



Motor-protective circuit-breaker, Ir= 50 - 58 A, Screw terminals,  
Terminations: IP00

Part no.

Catalog No.

Alternate Catalog No.

EL-Nummer (Norway)

PKZM4-58

222394

XTPR058DC1NL

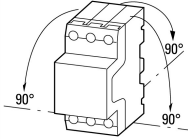
4355162

Delivery program

|  |                 |    |         |  |
|--|-----------------|----|---------|--|
| Product range  |                 |    |         | PKZM4 motor protective circuit-breakers up to 65 A                 |
| Basic function   |                 |    |         | Motor protection   |
|  |                 |    |         |  |
| Notes  |                 |    |         | Also suitable for motors with efficiency class IE3.                |
| Connection technique   |                 |    |         | Screw terminals  |
| Contact sequence   |                 |    |         |  |
| Max. motor rating  |                 |    |         |  |
| AC-3   |                 |    |         |  |
| 220 V 230 V 240 V  | P               | kW | 17      |  |
| 380 V 400 V 415 V  | P               | kW | 30      |  |
| 440 V  | P               | kW | 37      |  |
| 500 V  | P               | kW | 37      |  |
| 660 V 690 V  | P               | kW | 55      |  |
| Rated uninterrupted current  | I <sub>u</sub>  | A  | 58      |  |
| Setting range  |                 |    |         |  |
| Overload releases  | I <sub>r</sub>  | A  | 50 - 58 |  |
|  |                 |    |         |  |
| short-circuit release  |                 |    |         |  |
|  |                 |    |         |  |
| max.   | I <sub>rm</sub> | A  | 899     |  |
| Phase-failure sensitivity  |                 |    |         | IEC/EN 60947-4-1, VDE 0660 Part 102                                |
| Explosion protection (according to ATEX 94/9/EC)   |                 |    |         | PTB 10, ATEX 3012, Ex II(2) G<br>Observe manual MN03402002Z-DE/EN. |
| <b>Notes</b> Overload trigger: tripping class 10 A<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,UL, CSA   |
| 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               | 15  |
| Altitude  |  | m               | Max. 2000   |
| Terminal capacity main cable  |  |                 |   |
| Screw terminals   |  |                 |   |
| Solid   |  | mm <sup>2</sup> | 1 x (1 - 50)<br>2 x (1 - 35)  |
| Flexible with ferrule to DIN 46228  |  | mm <sup>2</sup> | 1 x (1 - 35)<br>2 x (1 - 35)  |
| Solid or stranded   |  | AWG             | 14 - 2  |
| Stripping length  |  | mm              | 14  |
| Specified tightening torque for terminal screws                           |  |                 |   |
| Main cable  |  | Nm              | 3.3   |

### 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                 | 58                        |
| Rated frequency   | f                               | Hz                | 40 - 60                   |
| Current heat loss (3 pole at operating temperature)     |                                 | W                 | 28.2                      |
| Impedance per pole                                      |                                 | mΩ                | 2                         |
| Lifespan, mechanical                                    | Operations                      | x 10 <sup>6</sup> | 0.03                      |
| Lifespan, electrical (AC-3 at 400 V)                    |                                 |                   |                           |
| Lifespan, electrical                                    | Operations                      | x 10 <sup>6</sup> | 0.03                      |
| Max. operating frequency                                |                                 | Ops/h             | 40                        |
| Short-circuit rating                                    |                                 |                   |                           |
| DC  |                                 |                   |                           |
| Short-circuit rating                                    |                                 | kA                | 60                        |
| Notes   |                                 |                   | up to 250 V               |
| Motor switching capacity                                |                                 |                   |                           |
| AC-3 (up to 690V)                                       |                                 | A                 | 58                        |
| DC-5 (up to 250V)                                       |                                 | A                 | 58 (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: 15.5 x I <sub>u</sub> |
| Short-circuit release tolerance                       |  |                  | ± 20%                                      |
| Phase-failure sensitivity                             |  |                  | IEC/EN 60947-4-1, VDE 0660 Part 102        |

