



Transformer-protective circuit-breaker, 3p, Ir=2.5-4A, screw connection



Part no. PKZM0-4-T  
 Catalog No. 088914  
 Alternate Catalog No. XTPT004BC1NL  
 EL-Nummer (Norway) 4315157

## Delivery program

|                                                                                                                                                         |          |   |                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---|-------------------------------------------------------------------------------------------------------------------------|
| Product range                                                                                                                                           |          |   | PKZM0...T transformer-protective circuit-breakers up to 25 A                                                            |
| Basic function                                                                                                                                          |          |   | Transformer protection                                                                                                  |
|                                                                                                                                                         |          |   |                                                                                                                         |
| Notes                                                                                                                                                   |          |   | Also suitable for motors with efficiency class IE3.<br>IE3-ready devices are identified by the logo on their packaging. |
| Connection technique                                                                                                                                    |          |   | Screw terminals                                                                                                         |
| Contact sequence                                                                                                                                        |          |   |                                                                                                                         |
| Rated uninterrupted current                                                                                                                             | $I_u$    | A | 4                                                                                                                       |
| Setting range                                                                                                                                           |          |   |                                                                                                                         |
| Overload releases                                                                                                                                       | $I_r$    | A | 2.5 - 4                                                                                                                 |
|                                                                                                                                                         |          |   |                                                                                                                         |
| short-circuit release                                                                                                                                   |          |   |                                                                                                                         |
|                                                                                                                                                         |          |   |                                                                                                                         |
| max.                                                                                                                                                    | $I_{rm}$ | A | 84                                                                                                                      |
| Phase-failure sensitivity                                                                                                                               |          |   | IEC/EN 60947-4-1, VDE 0660 Part 102                                                                                     |
| <b>Notes</b> For the protection of transformers with a high inrush current.<br>Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height. |          |   |                                                                                                                         |

## 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                                                                      |
| Mounting position                                                         |  |    |                                                                                |
| 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 <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                    |
| 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 <sub>imp</sub>                | V AC              | 6000                     |
| Overvoltage category/pollution degree                   |                                 |                   | III/3                    |
| Rated operational voltage                               | U <sub>e</sub>                  | V AC              | 690                      |
| Rated uninterrupted current = rated operational current | I <sub>u</sub> = I <sub>e</sub> | A                 | 4                        |
| Rated frequency                                         | f                               | Hz                | 40 - 60                  |
| Current heat loss (3 pole at operating temperature)     |                                 | W                 | 4.88                     |
| Lifespan, mechanical                                    | Operations                      | x 10 <sup>6</sup> | 0.1                      |
| Lifespan, electrical (AC-3 at 400 V)                    |                                 |                   |                          |
| Lifespan, electrical                                    | Operations                      | x 10 <sup>6</sup> | 0.1                      |
| Max. operating frequency                                |                                 | Ops/h             | 40                       |
| Short-circuit rating                                    |                                 |                   |                          |
| DC                                                      |                                 |                   |                          |
| Short-circuit rating                                    |                                 | kA                | 60                       |
| Motor switching capacity                                |                                 |                   |                          |
| AC-3 (up to 690V)                                       |                                 | A                 | 4                        |
| DC-5 (up to 250V)                                       |                                 | A                 | 4 (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                               |
| Setting range of overload releases                    |  | x I <sub>u</sub> | 0.6 - 1                                  |
| short-circuit release                                 |  |                  | Basic device, fixed: 20 x I <sub>u</sub> |
| Short-circuit release tolerance                       |  |                  | ± 20%                                    |
| Phase-failure sensitivity                             |  |                  | IEC/EN 60947-4-1, VDE 0660 Part 102      |

Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|--------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                    |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 4                                                                  |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 1.63                                                               |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 4.88                                                               |
| Static heat dissipation, non-current-dependent                                                                         | P <sub>vs</sub>   | W  | 0                                                                  |
| Heat dissipation capacity                                                                                              | P <sub>diss</sub> | 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.                         |

