







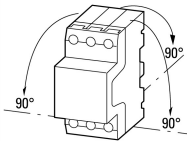
**Motor-protective circuit-breaker, 3p, Ir=20-25A, screw connection**

**Part no.** PKZM0-25  
**Article no.** 046989  
**Catalog No.** XTPR025BC1NL

**Delivery programme**

|  |          |    |   |
|--|----------|----|---|
| Product range  |          |    | PKZM0 motor protective circuit-breakers up to 32 A  |
| Basic function   |          |    | Motor protection  |
| Notes  |          |    | <br>Also suitable for motors with efficiency class IE3.<br>IE3-ready devices are identified by the logo on their packaging. |
| Connection technique   |          |    | Screw terminals   |
| <b>Max. motor rating</b>   |          |    |   |
| 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  |
| <b>Setting range</b>   |          |    |   |
| Overload releases  | $I_r$    | A  | 20 - 25   |
|   |          |    |   |
| Short-circuit releases   |          |    |   |
|   |          |    |   |
| max.   | $I_{rm}$ | A  | 388   |
| <b>Notes</b><br>Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 part 102.<br>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**

|                              |          |    |  |
|------------------------------|----------|----|--|
| <b>General</b>               |          |    |  |
| 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          |          | °C |  |
| Storage                      | $\theta$ | °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 screw terminals   |  | mm <sup>2</sup> |                               |
| Solid   |  | mm <sup>2</sup> | 1 x (1 - 6)<br>2 x (1 - 6)    |
| Flexible with ferrule to DIN 46228  |  | mm <sup>2</sup> | 1 x (1 - 6)<br>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  |
| Rated frequency   |             | Hz            | 40 - 60  |
| Current heat loss (3 pole at operating temperature)     |             | W             | 6  |
| Lifespan, mechanical                                    | Operations  | $\times 10^6$ | 0.1  |
| Lifespan, electrical (AC-3 at 400 V)                    | Operations  | $\times 10^6$ | 0.1  |
| Maximum operating frequency                             |             | Ops./h        |  |
| Max. operating frequency                                |             | Ops/h         | 40   |
| Short-circuit rating                                    |             |               |  |
| DC  |             |               |  |
| Short-circuit rating                                    |             | kA            | 40   |
| Short-circuit rating                                    |             |               | 60 (up to PKZM0-16)<br>40 (PKZM0-20 to PKZM0-32) |
| Motor switching capacity                                |             | $kA_{rms}$    |  |
| 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                      |  | $\times I_u$ | 0.6 - 1                             |
| Short-circuit release fixed                             |  | $\times I_u$ | 15                                  |
| Fixed short-circuit release                             |  |              | Basic device $15.5 \times I_u$      |
| Short-circuit release tolerance                         |  |              | $\pm 20\%$                          |
| 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  | 25   |
| Equipment heat dissipation, current-dependent            | $P_{vid}$  | W  | 7.04                                       |
| 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.                         |