### Rating data for approved types

|                      |  |    |    |
|----------------------|--|----|----|
| Switching capacity   |  |    |    |
| Maximum motor rating |  |    |    |
| Three-phase          |  |    |    |
| 460 V<br>480 V       |  | HP | 40 |
| 575 V<br>600 V       |  | HP | 50 |

|  |  |      |               |
|--|--|------|---------------|
| Single-phase                                   |  |      |               |
| 230 V<br>240 V                                 |  | HP   | 10            |
| Short Circuit Current Rating, type E           |  | SCCR |               |
| 240 V  |  | kA   | 50            |
| 480 Y / 277 V                                  |  | kA   | 50            |
| Accessories required                           |  |      | BK50/3-PKZ4-E |
| Short Circuit Current Rating, group protection |  | SCCR |               |
| 600 V High Fault                               |  |      |               |
| SCCR (fuse)                                    |  | kA   | 42            |
| max. Fuse                                      |  | A    | 600           |
| SCCR (CB)                                      |  | kA   | 42            |
| max. CB  |  | A    | 600           |

## Design verification as per IEC/EN 61439

|  |                   |    |  |
|--|-------------------|----|--|
| Technical data for design verification   |                   |    |  |
| Rated operational current for specified heat dissipation   | I <sub>n</sub>    | A  | 58   |
| Heat dissipation per pole, current-dependent   | P <sub>vid</sub>  | W  | 9.4  |
| Equipment heat dissipation, current-dependent  | P <sub>vid</sub>  | W  | 28.2   |
| 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.                         |