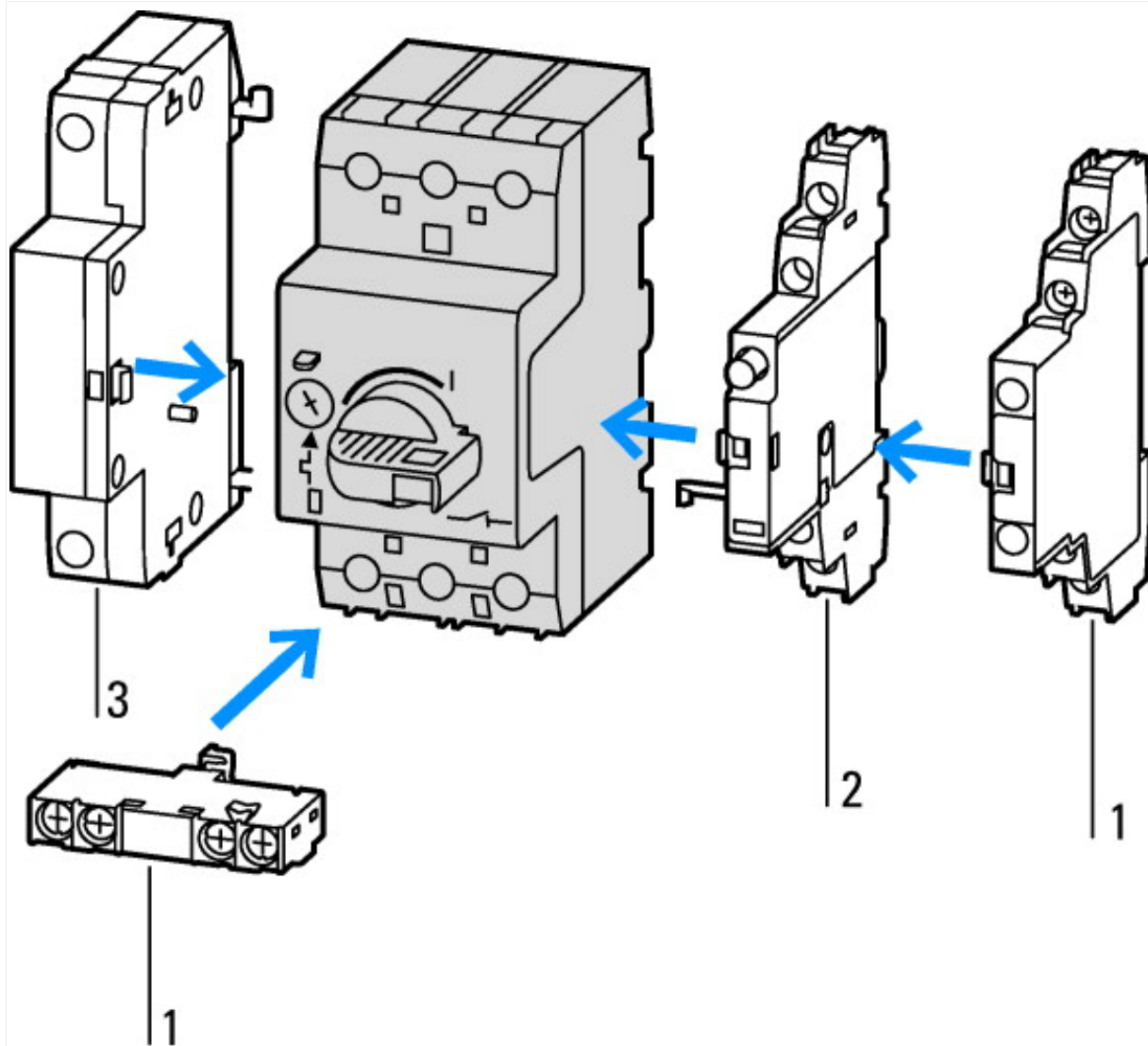
## Technical data ETIM 7.0

|                                                                                                                                                                                                                                             |    |                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------|
| Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)                                                                                                                 |    |                  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecI@ss10.0.1-27-37-04-09 [AJZ716013]) |    |                  |
| Rated permanent current I <sub>u</sub>                                                                                                                                                                                                      | A  | 4                |
| Rated voltage                                                                                                                                                                                                                               | V  | 690 - 690        |
| Rated short-circuit breaking capacity I <sub>cu</sub> at 400 V, 50 Hz                                                                                                                                                                       | kA | 150              |
| Overload release current setting                                                                                                                                                                                                            | A  | 4 - 4            |
| Adjustment range short-term delayed short-circuit release                                                                                                                                                                                   | A  | 0 - 0            |
| Adjustment range undelayed short-circuit release                                                                                                                                                                                            | A  | 84 - 84          |
| Integrated earth fault protection                                                                                                                                                                                                           |    | No               |
| Type of electrical connection of main circuit                                                                                                                                                                                               |    | Screw connection |
| Device construction                                                                                                                                                                                                                         |    | Other            |
| Suitable for DIN rail (top hat rail) mounting                                                                                                                                                                                               |    | Yes              |
| DIN rail (top hat rail) mounting optional                                                                                                                                                                                                   |    | Yes              |
| Number of auxiliary contacts as normally closed contact                                                                                                                                                                                     |    | 0                |
| Number of auxiliary contacts as normally open contact                                                                                                                                                                                       |    | 0                |
| Number of auxiliary contacts as change-over contact                                                                                                                                                                                         |    | 0                |
| With switched-off indicator                                                                                                                                                                                                                 |    | Yes              |
| With under voltage release                                                                                                                                                                                                                  |    | No               |
| Number of poles                                                                                                                                                                                                                             |    | 3                |
| Position of connection for main current circuit                                                                                                                                                                                             |    | Other            |
| Type of control element                                                                                                                                                                                                                     |    | Turn button      |
| Complete device with protection unit                                                                                                                                                                                                        |    | Yes              |
| Motor drive integrated                                                                                                                                                                                                                      |    | No               |
| Motor drive optional                                                                                                                                                                                                                        |    | No               |
| Degree of protection (IP)                                                                                                                                                                                                                   |    | IP20             |

