



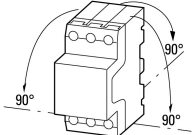
## Motor-protective circuit-breaker, 3p, Ir=6.3-10A, screw connection

**Part no.** PKZM0-10  
**Article no.** 072739  
**Catalog No.** XTPR010BC1NL

### Delivery programme

|                                                                                                                                                              |          |    |                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----|-------------------------------------------------------------------------------------------------------------------------|
| Product range                                                                                                                                                |          |    | PKZM0 motor protective circuit-breakers up to 32 A                                                                      |
| Basic function                                                                                                                                               |          |    | Motor 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                                                                                                         |
| <b>Max. motor rating</b>                                                                                                                                     |          |    |                                                                                                                         |
| AC-3                                                                                                                                                         |          |    |                                                                                                                         |
| 220 V 230 V 240 V                                                                                                                                            | P        | kW | 2.2                                                                                                                     |
| 380 V 400 V 415 V                                                                                                                                            | P        | kW | 4                                                                                                                       |
| 440 V                                                                                                                                                        | P        | kW | 4                                                                                                                       |
| 500 V                                                                                                                                                        | P        | kW | 4                                                                                                                       |
| 660 V 690 V                                                                                                                                                  | P        | kW | 7.5                                                                                                                     |
| <b>Setting range</b>                                                                                                                                         |          |    |                                                                                                                         |
| Overload releases                                                                                                                                            | $I_r$    | A  | 6.3 - 10                                                                                                                |
|                                                                           |          |    |                                                                                                                         |
| Short-circuit releases                                                                                                                                       |          |    |                                                                                                                         |
|                                                                           |          |    |                                                                                                                         |
| max.                                                                                                                                                         | $I_{rm}$ | A  | 155                                                                                                                     |
| <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 |          |    |                                                                                                                         |
| <br>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          |   |    |                                                                                      |
| Storage                      | θ | °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 <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                 | 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                      | x 10 <sup>6</sup> | 0.1                                              |
| Lifespan, electrical (AC-3 at 400 V)                    | Operations                      | x 10 <sup>6</sup> | 0.1                                              |
| Maximum operating frequency                             |                                 | Ops./h            |                                                  |
| Max. operating frequency                                |                                 | Ops/h             | 40                                               |
| Short-circuit rating                                    |                                 |                   |                                                  |
| DC                                                      |                                 |                   |                                                  |
| Short-circuit rating                                    |                                 | kA                | 60                                               |
| Short-circuit rating                                    |                                 |                   | 60 (up to PKZM0-16)<br>40 (PKZM0-20 to PKZM0-32) |
| Motor switching capacity                                |                                 | kA <sub>rms</sub> |                                                  |
| 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 <sub>u</sub> | 0.6 - 1                                    |
| Short-circuit release fixed                           |  | x I <sub>u</sub> | 15.5                                       |
| short-circuit release                                 |  |                  | Basic device, fixed: 15.5 x I <sub>u</sub> |
| 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 <sub>n</sub>    | A  | 10   |
| Heat dissipation per pole, current-dependent             | P <sub>vid</sub>  | W  | 0    |
| Equipment heat dissipation, current-dependent            | P <sub>vid</sub>  | W  | 6.48 |
| 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 6.0

