





**Motor-protective circuit-breaker, 3p, +control option 1-4A**

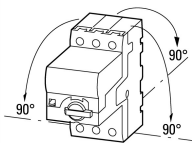
**Part no.** PKE12/AK/XTU-4  
**Catalog No.** 158244  
**Alternate Catalog No.** XTPE004BCS

**Delivery program**

|  |                     |       |   |
|--|---------------------|-------|---|
| Product range  |                     |       | PKE motor protective circuit-breakers with electronic wide-range overload protection up to 32 A                         |
| Basic function   |                     |       | Motor protection<br>Motor protection for heavy starting duty  |
| Single unit/Complete unit  |                     |       | Complete device with AK lockable rotary handle  |
|  |                     |       |                                       |
| Notes  |                     |       | Also suitable for motors with efficiency class IE3.<br>IE3-ready devices are identified by the logo on their packaging. |
| Setting range of overload releases   | $I_r$               | A     | 1 - 4   |
|  |                     |       |   |
| Function   |                     |       | With overload release   |
| Rated uninterrupted current = rated operational current                          | $I_u = I_e$         | A     | 4   |
| <b>Motor rating</b>  |                     |       |   |
| AC-3   |                     |       |   |
| 220 V 230 V 240 V  | P                   | kW    | 0.75  |
| 380 V 400 V 415 V  | P                   | kW    | 1.5   |
| 440 V  | P                   | kW    | 1.5   |
| 500 V  | P                   | kW    | 2.2   |
| 660 V 690 V  | P                   | kW    | 3   |
| Motor output/rated motor current   |                     |       |   |
| Motor rating   | Rated motor current |       |   |
|  | AC-3                |       |   |
|  | 220 V               | 380 V | 440 V   |
|  | 230 V               | 400 V | 500 V   |
|  | 240 V               | 415 V | 660 V   |
| P  | I                   | I     | I   |
| kW   | A                   | A     | A   |
| 0.18   | 1.04                | -     | -   |
| 0.25   | 1.4                 | -     | -   |
| 0.37   | 2                   | 1.1   | -   |
| 0.55   | 2.7                 | 1.5   | 1.2   |
| 0.75   | 3.2                 | 1.9   | 1.5   |
| 1.1  | -                   | 2.6   | 2.1   |
| 1.5  | -                   | 3.6   | 2.9   |
| 2.2  | -                   | -     | 4   |
| 3  | -                   | -     | -   |
|  |                     |       | 690 V   |
|  |                     |       | 3.8   |

**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               | 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             | 14 - 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                         | $U_{imp}$   | 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             | 4  |
| Rated frequency   | f           | Hz            | 40 - 60  |
| Current heat loss (3 pole at operating temperature)     |             | W             | 0.9  |
| Lifespan, mechanical                                    | Operations  | $\times 10^6$ | 0.05   |
| Lifespan, electrical (AC-3 at 400 V)                    |             |               |  |
| Lifespan, electrical                                    | Operations  | $\times 10^6$ | 0.05   |
| Max. operating frequency                                |             | Ops/h         | 60   |
| Motor switching capacity                                |             |               |  |
| AC-3 (up to 690V)                                       |             | A             | 4  |
| AC-4 cycle operation                                    |             |               |  |
| Minimum current flow times                              |             | ms            | 500 (Class 5)<br>700 (Class 10)<br>900 (Class 15)<br>1000 (Class 20)   |
| Minimum cut-out periods                                 |             | ms            | 500  |
| Note  |             | ms            | In AC-4 cycle operation, going below the minimum current flow time can cause overheating of the load (motor).<br>For all combinations with an SWD activation, you need not adhere to the minimum current flow times and minimum cut-out periods. |

### Trip blocks

|                                    |  |              |   |
|------------------------------------|--|--------------|---|
| Temperature compensation           |  |              |   |
| to IEC/EN 60947, VDE 0660          |  | °C           | - 5 ... 40  |
| Operating range                    |  | °C           | - 25 ... 55   |
| Setting range of overload releases |  | $\times I_u$ | 0.25 - 1  |
| short-circuit release              |  |              | Basic device, fixed: $15.5 \times I_u$<br>Trip block, fixed: $15.5 \times I_r$<br>delayed approx. 60 ms |
| Short-circuit release tolerance    |  |              | $\pm 20\%$  |
| Phase-failure sensitivity          |  |              | IEC/EN 60947-4-1, VDE 0660 Part 102   |

