals/output-side push-in terminals, MSC

### General specifications

|                     |                                                              |
|---------------------|--------------------------------------------------------------|
| <b>PRODUCT NAME</b> | Eaton Moeller® series PKZM0 Motor-protective circuit-breaker |
|---------------------|--------------------------------------------------------------|

|                       |        |
|-----------------------|--------|
| <b>CATALOG NUMBER</b> | 199193 |
|-----------------------|--------|

|                   |               |
|-------------------|---------------|
| <b>MODEL CODE</b> | PKZM0-1-SPI32 |
|-------------------|---------------|

|            |               |
|------------|---------------|
| <b>EAN</b> | 4015081972777 |
|------------|---------------|

|                             |       |
|-----------------------------|-------|
| <b>PRODUCT LENGTH/DEPTH</b> | 75 mm |
|-----------------------------|-------|

|                       |        |
|-----------------------|--------|
| <b>PRODUCT HEIGHT</b> | 102 mm |
|-----------------------|--------|

|                      |       |
|----------------------|-------|
| <b>PRODUCT WIDTH</b> | 45 mm |
|----------------------|-------|

|                       |          |
|-----------------------|----------|
| <b>PRODUCT WEIGHT</b> | 0.274 kg |
|-----------------------|----------|

|                       |                                                                                                                                                                                                                         |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CERTIFICATIONS</b> | VDE 0660<br>IEC/EN 60947<br>UL File No.: E36332<br>IEC/EN 60947-4-1<br>CSA File No.: 165628<br>UL Category Control No.: NLRV<br>UL<br>CSA-C22.2 No. 60947-4-1-14<br>CSA Class No.: 3211-05<br>CSA<br>UL 60947-4-1<br>CE |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Climatic environmental conditions

|                                                       |                                                                                |
|-------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>ALTITUDE</b>                                       | Max. 2000 m                                                                    |
| <b>AMBIENT OPERATING TEMPERATURE - MAX</b>            | 55 °C                                                                          |
| <b>AMBIENT STORAGE TEMPERATURE - MAX</b>              | 80 °C                                                                          |
| <b>AMBIENT OPERATING TEMPERATURE - MIN</b>            | -25 °C                                                                         |
| <b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX</b> | 40 °C                                                                          |
| <b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN</b> | -25 °C                                                                         |
| <b>AMBIENT STORAGE TEMPERATURE - MIN</b>              | -40 °C                                                                         |
| <b>CLIMATIC PROOFING</b>                              | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |

## Contacts

|                                                                |   |
|----------------------------------------------------------------|---|
| <b>NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)</b>     | 0 |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b> | 0 |
| <b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>   | 0 |

## Design verification

**RATED OPERATIONAL  
CURRENT FOR SPECIFIED  
HEAT DISSIPATION (IN)** 1 A

**STATIC HEAT  
DISSIPATION, NON-  
CURRENT-DEPENDENT  
PVS** 0 W

**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.

**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

## Electrical rating

**RATED FREQUENCY -  
MAX** 60 Hz

**RATED FREQUENCY - MIN** 50 Hz

**RATED OPERATIONAL  
CURRENT (IE)** 1 A

**RATED OPERATIONAL  
POWER AT AC-3E,  
220/230 V, 50 HZ** 0.12 kW

**RATED OPERATIONAL  
POWER AT AC-3E,  
380/400 V, 50 HZ** 0.25 kW

**RATED OPERATIONAL  
POWER AT AC-3E, 440 V,  
50 HZ** 0.25 kW

**RATED OPERATIONAL  
POWER AT AC-3E, 500 V,  
50 HZ** 0.37 kW

**RATED OPERATIONAL  
POWER AT AC-3E, 690 V,  
50 HZ** 0.55 kW

**RATED OPERATIONAL  
VOLTAGE (UE) - MAX** 690 V

**RATED OPERATIONAL  
VOLTAGE (UE) - MIN** 690 V

**RATED UNINTERRUPTED  
CURRENT (IU)** 1 A

|                                                                 |                                                                    |
|-----------------------------------------------------------------|--------------------------------------------------------------------|
|                                                                 | 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>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>       | 5.33 W                                                             |
| <b>HEAT DISSIPATION CAPACITY PDISS</b>                          | 0 W                                                                |
| <b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>        | 1.8 W                                                              |