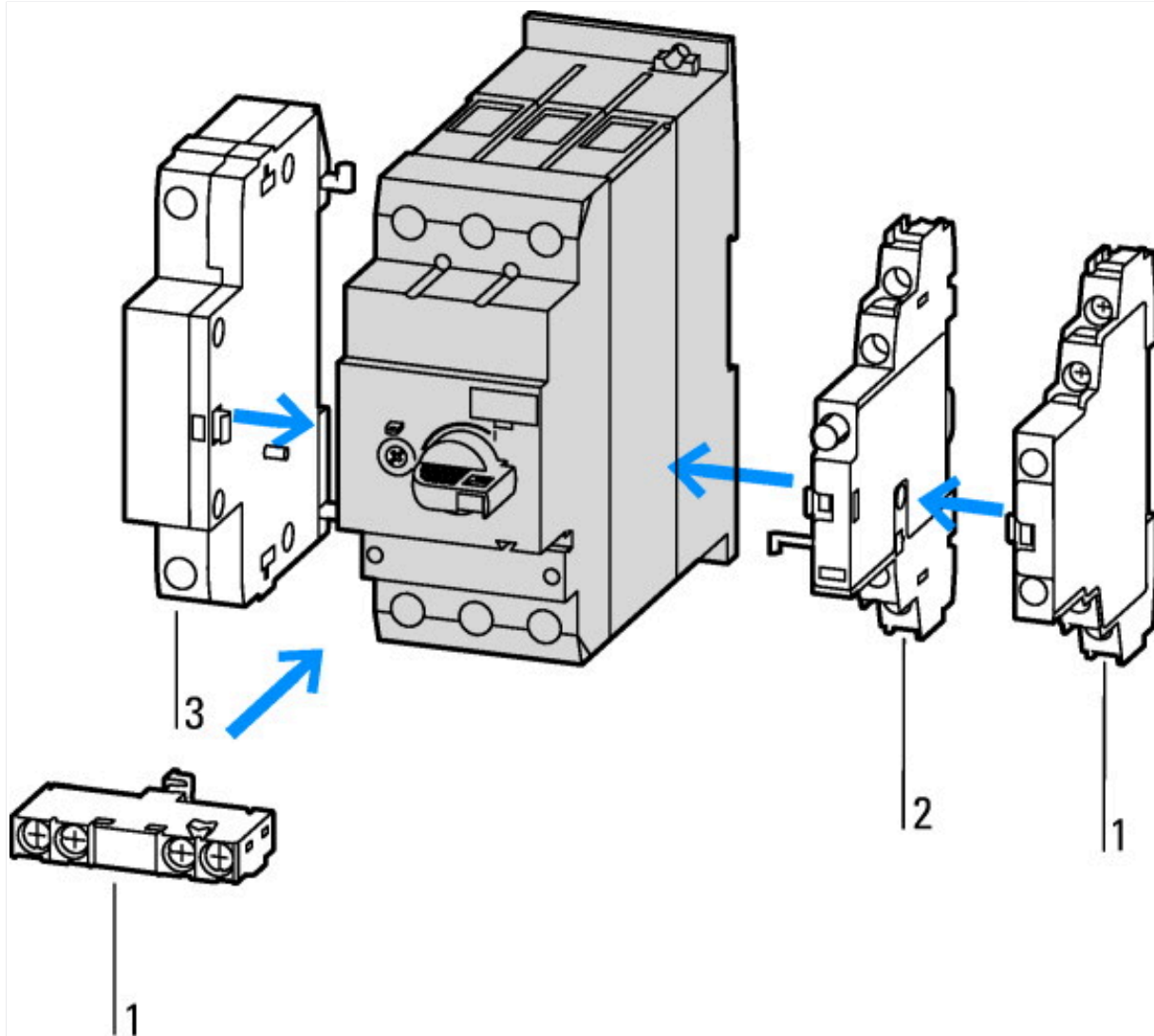
## Technical data ETIM 7.0

|   |   |         |
|---|---|---------|
| Low-voltage industrial components (EG000017) / 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 | 50 - 58 |

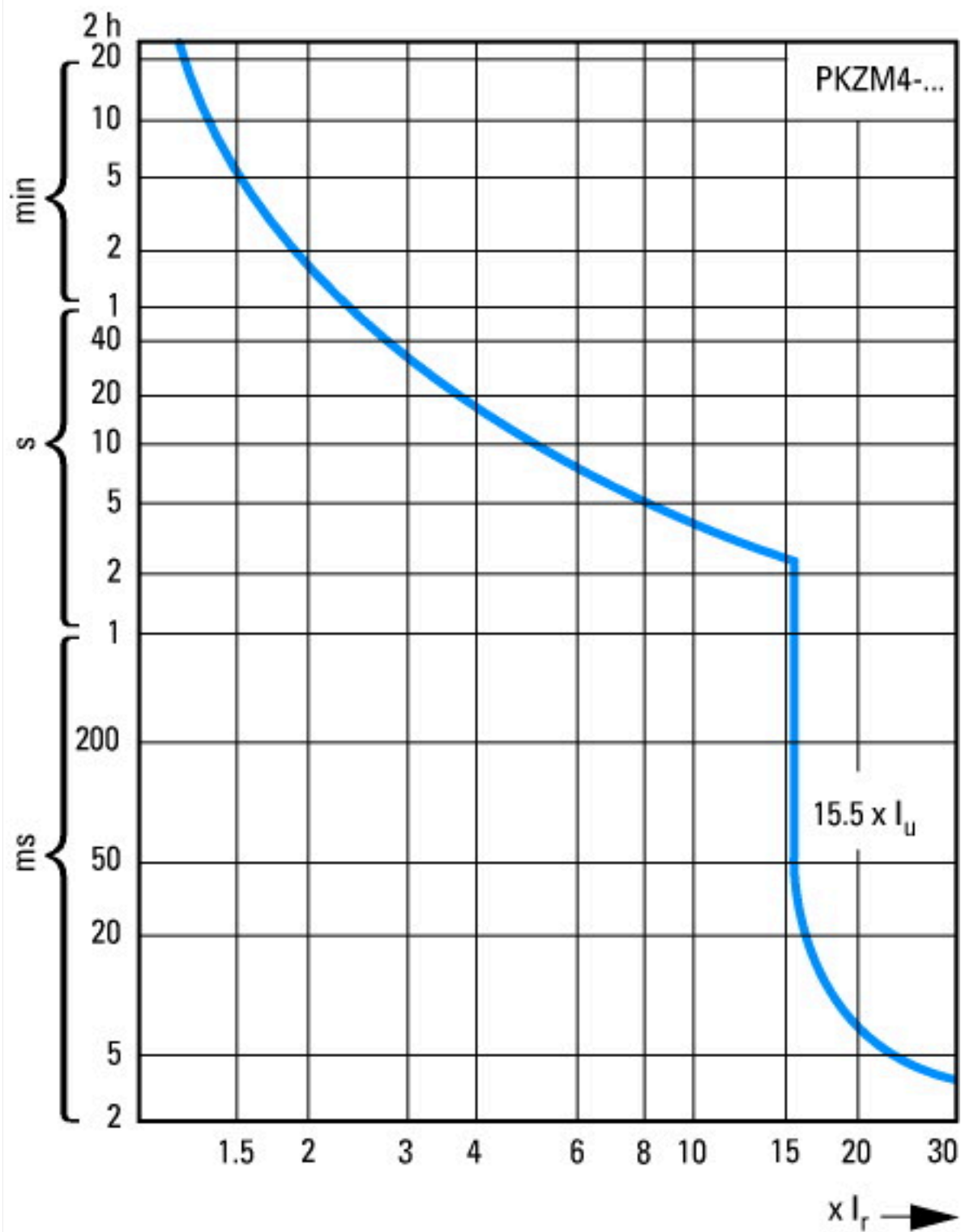
|  |    |  |
|--|----|--|
| Adjustment range undelayed short-circuit release                   | A  | 899 - 899                                |
| With thermal protection  |    | Yes                                      |
| Phase failure sensitive  |    | Yes                                      |
| Switch off technique   |    | Thermomagnetic                           |
| Rated operating voltage  | V  | 690 - 690                                |
| Rated permanent current I <sub>u</sub>                             | A  | 58                                       |
| Rated operation power at AC-3, 230 V                               | kW | 17                                       |
| Rated operation power at AC-3, 400 V                               | kW | 30                                       |
| 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 <sub>cu</sub> at 400 V, AC | kA | 50                                       |
| Degree of protection (IP)  |    | IP20                                     |
| Height   | mm | 140                                      |
| Width  | mm | 55                                       |
| Depth  | mm | 160                                      |