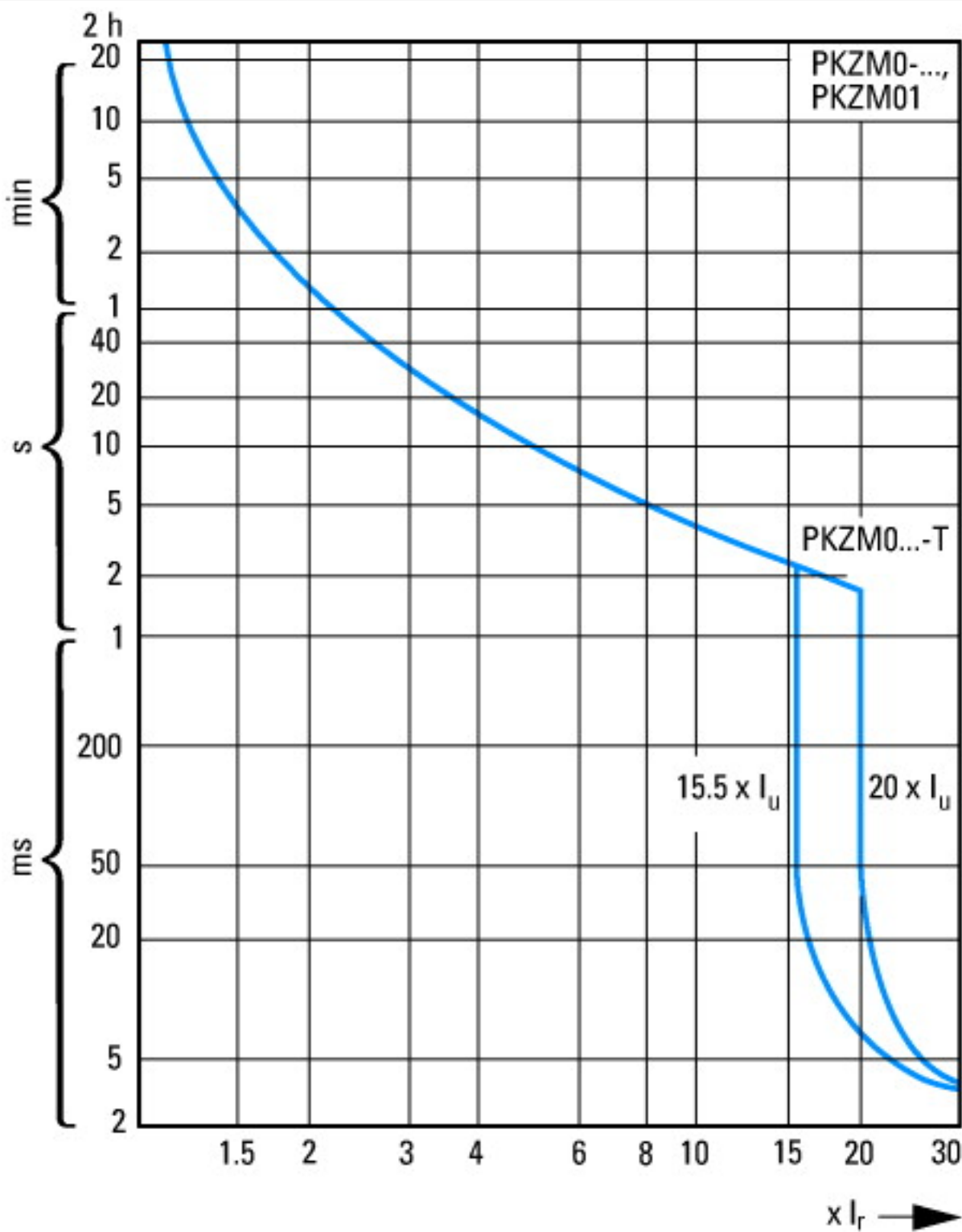
|                                                                                                                                                                                                    |    |                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------------------------------|
| 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  | 6.3 - 10                                 |
| Adjustment range undelayed short-circuit release                                                                                                                                                   | A  | 155 - 155                                |
| Thermal protection                                                                                                                                                                                 |    | No                                       |
| Phase failure sensitive                                                                                                                                                                            |    | Yes                                      |
| Switch off technique                                                                                                                                                                               |    | Thermomagnetic                           |
| Rated operating voltage                                                                                                                                                                            | V  | 690 - 690                                |
| Rated permanent current Iu                                                                                                                                                                         | A  | 10                                       |
| Rated operation power at AC-3, 230 V                                                                                                                                                               | kW | 2.2                                      |
| Rated operation power at AC-3, 400 V                                                                                                                                                               | kW | 4                                        |
| 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 | 150                                      |
| Degree of protection (IP)                                                                                                                                                                          |    | IP20                                     |
| Height                                                                                                                                                                                             | mm | 93                                       |
| Width                                                                                                                                                                                              | mm | 45                                       |
| Depth                                                                                                                                                                                              | mm | 76                                       |

