



Motor-protective circuit-breaker, 3p, Ir=16-20A, screw connection

Part no. PKZM0-20
Catalog No. 046988
Eaton Catalog No. XTPR020BC1NL

Control Parts
Call to Order 717-209-7100

Delivery program

| | | | | |
|--------------------------|--|----------|---|---|
| Product range | | | | PKZM0 motor protective circuit-breakers up to 32 A |
| Basic function | | | | Motor protection |
| | | | | |
| Notes | | | | Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging. |
| 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 | | 9 |
| 440 V | P | kW | | 11 |
| 500 V | P | kW | | 12.5 |
| 660 V 690 V | P | kW | | 15 |
| Setting range | | | | |
| Overload releases | | I_r | A | 16 - 20 |
| short-circuit release | | | | |
| max. | | I_{rm} | A | 310 |
| Notes | Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 part 102. can be snapped-on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height | | | |
| | | | | |
| | PTB 10 ATEX 3013, observe Manual MN03402003Z-DE/EN | | | |

Technical data

| | | | | |
|------------------------------|--|----|--|--|
| General | | | | |
| Standards | | | | IEC/EN 60947, VDE 0660 |
| Climatic proofing | | | | Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature | | | | |
| Storage | | °C | | - 40 - 80 |
| Open | | °C | | -25 - +55 |
| Enclosed | | °C | | - 25 - 40 |
| Mounting position | | | | |
| Direction of incoming supply | | | | as required |
| Degree of protection | | | | |
| Device | | | | IP20 |

| | | | |
|---|--|-----------------|-------------------------------|
| Terminations | | | IP00 |
| Protection against direct contact | | | Finger and back-of-hand proof |
| Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27 | | g | 25 |
| Altitude | | m | 2000 |
| Terminal capacity main cable | | | |
| Screw terminals | | | |
| Solid | | mm ² | 1 x (1 - 6) 2 x (1 - 6) |
| Flexible with ferrule to DIN 46228 | | mm ² | 1 x (1 - 6) 2 x (1 - 6) |
| Solid or stranded | | AWG | 18 - 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 | 32 or current setting of the overcurrent release |
| Rated frequency | f | Hz | 40 - 60 |
| Current heat loss (3 pole at operating temperature) | | W | 6 |
| Lifespan, mechanical | Operations | x 10 ⁶ | 0.1 |
| Lifespan, electrical (AC-3 at 400 V) | Operations | x 10 ⁶ | 0.1 |
| Maximum operating frequency | | Ops./h | |
| Max. operating frequency | | Ops/h | 40 |
| Short-circuit rating | | | |
| DC | | | |
| Short-circuit rating | | kA | 40 |
| Notes | | | up to 250 V |
| Motor switching capacity | | | |
| AC-3 (up to 690 V) | | A | 32 |
| DC-5 (up to 250 V) | | 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 | | | \leq 0.25 %/K |
| Setting range of overload releases | | x I _u | 0.6 - 1 |
| short-circuit release | | | Basic device, fixed: 15.5 x I _u |
| Short-circuit release tolerance | | | ± 20% |
| Phase-failure sensitivity | | | IEC/EN 60947-1-1, VDE 0660 Part 102 |

Design verification as per IEC/EN 61439

| | | | |
|--|-------------------|----|--|
| Technical data for design verification | | | |
| Rated operational current for specified heat dissipation | I _n | A | 20 |
| Heat dissipation per pole, current-dependent | P _{vid} | W | 0 |
| Equipment heat dissipation, current-dependent | P _{vid} | W | 5.82 |
| 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. |
| 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. |