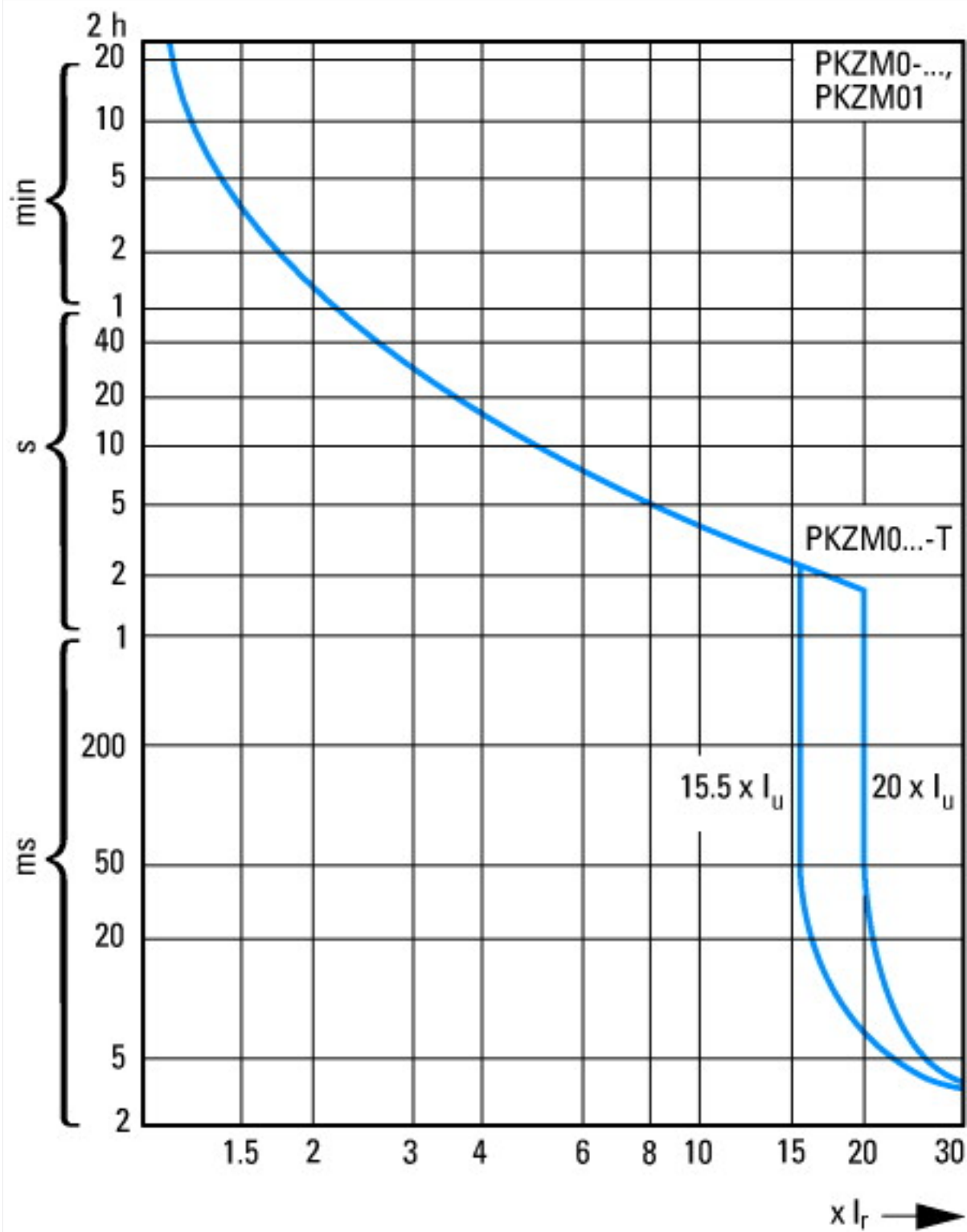
## Approvals

|                                      |  |    |
|--------------------------------------|--|----|
| Specially designed for North America |  | No |
|--------------------------------------|--|----|