## Approvals

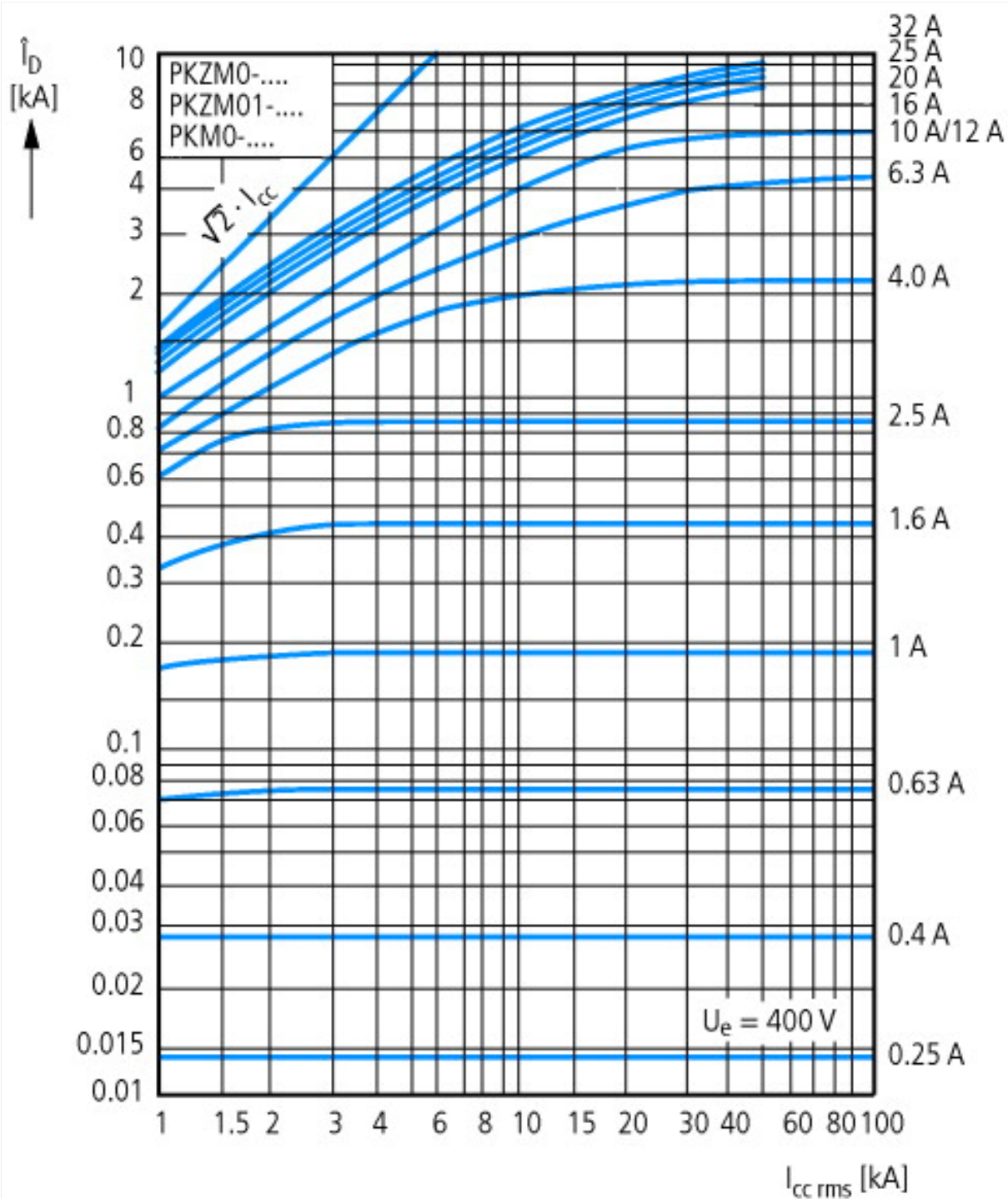
|                         |  |                                                    |
|-------------------------|--|----------------------------------------------------|
| Product Standards       |  | UL 508; CSA-C22.2 No. 14; IEC60947-4-1; CE marking |
| UL File No.             |  | E36332                                             |
| 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 |