## Features & functions

|                        |                                                                              |
|------------------------|------------------------------------------------------------------------------|
| <b>ACTUATOR TYPE</b>   | Turn button                                                                  |
| <b>FEATURES</b>        | Phase-failure sensitivity (according to IEC/EN 60947-4-1, VDE 0660 Part 102) |
| <b>FUNCTIONS</b>       | Motor protection<br>Phase failure sensitive                                  |
| <b>NUMBER OF POLES</b> | Three-pole                                                                   |

## General information

|                             |                                                                          |
|-----------------------------|--------------------------------------------------------------------------|
| <b>CONNECTION</b>           | Screw terminals on feed side<br>Push-in terminals on output side         |
| <b>DEGREE OF PROTECTION</b> | Terminals: IP00<br>IP20                                                  |
| <b>LIFESPAN, ELECTRICAL</b> | 100,000 operations                                                       |
| <b>LIFESPAN, MECHANICAL</b> | 100,000 Operations                                                       |
| <b>MOUNTING METHOD</b>      | DIN rail (top hat rail)<br>mounting optional                             |
| <b>MOUNTING POSITION</b>    | Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height. |
| <b>OPERATING FREQUENCY</b>  | 40 Operations/h                                                          |
| <b>OVERVOLTAGE</b>          | III                                                                      |

|                                               |                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CATEGORY</b>                               |                                                                                                                                             |
| <b>POLLUTION DEGREE</b>                       | 3                                                                                                                                           |
| <b>PRODUCT CATEGORY</b>                       | Motor protective circuit breaker                                                                                                            |
| <b>PROTECTION</b>                             | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)                                        |
| <b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b> | 6000 V AC                                                                                                                                   |
| <b>SHOCK RESISTANCE</b>                       | 25 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms                                                               |
| <b>SUITABLE FOR</b>                           | Also motors with efficiency class IE3<br>Branch circuit: Manual type E if used with terminal, or suitable for group installations, (UL/CSA) |
| <b>TEMPERATURE COMPENSATION</b>               | ≤ 0.25 %/K, residual error for T > 40°<br>-25 - 55 °C, Operating range<br>-5 - 40 °C to IEC/EN 60947, VDE 0660                              |
| <b>USED WITH</b>                              | Motor starter combinations type MSC...                                                                                                      |

## Short-circuit rating

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICS  
AT 400 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICS  
AT 440 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICS  
AT 500 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICS  
AT 690 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICU  
AT 400 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICU  
AT 440 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICU  
AT 500 V AC** 150 kA

**RATED SHORT-CIRCUIT  
BREAKING CAPACITY ICU  
AT 690 V AC** 150 kA

### SHORT-CIRCUIT CURRENT RATING (GROUP PROTECTION)

50 kA, 600 V High Fault,  
Fuse, SCCR (UL/CSA) with  
600 A, 600 V High Fault,  
Fuse, SCCR (UL/CSA)  
50 kA, 600 V High Fault,  
CB, SCCR (UL/CSA) with  
600 A, 600 V High Fault,  
CB, SCCR (UL/CSA)

### SHORT-CIRCUIT CURRENT RATING (TYPE E)

50 kA, 600 Y/347 V, SCCR  
(UL/CSA)  
65 kA, 240 V, SCCR  
(UL/CSA)  
65 kA, 480 Y/277 V, SCCR  
(UL/CSA)

### SHORT-CIRCUIT RELEASE

Basic device fixed 15.5 x Iu  
  
± 20% tolerance  
15.5 A, I<sub>rm</sub>

## Switching capacity

**SWITCHING CAPACITY** 1 A, AC-3 up to 690 V

## Terminal capacities

**STRIPPING LENGTH  
(MAIN CABLE)** 12 mm

**TERMINAL CAPACITY  
(FLEXIBLE WITH  
UNISOLATED FERRULE)**

1 x (1 - 6) mm<sup>2</sup>, Screw terminals  
2 x (1 - 6) mm<sup>2</sup>, Screw terminals  
1 x (1 - 6) mm<sup>2</sup>, Push-in terminals  
2 x (1 - 6) mm<sup>2</sup>, Push-in terminals