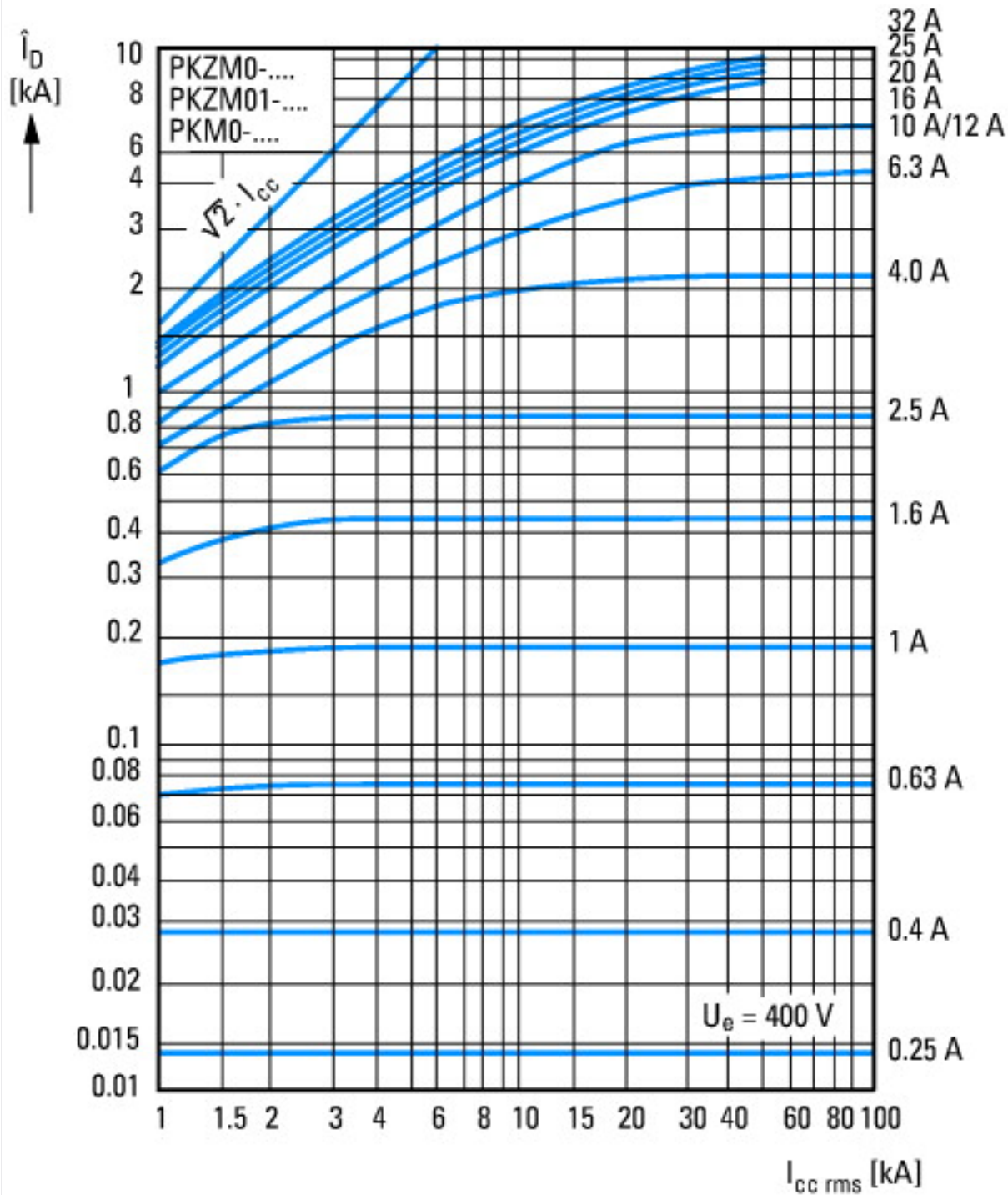
## Characteristics



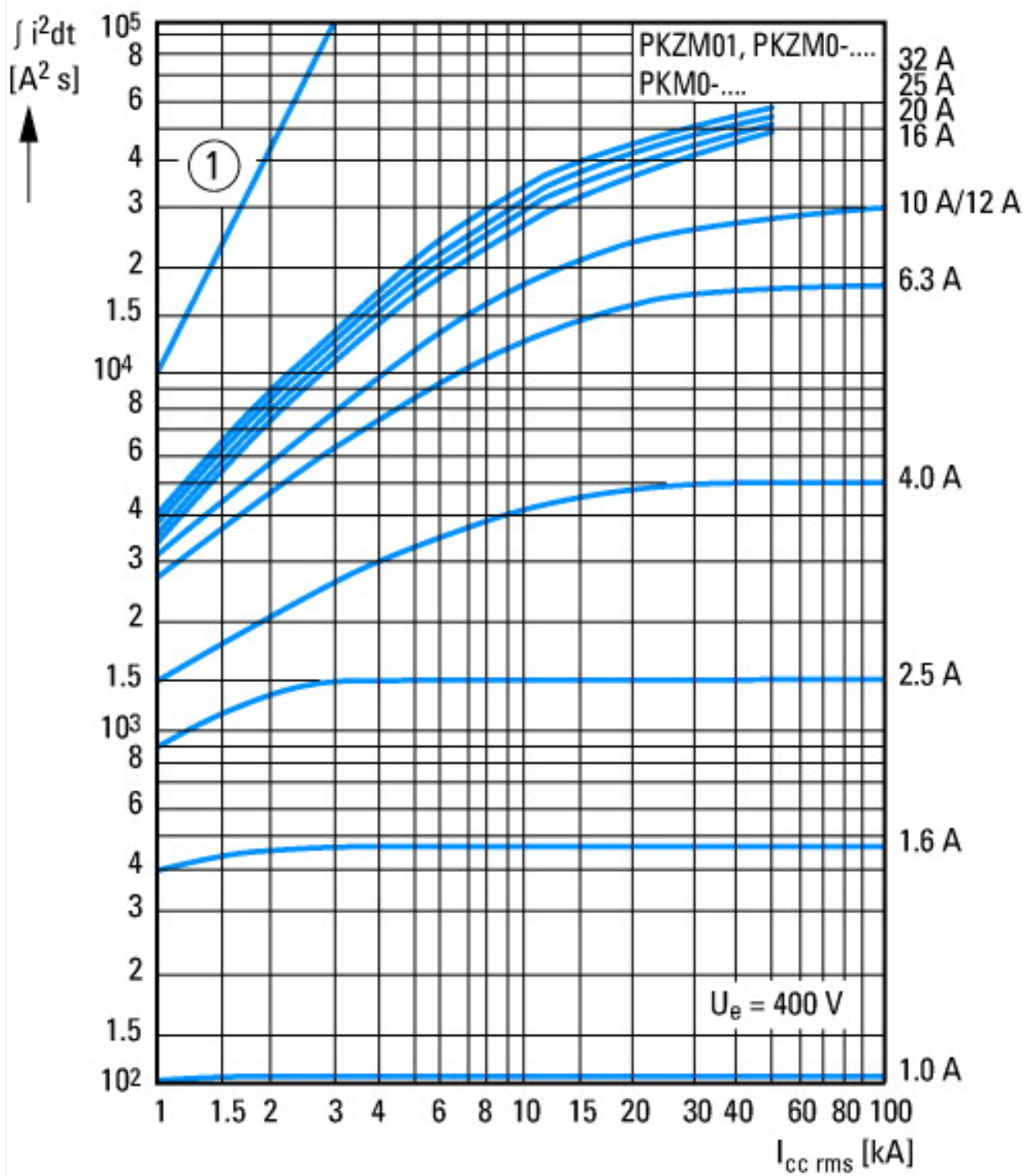
- 1: Standard auxiliary contact
- 2: Trip-indicating auxiliary contact
- 3: Shunt releases, undervoltage releases