## 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   |
| Specially designed for North America |  | No   |
| Suitable for                         |  | Branch circuit: Manual type E if used with terminal, or suitable for group installations |

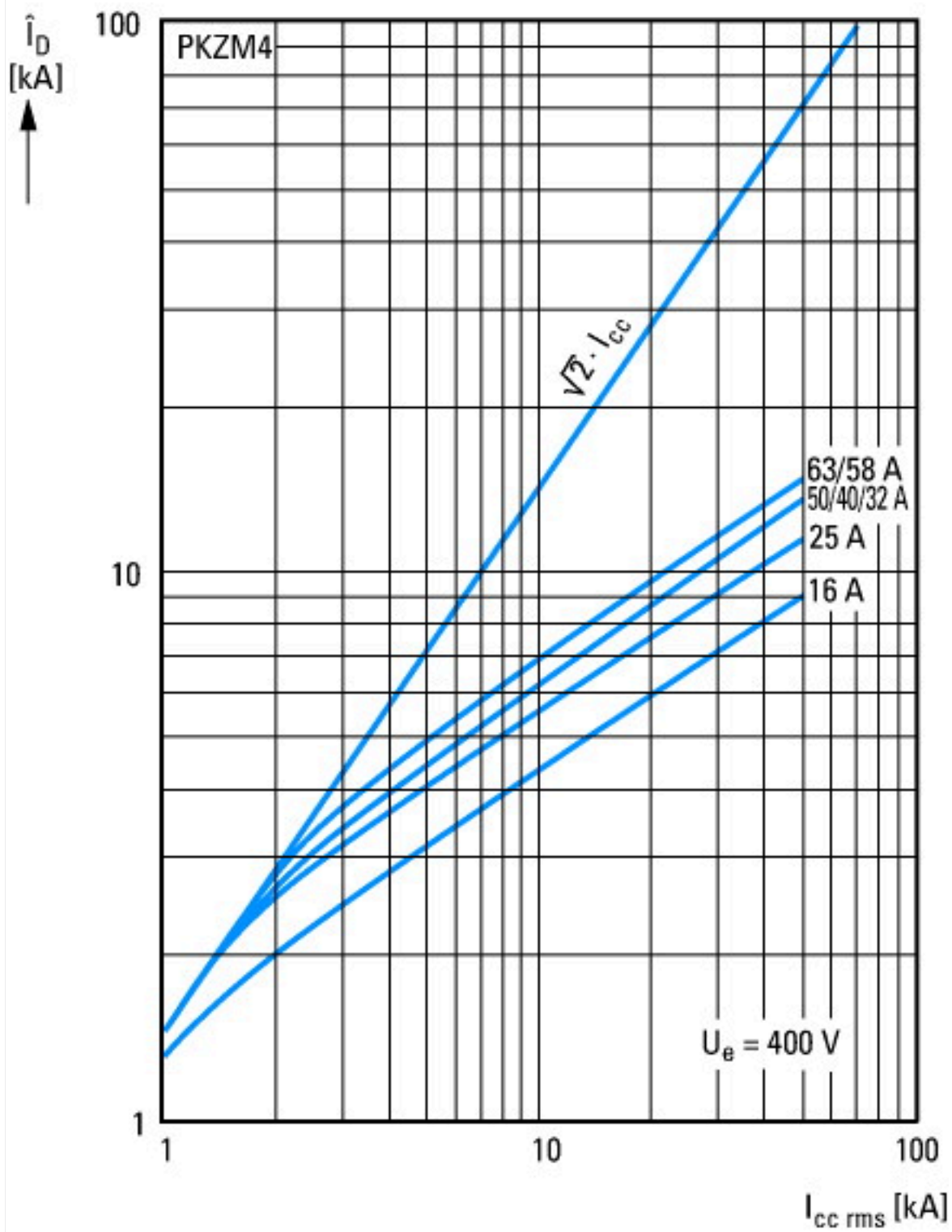


- 1: Standard auxiliary contact
- 2: Trip-indicating auxiliary contact
- 3: Shunt releases, undervoltage releases