### Rating data for approved types

|                      |  |    |      |
|----------------------|--|----|------|
| Switching capacity   |  |    |      |
| Maximum motor rating |  |    |      |
| Three-phase          |  |    |      |
| 200 V<br>208 V       |  | HP | 0.75 |
| 230 V<br>240 V       |  | HP | 0.75 |
| 460 V                |  | HP | 2    |

|  |  |      |             |
|--|--|------|-------------|
| 480 V  |  |      |             |
| 575 V<br>600 V                                 |  | HP   | 3           |
| Single-phase                                   |  |      |             |
| 115 V<br>120 V                                 |  | HP   | 0.125       |
| 230 V<br>240 V                                 |  | HP   | 0.33        |
| Short Circuit Current Rating, group protection |  | SCCR |             |
| 600 V High Fault                               |  |      |             |
| SCCR (fuse)                                    |  | kA   | 100         |
| max. Fuse                                      |  | A    | 100 Class J |

## Design verification as per IEC/EN 61439

|  |            |    |  |
|--|------------|----|--|
| Technical data for design verification   |            |    |  |
| Rated operational current for specified heat dissipation   | $I_n$      | A  | 4  |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W  | 0.3  |
| Equipment heat dissipation, current-dependent  | $P_{vid}$  | W  | 0.9  |
| Static heat dissipation, non-current-dependent   | $P_{vs}$   | W  | 0  |
| Heat dissipation capacity  | $P_{diss}$ | W  | 0  |
| Operating ambient temperature min.   |            | °C | -25  |
| Operating ambient temperature max.   |            | °C | 55   |
| IEC/EN 61439 design verification   |            |    |  |
| 10.2 Strength of materials and parts   |            |    |  |
| 10.2.2 Corrosion resistance  |            |    | Meets the product standard's requirements.   |
| 10.2.3.1 Verification of thermal stability of enclosures   |            |    | Meets the product standard's requirements.   |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |            |    | Meets the product standard's requirements.   |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |            |    | Meets the product standard's requirements.   |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |            |    | Meets the product standard's requirements.   |
| 10.2.5 Lifting   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.6 Mechanical impact   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.2.7 Inscriptions  |            |    | Meets the product standard's requirements.   |
| 10.3 Degree of protection of ASSEMBLIES  |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.4 Clearances and creepage distances   |            |    | Meets the product standard's requirements.   |
| 10.5 Protection against electric shock   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.6 Incorporation of switching devices and components   |            |    | Does not apply, since the entire switchgear needs to be evaluated.   |
| 10.7 Internal electrical circuits and connections  |            |    | Is the panel builder's responsibility.   |
| 10.8 Connections for external conductors   |            |    | Is the panel builder's responsibility.   |
| 10.9 Insulation properties   |            |    |  |
| 10.9.2 Power-frequency electric strength   |            |    | Is the panel builder's responsibility.   |
| 10.9.3 Impulse withstand voltage   |            |    | Is the panel builder's responsibility.   |
| 10.9.4 Testing of enclosures made of insulating material   |            |    | Is the panel builder's responsibility.   |
| 10.10 Temperature rise   |            |    | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating   |            |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility  |            |    | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function  |            |    | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 7.0