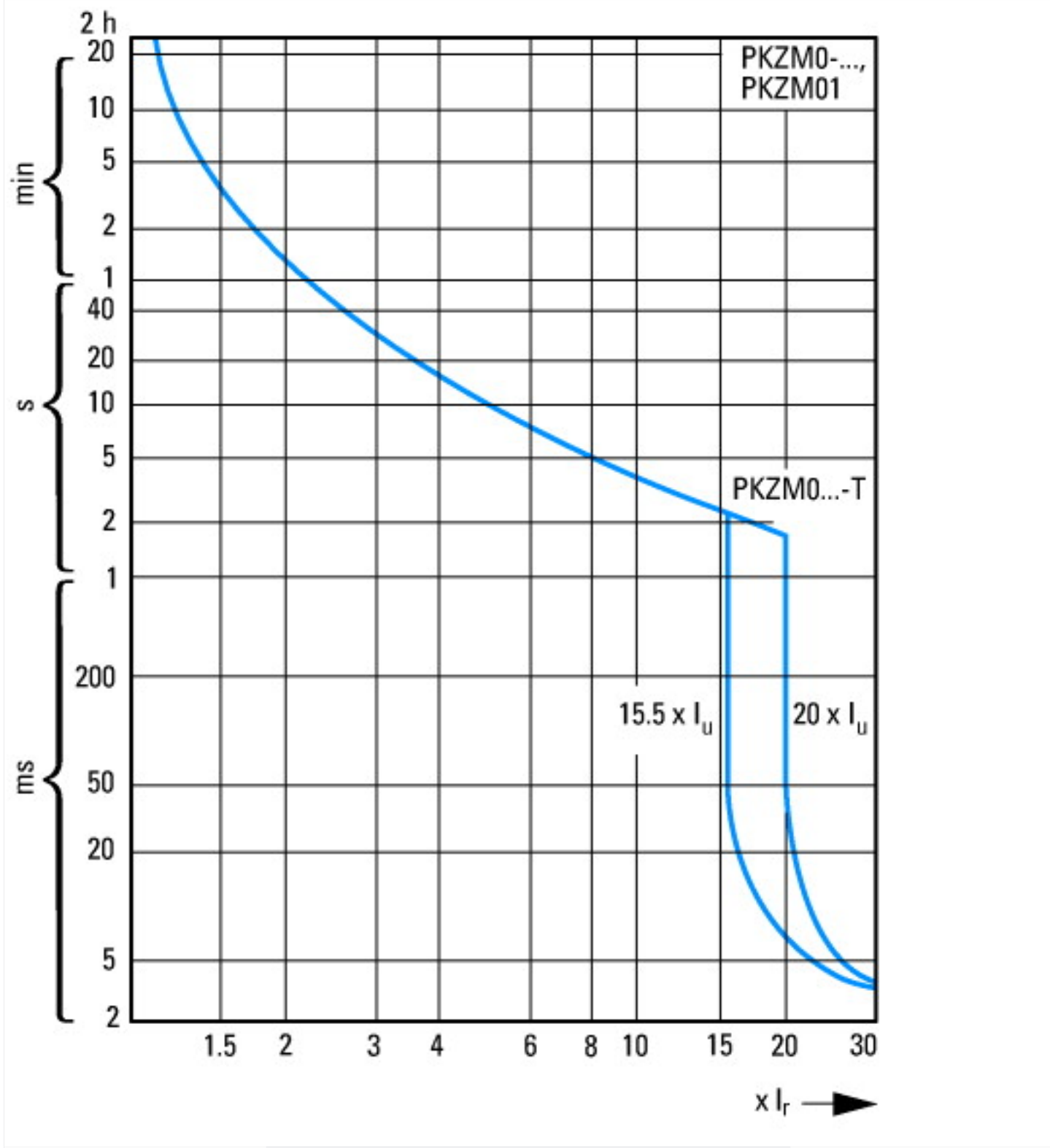
## Technical data ETIM 5.0

|  |    |  |
|--|----|--|
| Low-voltage industrial components (EG000017) / Motor protective circuit-breaker (EC000074)   |    |  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker motor protection (ecl@ss8-27-37-04-01 [AGZ529012]) |    |  |
| Setting range overload protector   | A  | 20 - 25                                  |
| Adjustment range undelayed short-circuit release   | A  | 388 - 388                                |
| Phase failure sensitive  |    | Yes                                      |
| Switch off technique   |    | Thermomagnetic                           |
| Rated operating voltage  | V  | 690 - 690                                |
| Rated permanent current I <sub>u</sub>   | A  | 25                                       |
| Rated operation power at AC-3, 230 V   | kW | 5.5                                      |
| Rated operation power at AC-3, 400 V   | kW | 12.5                                     |
| Connection type main current circuit   |    | Screw connection                         |
| 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                                     |