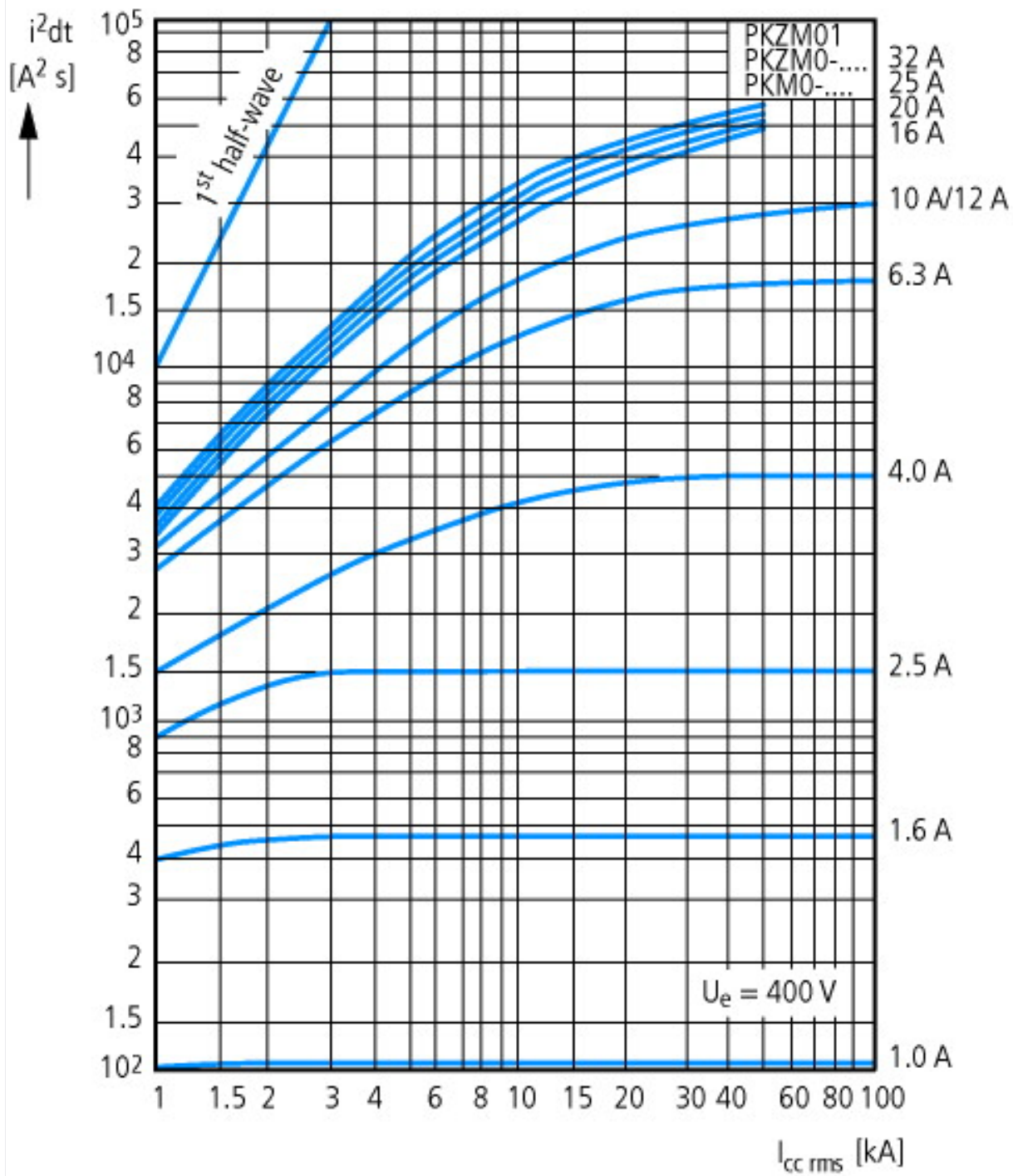
Characteristics



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