**TERMINAL CAPACITY  
(FLEXIBLE WITH  
FERRULE)**

1 x (1 - 6) mm<sup>2</sup>, Screw terminals  
2 x (1 - 6) mm<sup>2</sup>, Screw terminals  
1 x (1 - 6) mm<sup>2</sup>, Push-in terminals, ferrule to DIN 46228-1  
2 x (1 - 6) mm<sup>2</sup>, Push-in terminals, ferrule to DIN 46228-1  
1 x (1 - 6) mm<sup>2</sup>, Push-in terminals, ferrule to DIN 46228-4  
2 x (1 - 4) mm<sup>2</sup>, Push-in terminals, ferrule to DIN 46228-4

**TERMINAL CAPACITY  
(FLEXIBLE)**

1 x (1 - 6) mm<sup>2</sup>, Screw terminals  
2 x (1 - 6) mm<sup>2</sup>, Screw terminals  
1 x (1 - 6) mm<sup>2</sup>, Push-in terminals  
2 x (1 - 6) mm<sup>2</sup>, Push-in terminals

**TERMINAL CAPACITY  
(FLEXIBLE WITH  
ULTRASONIC WELDED  
CABLE END)**

1 x (1 - 6) mm<sup>2</sup>, Screw terminals  
2 x (1 - 6) mm<sup>2</sup>, Screw terminals  
1 x (1 - 10) mm<sup>2</sup>  
2 x (1 - 6) mm<sup>2</sup>  
1 x (1 - 10) mm<sup>2</sup>, Push-in terminals  
2 x (1 - 6) mm<sup>2</sup>, Push-in terminals

**TERMINAL CAPACITY  
(SOLID)**

1 x (1 - 6) mm<sup>2</sup>, Screw terminals  
2 x (1 - 6) mm<sup>2</sup>, Screw terminals  
1 x (1 - 6) mm<sup>2</sup>, Push-in terminals  
2 x (1 - 6) mm<sup>2</sup>, Push-in terminals

**TERMINAL CAPACITY  
(SOLID/STRANDED AWG)** 18 - 10, screw terminals  
18 - 8, Push-in terminals

**TIGHTENING TORQUE** 1.7 Nm, Screw terminals,

## Trip blocks

**OVERLOAD RELEASE  
CURRENT SETTING - MAX** 1 A

**OVERLOAD RELEASE  
CURRENT SETTING - MIN** 0.63 A

**TRIPPING  
CHARACTERISTIC** Overload trigger: tripping class 10 A

## Resources

|                            |                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------|
| BROCHURES                  | <a href="#">eaton-motor-starters-system-xstart-brochure-br03407001en-en-us.pdf</a>              |
|                            | <a href="#">eaton-push-in-technology-product-overview-brochure-br034012-en-us.pdf</a>           |
| CATALOGUES                 | <a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a>          |
| DECLARATIONS OF CONFORMITY | <a href="#">eaton-motor-protective-circuit-breaker-declaration-of-conformity-uk251170en.pdf</a> |
|                            | <a href="#">eaton-motor-protective-circuit-breaker-declaration-of-conformity-eu250687en.pdf</a> |
| DRAWINGS                   | <a href="#">eaton-manual-motor-starters-pkzm-pkzm0-dimensions-003.eps</a>                       |
|                            | <a href="#">eaton-manual-motor-starters-pkz-dimensions-002.eps</a>                              |
|                            | <a href="#">eaton-manual-motor-starters-pkz-dimensions.eps</a>                                  |
| ECAD MODEL                 | <a href="#">ETN.199193.edz</a>                                                                  |
| INSTALLATION INSTRUCTIONS  | <a href="#">IL122024ZU</a>                                                                      |
| INSTALLATION VIDEOS        | <a href="#">WIN-WIN with push-in technology</a>                                                 |
| MCAD MODEL                 | <a href="#">eaton-breakers-mcad-drawings-pkzm0-s32-pi.dwg</a>                                   |
|                            | <a href="#">pkzm0_s32_pi.stp</a>                                                                |
| SALES NOTES                | <a href="#">eaton-link-module-for-motor-starters-pkz-flyer-fl034003en-en-us.pdf</a>             |

|                 |
|-----------------|
| PROJECT NAME:   |
| PROJECT NUMBER: |
| PREPARED BY:    |
| DATE:           |



**Eaton Corporation plc** Eaton House  
30 Pembroke Road  
Dublin 4, Ireland  
Eaton.com

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