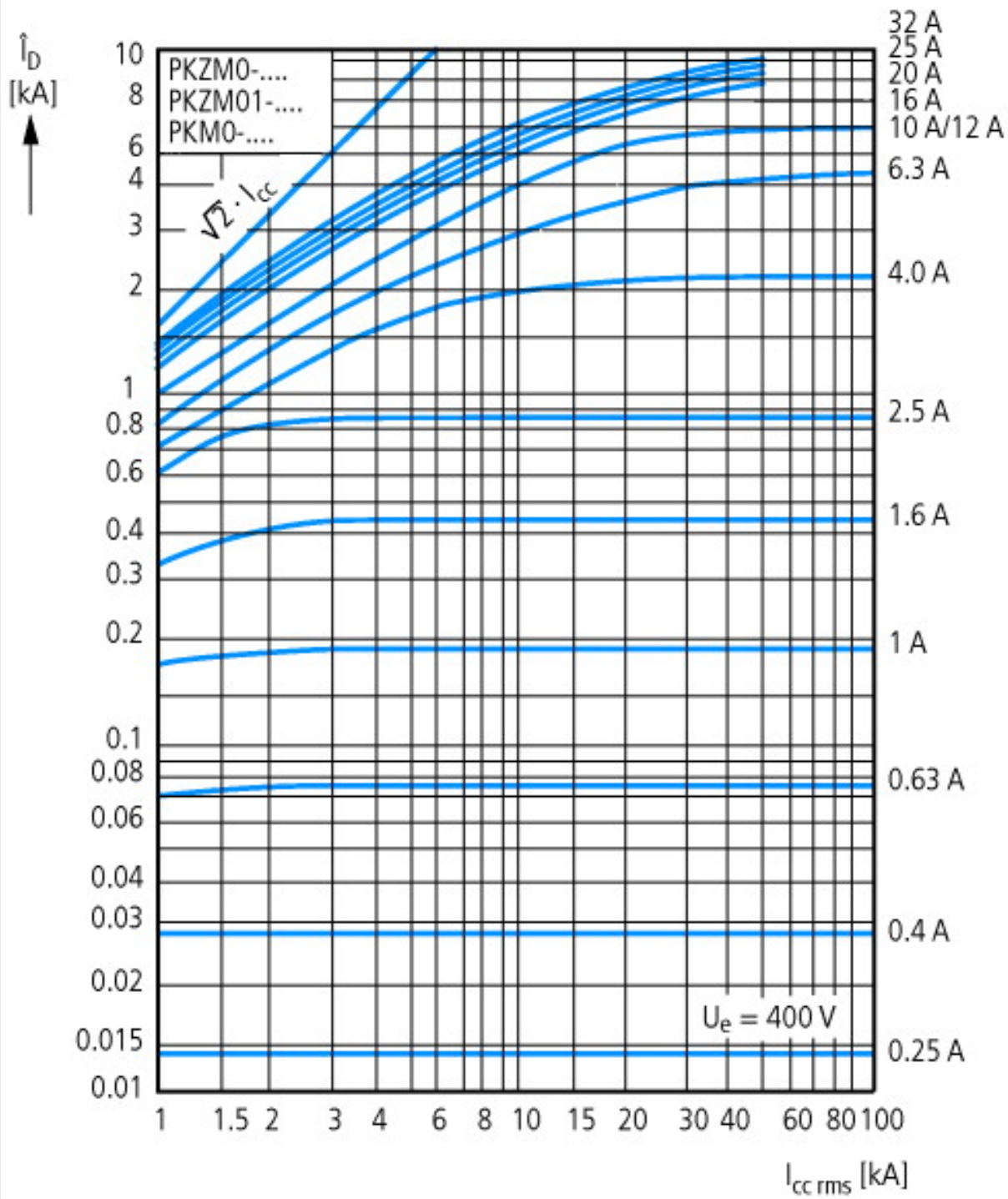
## Approvals

|                                      |  |  |
|--------------------------------------|--|--|
| Product Standards                    |  | UL 508; CSA-C22.2 No. 14; IEC60947-4-1; 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   |
| Specially designed for North America |  | No   |
| Suitable for                         |  | Branch circuit: Manual type E if used with terminal, or suitable for group installations |