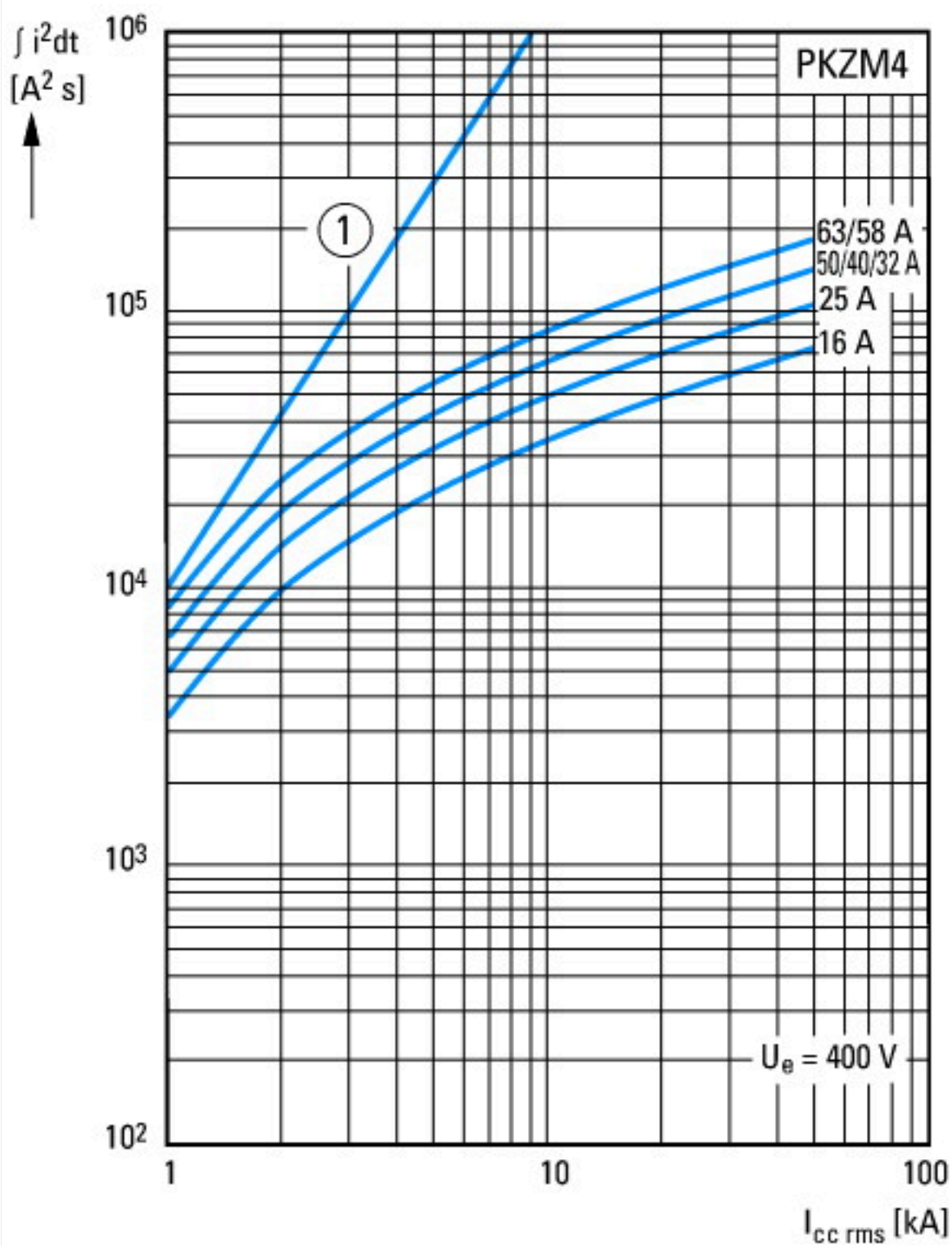


Tripping characteristics motor-protective circuit breaker PKZM4-...

- 1: Minimum level, 3-phase
- 2: Maximum level, 3-phase
- 3: Minimum marker, 2-phase
- 4: Highest marker, 2-phase