Tripping characteristics motor-protector circuit breaker PKZM0, PKZM0...T (not for PKM0...), PKZM01

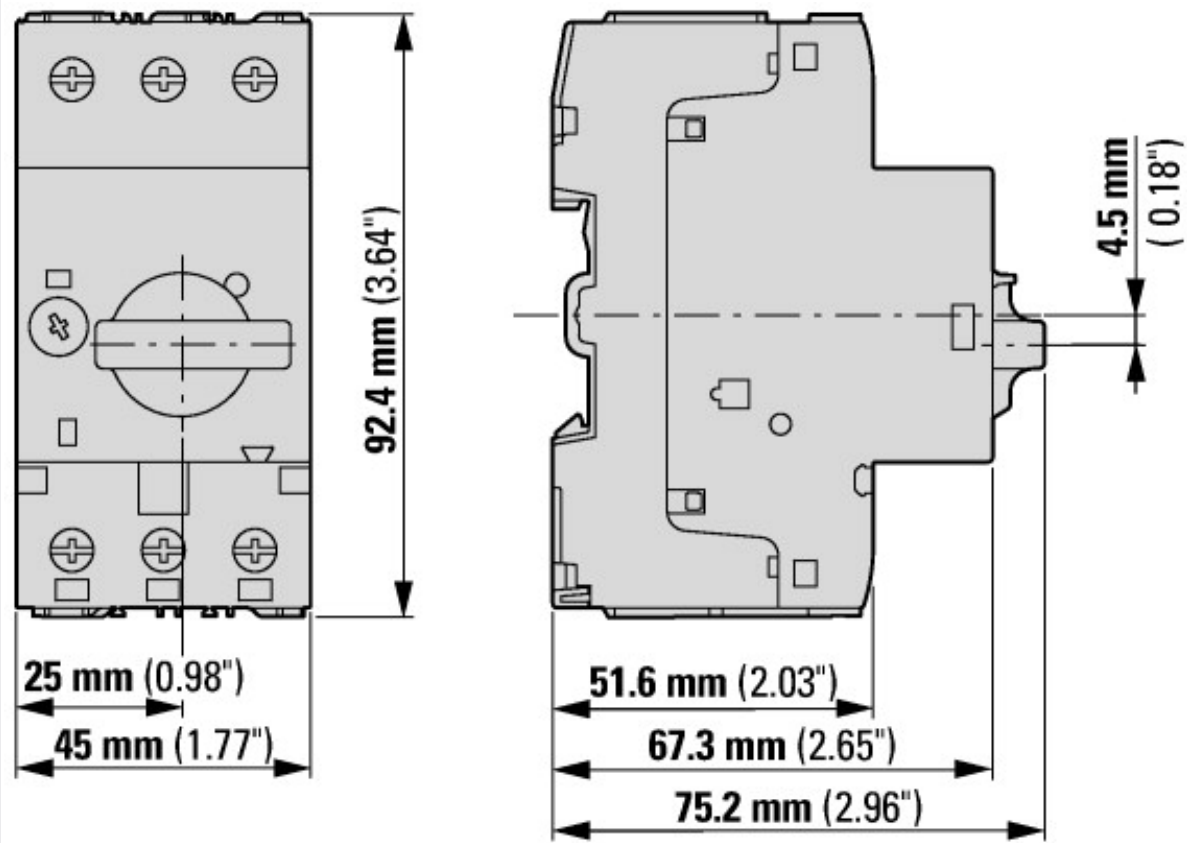


Let-through current

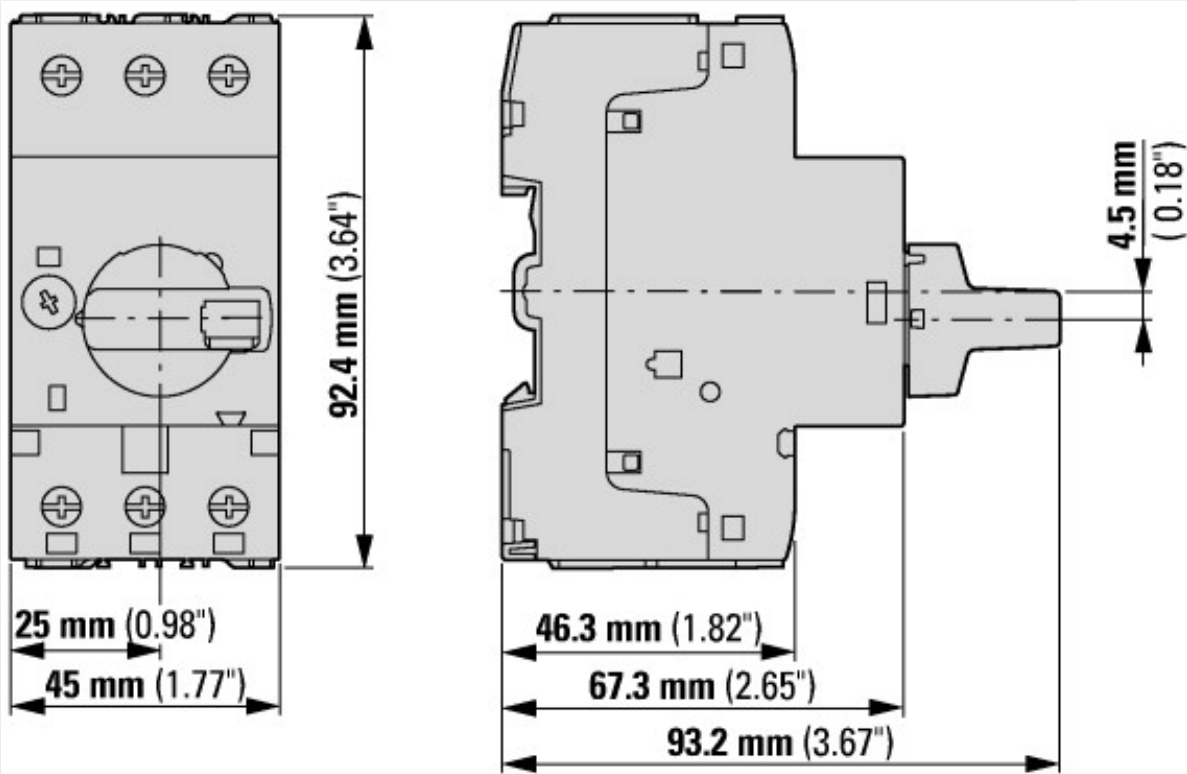


① 1 half-cycle  
Let-through energy

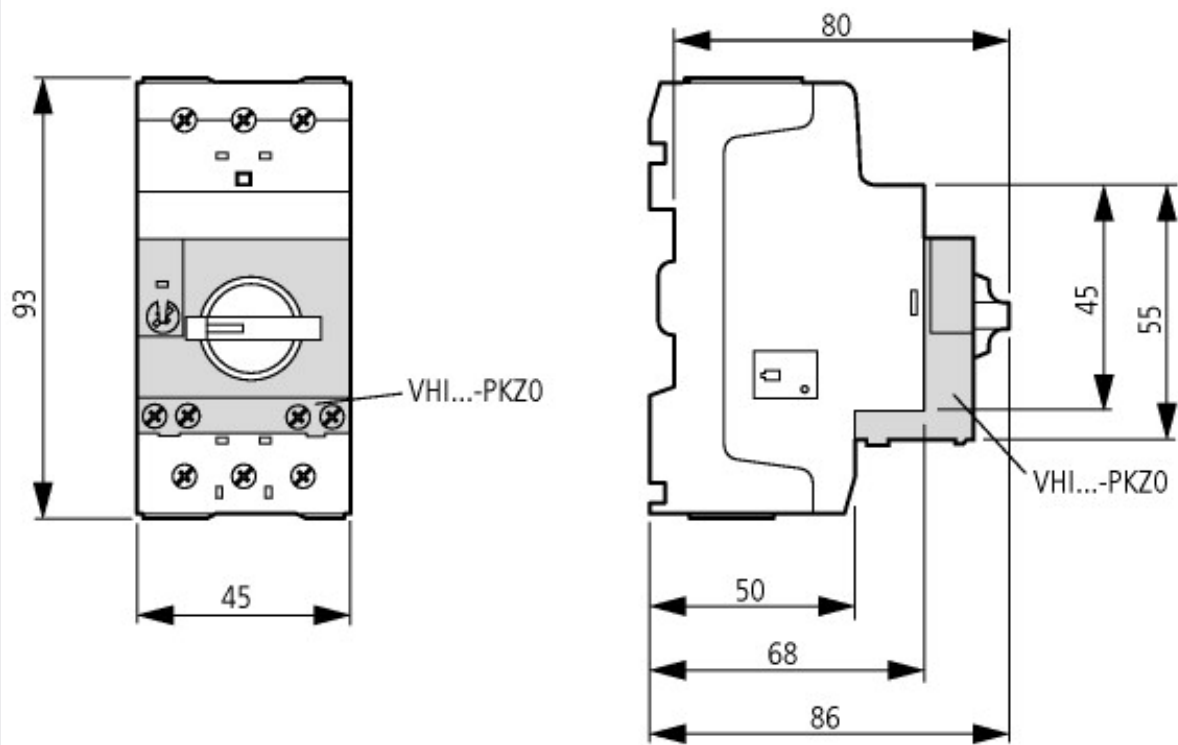
Dimensions



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)

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

IL03407011Z (AWA1210-1925) Motor-protective circuit-breaker [https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407011Z2018\\_04.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407011Z2018_04.pdf)

### 'IL03402034Z (AWA121-1945) Motor-protective circuit-breaker, Starter

'IL03402034Z (AWA121-1945) Motor-protective circuit-breaker, Starter [https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03402034Z2018\\_06.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402034Z2018_06.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 [https://es-assets.eaton.com/DOCUMENTATION/AWB\\_MANUALS/MN03402003Z\\_DE\\_EN.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN03402003Z_DE_EN.pdf)

Schaltvermögen [https://de.ecat.eaton.com/flip-cat/?edition=MOTCONT1\\_DE#page\\_3/44](https://de.ecat.eaton.com/flip-cat/?edition=MOTCONT1_DE#page_3/44)

Motor starters and "Special Purpose Ratings" for the North American market [http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct\\_3258146.pdf](http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.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)