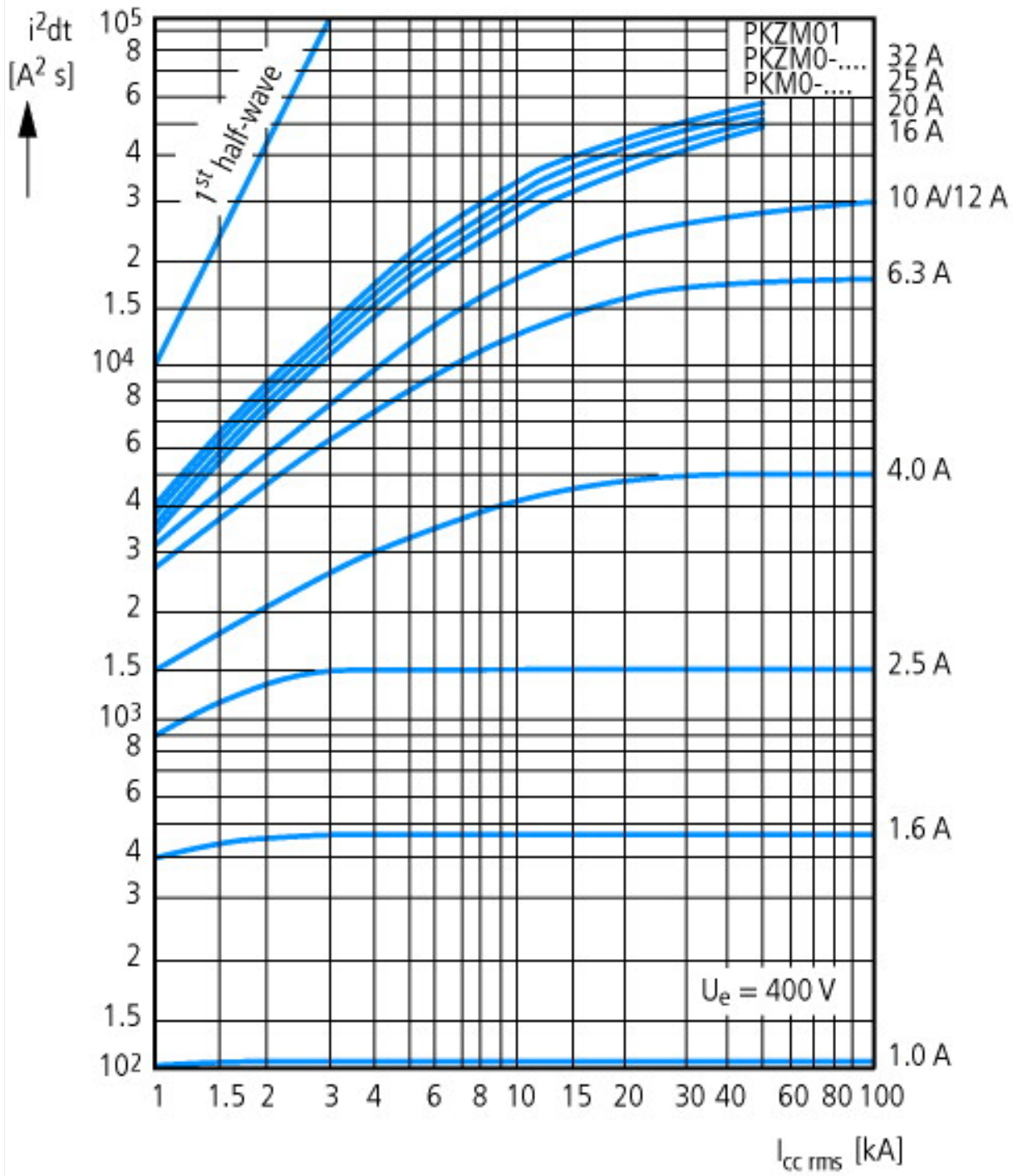
# Characteristics



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

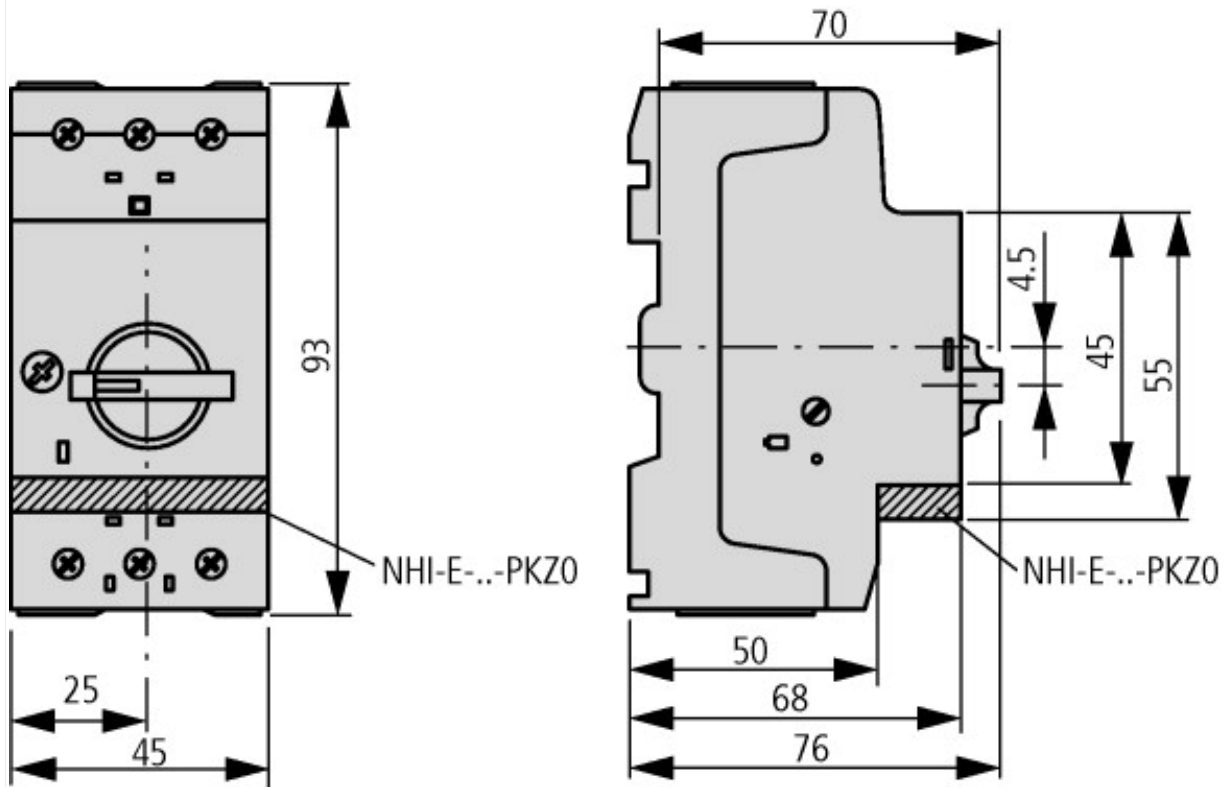


Let-through current

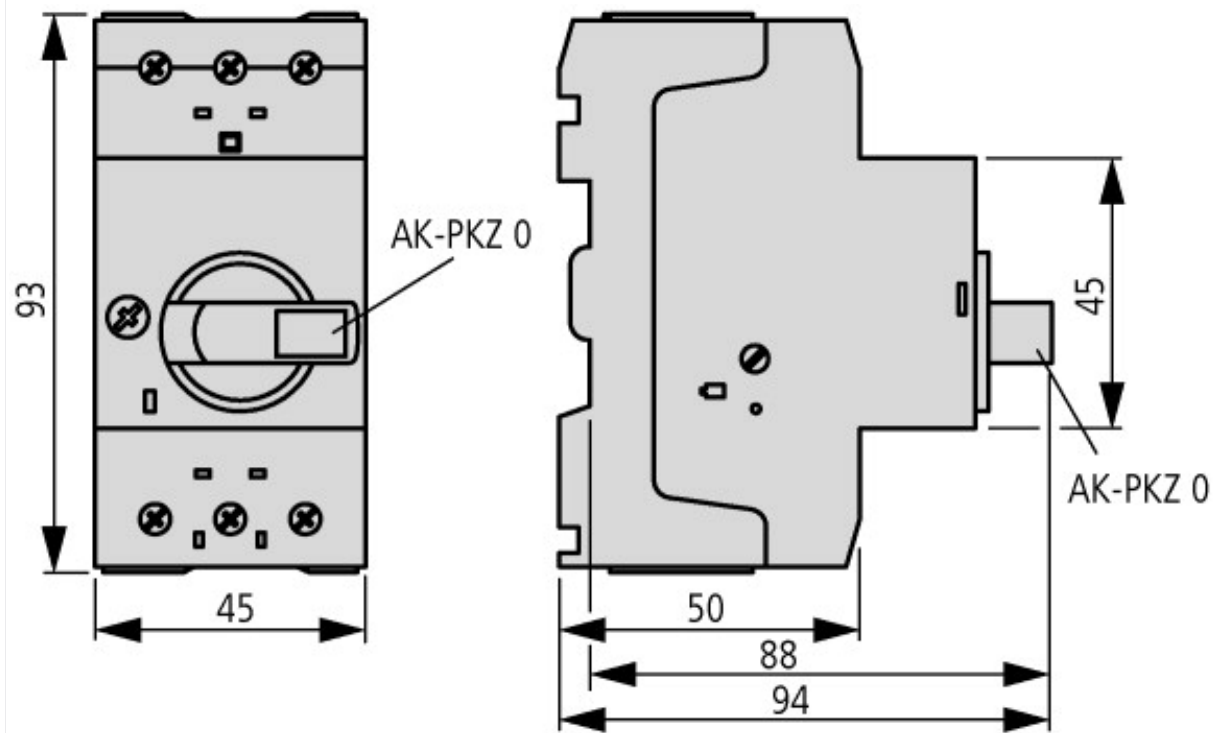


Let-through energy

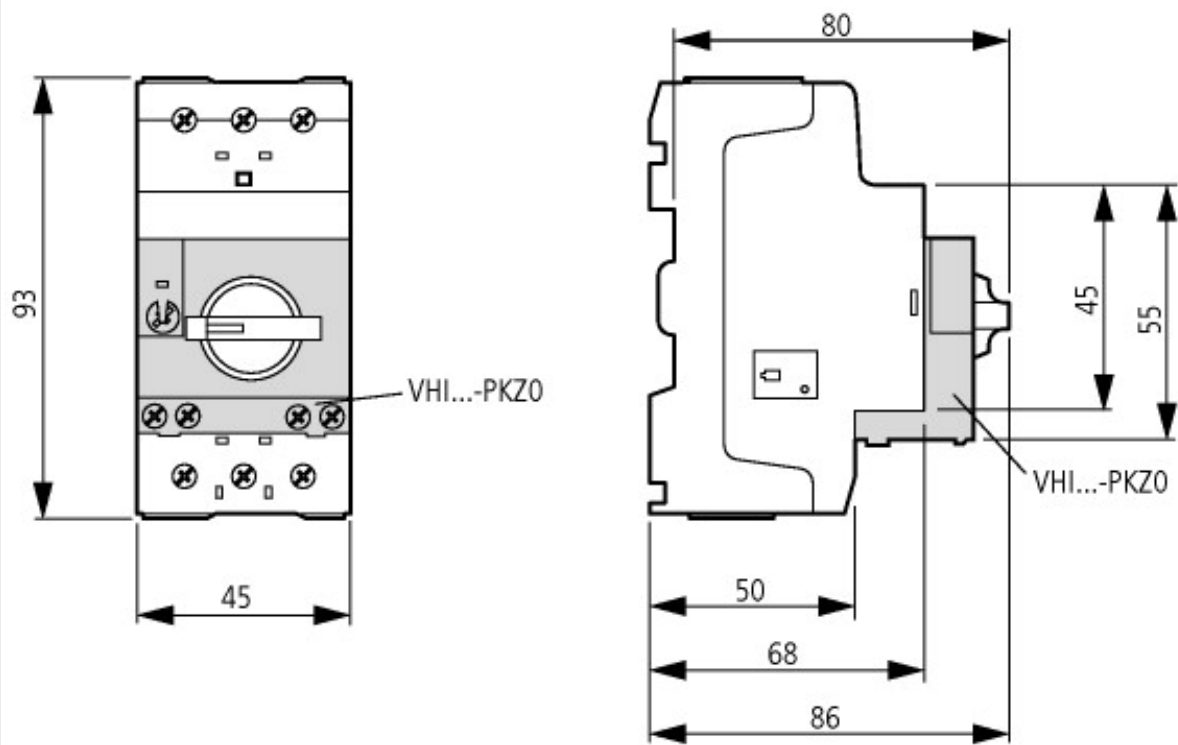
## Dimensions



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/IL03407010Z2014\\_02.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407010Z2014_02.pdf)

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

IL03407011Z (AWA1210-1925) Motor-protective circuit-breaker [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407011Z2014\\_02.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407011Z2014_02.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](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03402003Z_DE_EN.pdf)

Motor starters and "Special Purpose Ratings" for the North American market [http://www.moeller.net/binary/ver\\_techpapers/ver953en.pdf](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](http://www.moeller.net/binary/ver_techpapers/ver960en.pdf)