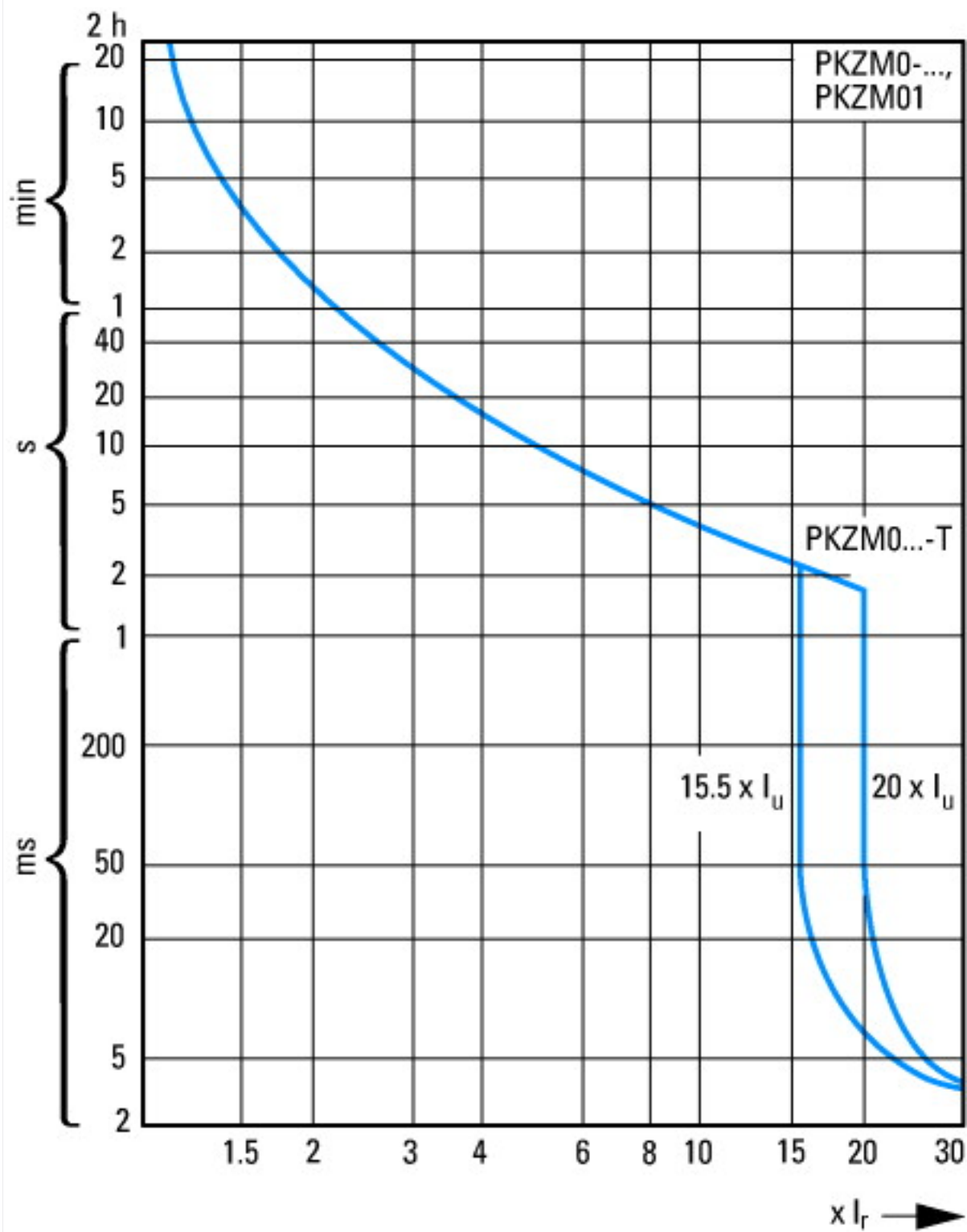
Technical data ETIM 6.0

| | | |
|--|----|--|
| 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@ss8.1-27-37-04-01 [AGZ529013]) | | |
| Overload release current setting | A | 16 - 20 |
| Adjustment range undelayed short-circuit release | A | 310 - 310 |
| Thermal protection | | No |
| Phase failure sensitive | | Yes |
| Switch off technique | | Thermomagnetic |
| Rated operating voltage | V | 690 - 690 |
| Rated permanent current I _u | A | 20 |
| Rated operation power at AC-3, 230 V | kW | 5.5 |
| Rated operation power at AC-3, 400 V | kW | 9 |
| 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 _{cu} at 400 V, AC | kA | 50 |
| Degree of protection (IP) | | IP20 |
| Height | mm | 93 |
| Width | mm | 45 |
| Depth | mm | 76 |

