# DATASHEET - PKM0-25

**Short-circuit protective breaker, Iu 25 A, Irm 388 A, Screw terminals, Also suitable for motors with efficiency class IE3.**

Powering Business Worldwide™

| | |
|---|---|
| **Part no.** | **PKM0-25** |
| **Catalog No.** | **044503** |
| **Alternate Catalog No.** | **XTPM025BNL** |

## Delivery program

| | | | |
|---|---|---|---|
| Product range | | | PKM0 motor protective circuit-breakers up to 32 A |
| Basic function | | | Short-circuit protective device only |
| Notes | | | Also suitable for motors with efficiency class IE3. |
| Connection technique | | | Screw terminals |
| **Max. motor rating** | | | |
| AC-3 | | | |
| 220 V 230 V 240 V | P | kW | 5.5 |
| 380 V 400 V 415 V | P | kW | 12.5 |
| 440 V | P | kW | 12.5 |
| 500 V | P | kW | 15 |
| 660 V 690 V | P | kW | 22 |
| Rated uninterrupted current | $I_u$ | A | 25 |
| **Setting range** | | | |
| short-circuit release  | | | |
| max. | $I_{rm}$ | A | 388 |

**Notes** An appropriate overload relay must be fitted to protect motors against overload.
Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height.
Refer to catalog CA034001DE for the allocation of short circuit protection and contactor
When using the PKM0 as short-circuit protection for motors with heavy starting duty, the rated operational current $I_e$ must be over-dimensioned during engineering with the following factors:
CLASS 5: 1,0
CLASS 10: 1,0
CLASS 15: 1,22
CLASS 20: 1,41
CLASS 25: 1,58
CLASS 30: 1,73
CLASS 35: 1,89
CLASS 40: 2,0

## Technical data

### General

| | | | |
|---|---|---|---|
| Standards | | | IEC/EN 60947, VDE 0660 |
| Climatic proofing | | | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature | | | |
| Storage | | °C | - 40 - 80 |
| Open | | °C | -25 - +55 |
| Enclosed | | °C | - 25 - 40 |
| Direction of incoming supply | | | as required |
| Degree of protection | | | |
| Device | | | IP20 |
| Terminations | | | IP00 |
| Protection against direct contact when actuated from front (EN 50274) | | | Finger and back-of-hand proof |
| Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27 | | g | 25 |
| Altitude | | m | Max. 2000 |
| Terminal capacity main cable | | | |
| Screw terminals | | | |
| Solid | | $mm^2$ | 1 x (1 - 6)<br>2 x (1 - 6) |

| | | | |
|---|---|---|---|
| Flexible with ferrule to DIN 46228 | | $mm^2$ | 1 x (1 - 6)<br>2 x (1 - 6) |
| Solid or stranded | | AWG | 18 - 10 |
| Stripping length | | mm | 10 |
| Specified tightening torque for terminal screws | | | |
| Main cable | | Nm | 1.7 |
| Control circuit cables | | Nm | 1 |

### Main conducting paths

| | | | |
|---|---|---|---|
| Rated impulse withstand voltage | $U_{imp}$ | V AC | 6000 |
| Overvoltage category/pollution degree | | | III/3 |
| Rated operational voltage | $U_e$ | V AC | 690 |
| Rated uninterrupted current = rated operational current | $I_u = I_e$ | A | 25 |
| Rated frequency | f | Hz | 50/60 |
| Current heat loss (3 pole at operating temperature) | | W | 7.04 |
| Impedance per pole | | mΩ | 4 |
| Lifespan, mechanical | Operations | $x\ 10^6$ | 0.1 |
| Lifespan, electrical (AC-3 at 400 V) | | | |
| Lifespan, electrical | Operations | $x\ 10^6$ | 0.1 |
| Max. operating frequency | | Ops/h | 40 |
| Motor switching capacity | | | |
| AC-3 (up to 690V) | | A | 25 |
| DC-5 (up to 250V) | | A | 25 (3 contacts in series) |

### Trip blocks

| | | | |
|---|---|---|---|
| Temperature compensation | | | |
| to IEC/EN 60947, VDE 0660 | | °C | - 5 … 40 |
| Operating range | | °C | - 25 … 55 |
| Temperature compensation residual error for T > 40 °C | | | ≦ 0.25 %/K |
| short-circuit release | | | Basic device, fixed: 15.5 x $I_u$ |
| Short-circuit release tolerance | | | ± 20% |

## Design verification as per IEC/EN 61439

| | | | |
|---|---|---|---|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | $I_n$ | A | 25 |
| Heat dissipation per pole, current-dependent | $P_{vid}$ | W | 2.35 |
| Equipment heat dissipation, current-dependent | $P_{vid}$ | W | 7.04 |
| Static heat dissipation, non-current-dependent | $P_{vs}$ | W | 0 |
| Heat dissipation capacity | $P_{diss}$ | W | 0 |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | 55 |
| IEC/EN 61439 design verification | | | |
| 10.2 Strength of materials and parts | | | |
| 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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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. |

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|---|---|---|---|
| 10.8 Connections for external conductors | | | Is the panel builder's responsibility. |
| 10.9 Insulation properties | | | |
| 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 8.0

| | | |
|---|---|---|
| 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@ss10.0.1-27-37-04-01 [AGZ529016]) | | |
| Overload release current setting | A | 0 - 0 |
| Adjustment range undelayed short-circuit release | A | 388 - 388 |
| With thermal protection | | No |
| Phase failure sensitive | | No |
| Switch off technique | | Magnetic |
| Rated operating voltage | V | 690 - 690 |
| Rated permanent current Iu | A | 25 |
| Rated operation power at AC-3, 230 V | kW | 5.5 |
| Rated operation power at AC-3, 400 V | kW | 12.5 |
| 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 Icu at 400 V, AC | kA | 50 |
| Degree of protection (IP) | | IP20 |
| Height | mm | 93 |
| Width | mm | 45 |
| Depth | mm | 76 |