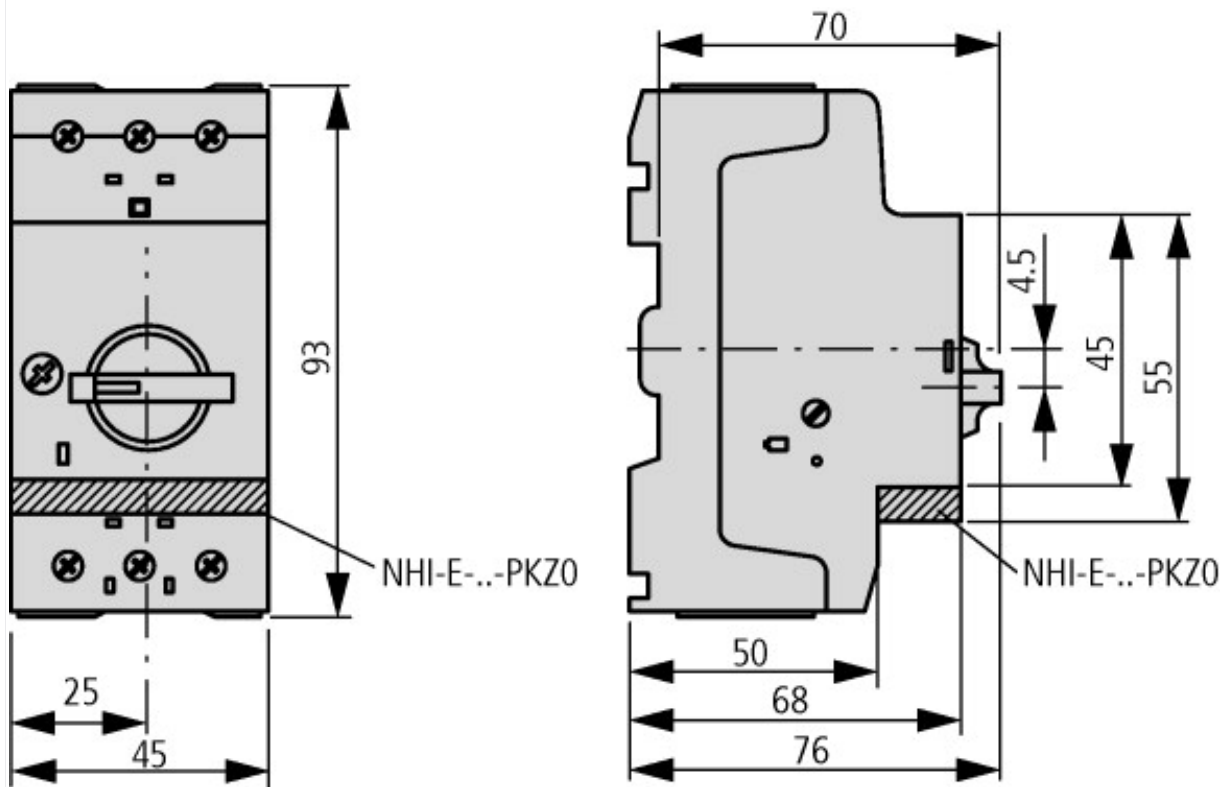


Let-through current

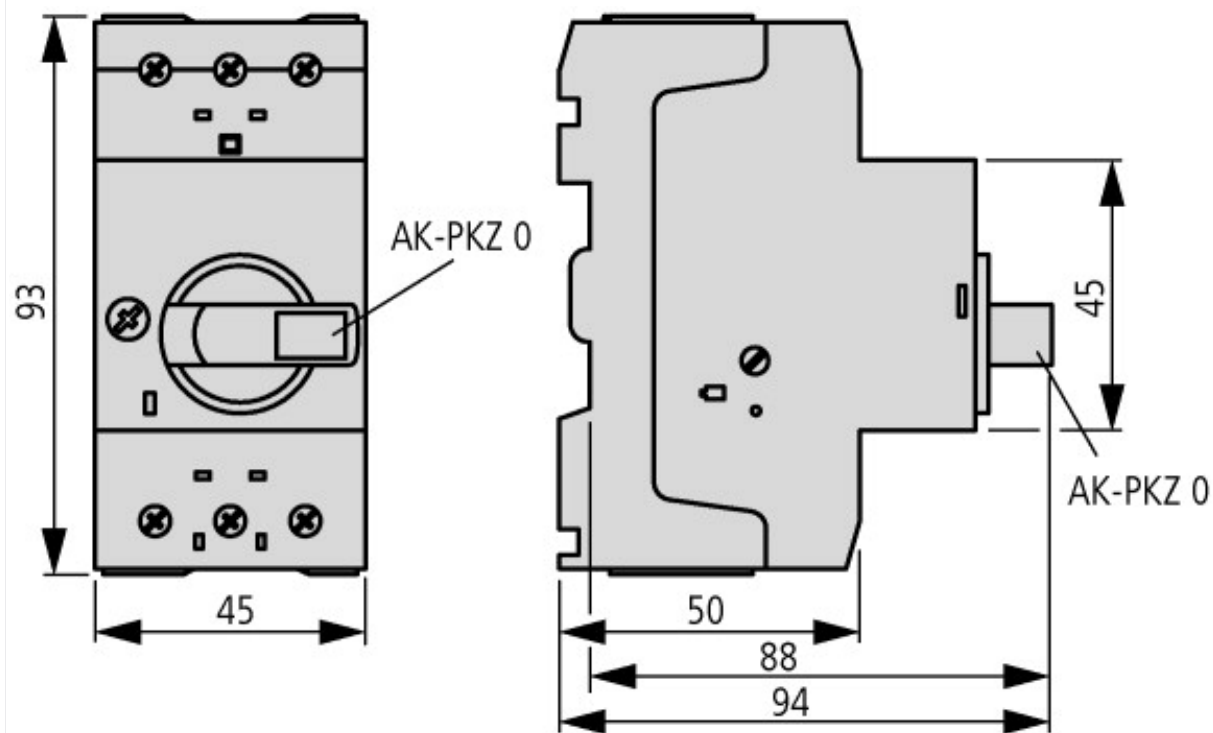


Let-through energy