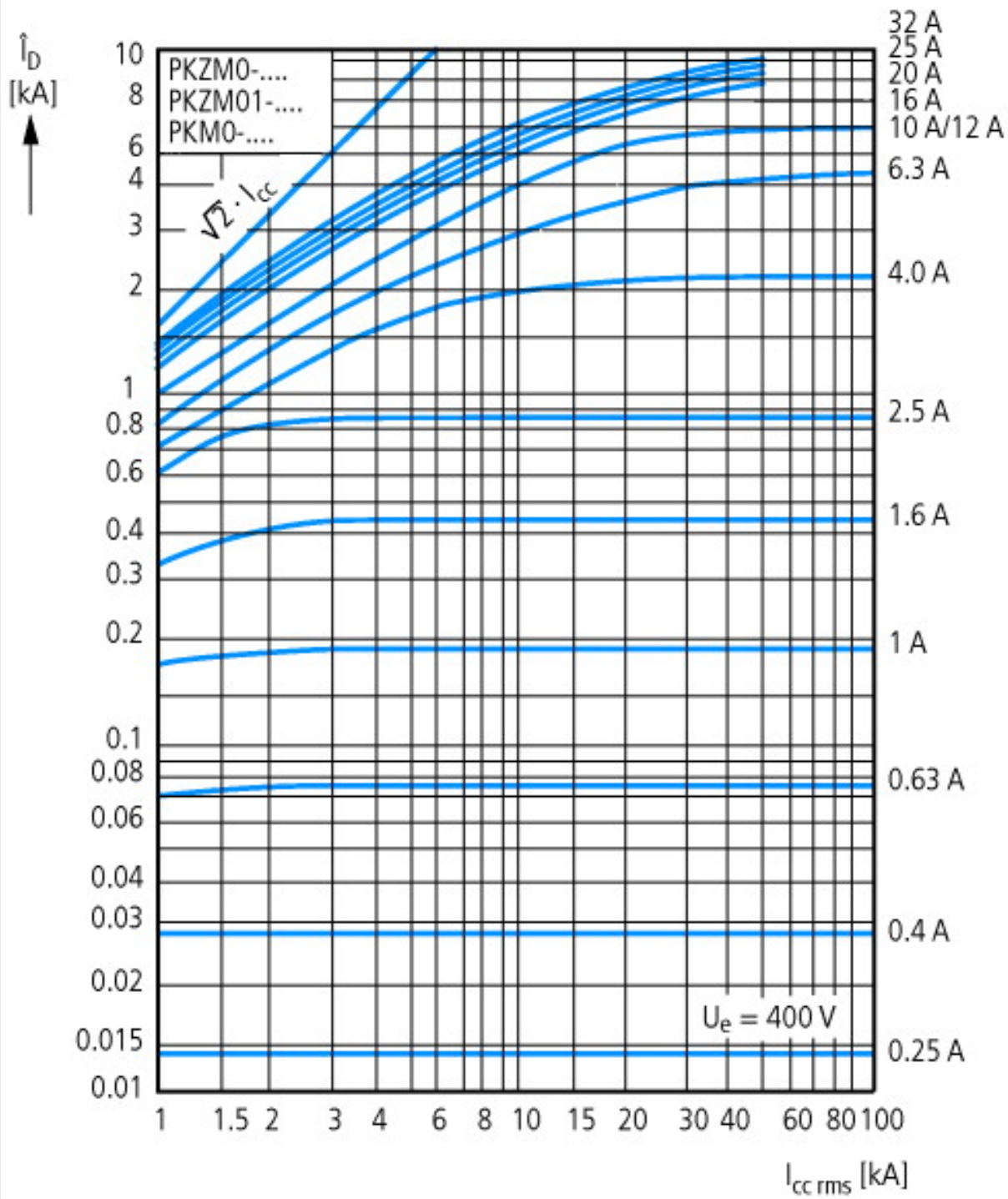
Approvals

| | | |
|-----------------------------|--|--|
| Product Standards | | IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking |
| UL File No. | | E36332 |
| UL Category Control No. | | NLRV |
| CSA File No. | | 165628 |
| CSA Class No. | | 3211-05 |
| North America Certification | | UL listed, CSA certified |