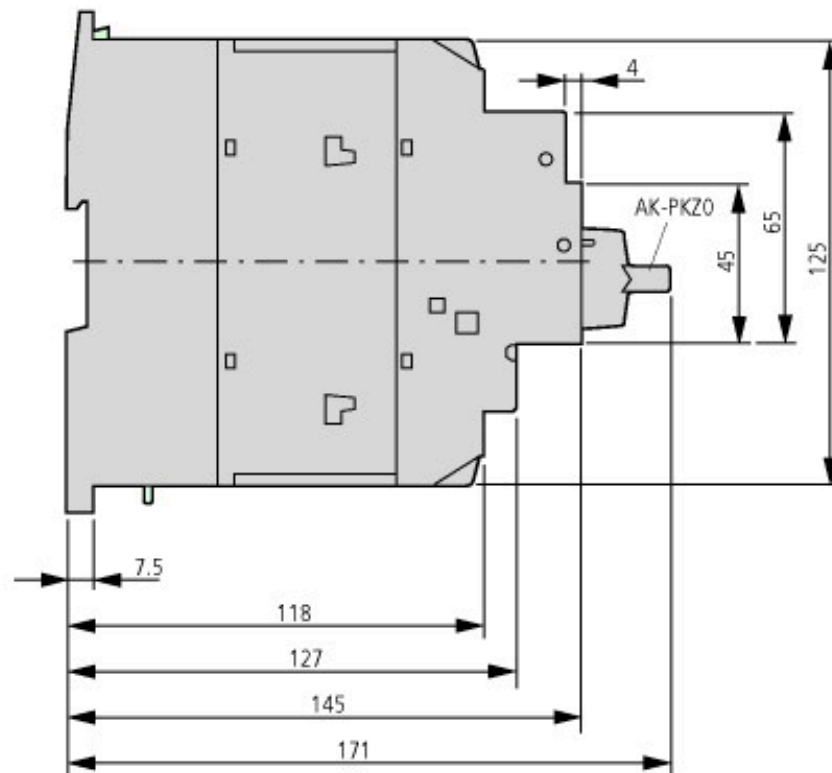
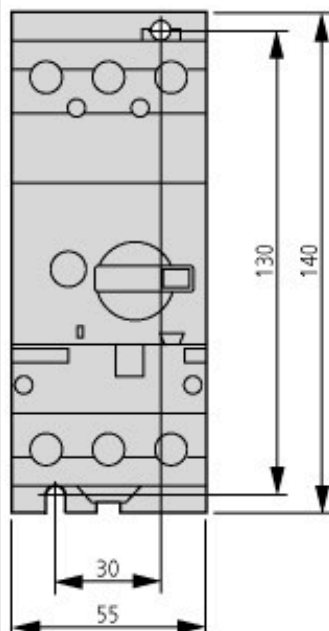
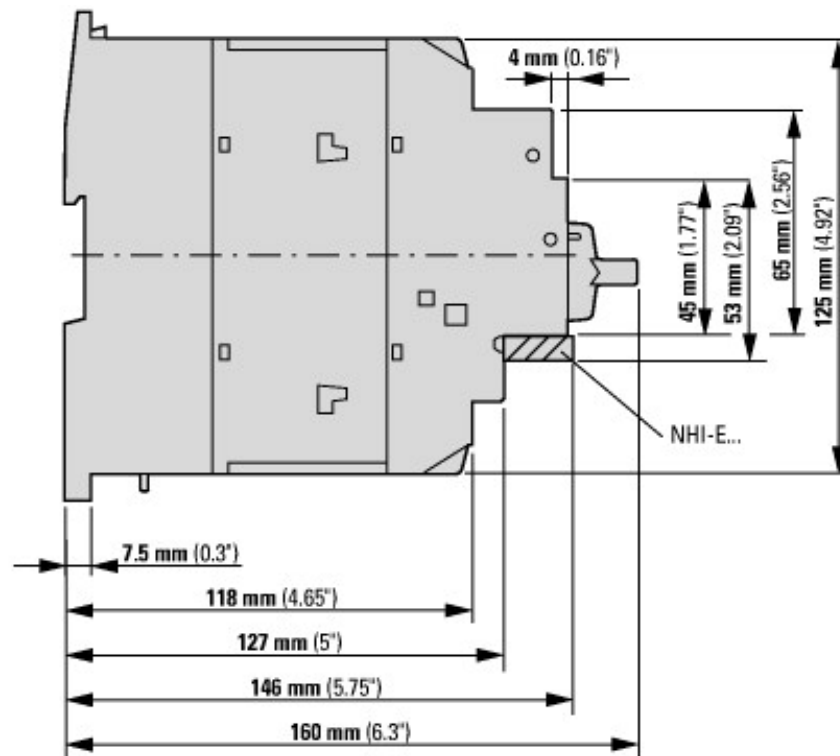
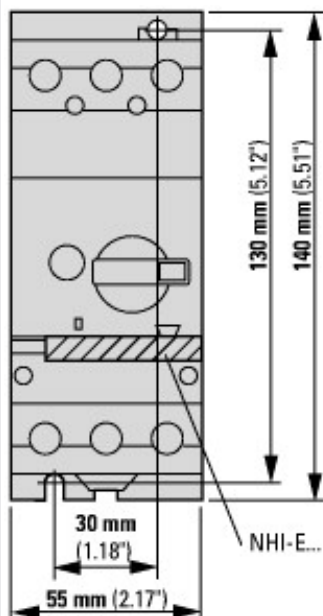
Let-through current



① 1 half-cycle  
Let-through energy



## Dimensions



PKZM4-... + AK-PKZ0