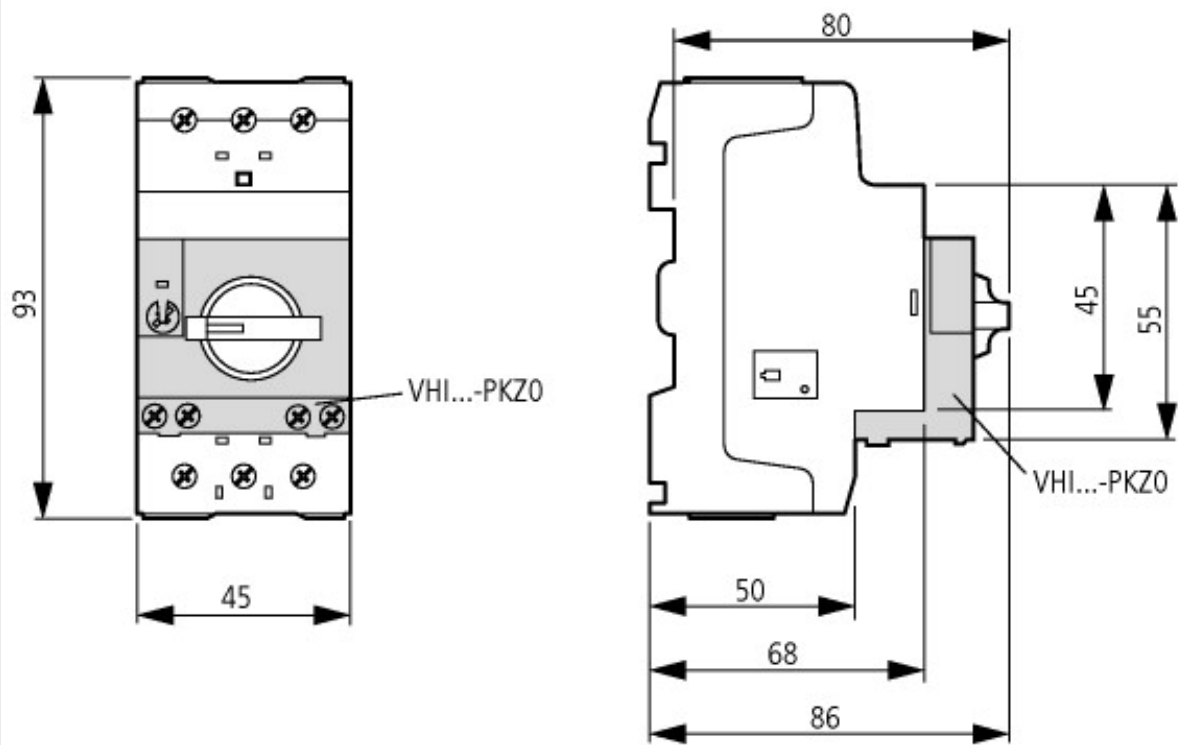
## Dimensions



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)