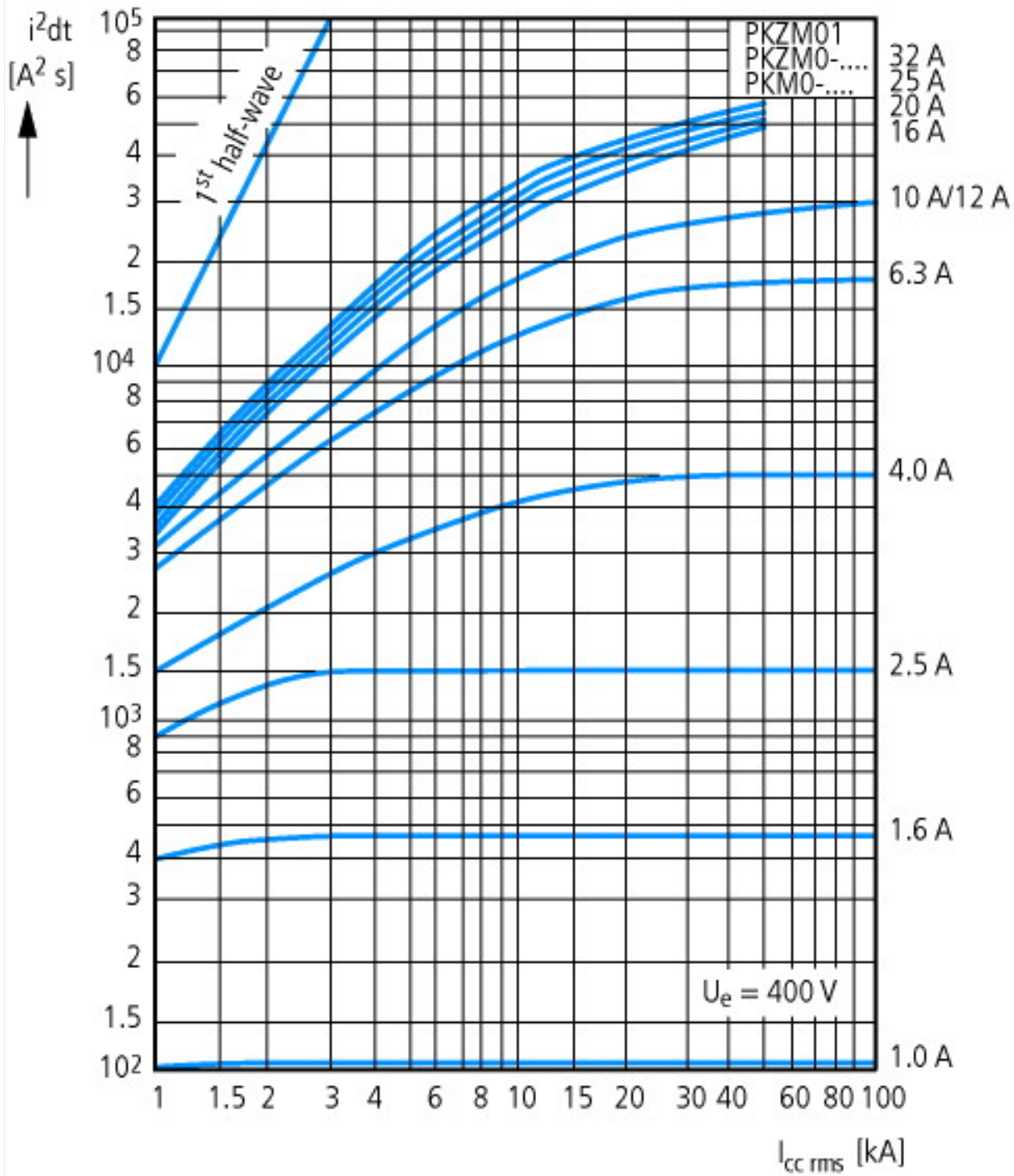
Characteristics



Motor-protective circuit-breaker tripping characteristic (high-capacity) compact starter, PKZM0-...T (not for PKM0-...), PKZM01

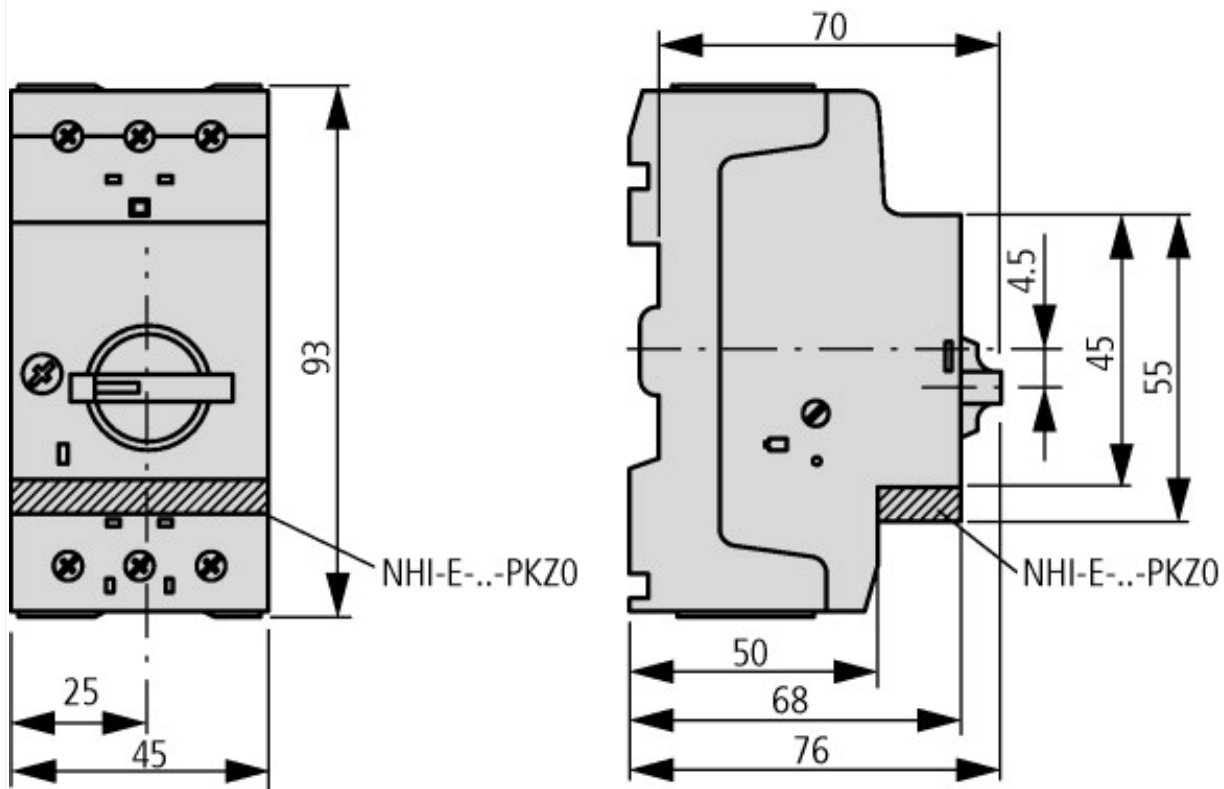


Let-through current

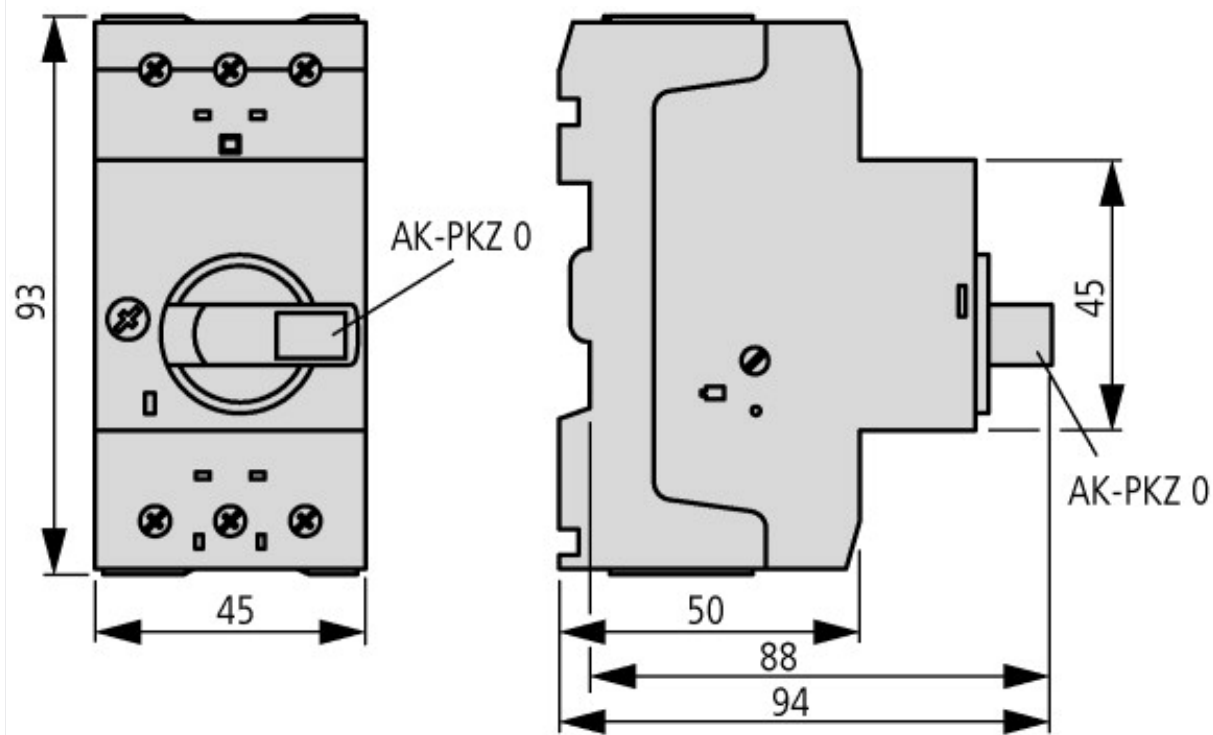


Let-through energy

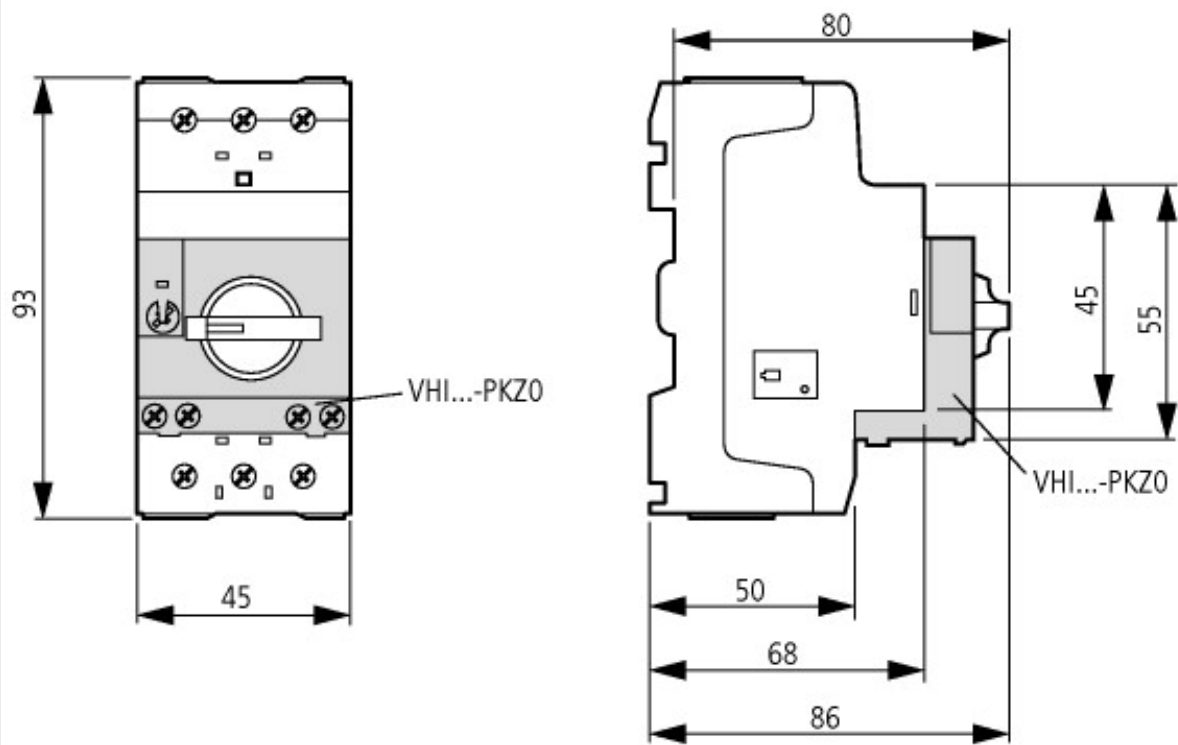
Dimensions



Motor-protective circuit-breaker with standard auxiliary contact
 PKZM0-...(+NHI-E-...-PKZ0)
 PKZM0-...-T(+NHI-E-...-PKZ0)
 PKM0-...(+NHI-E-...-PKZ0)



Motor-protective circuit-breakers with lockable rotary handles
 PKZM0-...+AK-PKZ0



Motor-protective circuit-breakers with early-make auxiliary contacts
PKZM0-...+VHI-...-PKZ0

Additional product information (links)

IL03407010Z (AWA1210-2138) Motor-protective circuit-breaker

IL03407010Z (AWA1210-2138) Motor-protective circuit-breaker ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407010Z2017_07.pdf

IL03407011Z (AWA1210-1925) Motor-protective circuit-breaker

IL03407011Z (AWA1210-1925) Motor-protective circuit-breaker ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407011Z2017_07.pdf

MN03402003Z (AWB1210-1458) PKZM0 motor-protective circuit-breakers, overload monitoring of Ex e motors

MN03402003Z (AWB1210-1458) PKZM0 motor-protective circuit-breakers, overload monitoring of Ex e motors - Deutsch / English ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03402003Z_DE_EN.pdf

EC prototype test certification PTB (German National Institute of Natural and Engineering Sciences) 10 ATEX 3013 http://intranet.moeller.net/technik_daten/file/produkt_deklarationen/file/approbationen/00001731.pdf

Motor starters and "Special Purpose Ratings" for the North American market http://www.moeller.net/binary/ver_techpapers/ver953en.pdf

Busbar Component Adapters for modern Industrial control panels http://www.moeller.net/binary/ver_techpapers/ver960en.pdf