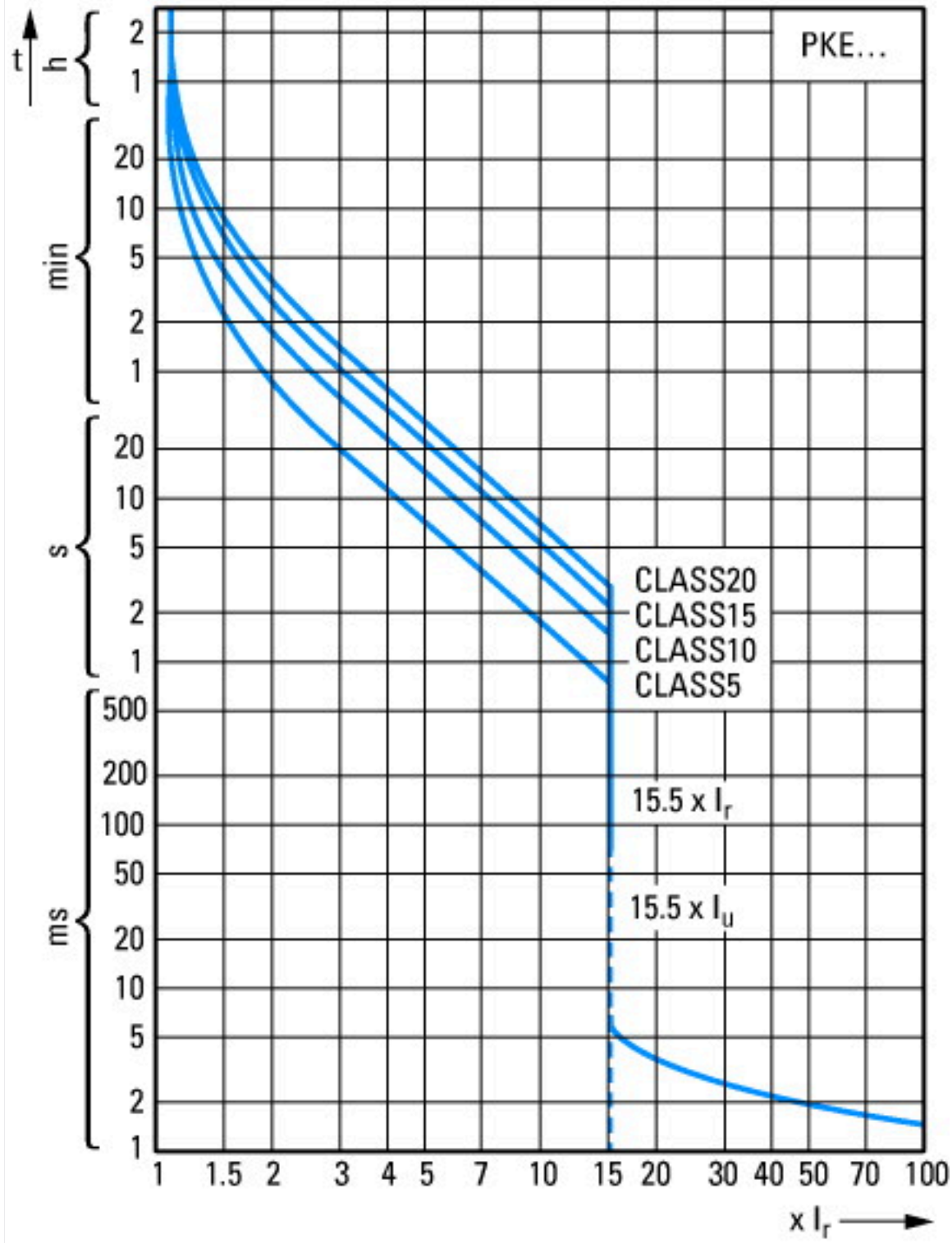
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|---|--|---|---------|
| Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)  |  |   |         |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss10.0.1-27-37-04-01 [AGZ529016]) |  |   |         |
| Overload release current setting  |  | A | 1 - 4   |
| Adjustment range undelayed short-circuit release  |  | A | 62 - 62 |
| With thermal protection   |  |   | Yes     |

|  |    |  |
|--|----|--|
| Phase failure sensitive                                |    | Yes                                      |
| Switch off technique                                   |    | Electronic                               |
| Rated operating voltage                                | V  | 690 - 690                                |
| Rated permanent current Iu                             | A  | 4  |
| Rated operation power at AC-3, 230 V                   | kW | 0.75                                     |
| Rated operation power at AC-3, 400 V                   | kW | 1.5                                      |
| 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 | 0  |
| Degree of protection (IP)                              |    | IP20                                     |
| Height   | mm | 102.5                                    |
| Width  | mm | 45                                       |
| Depth  | mm | 120.5                                    |

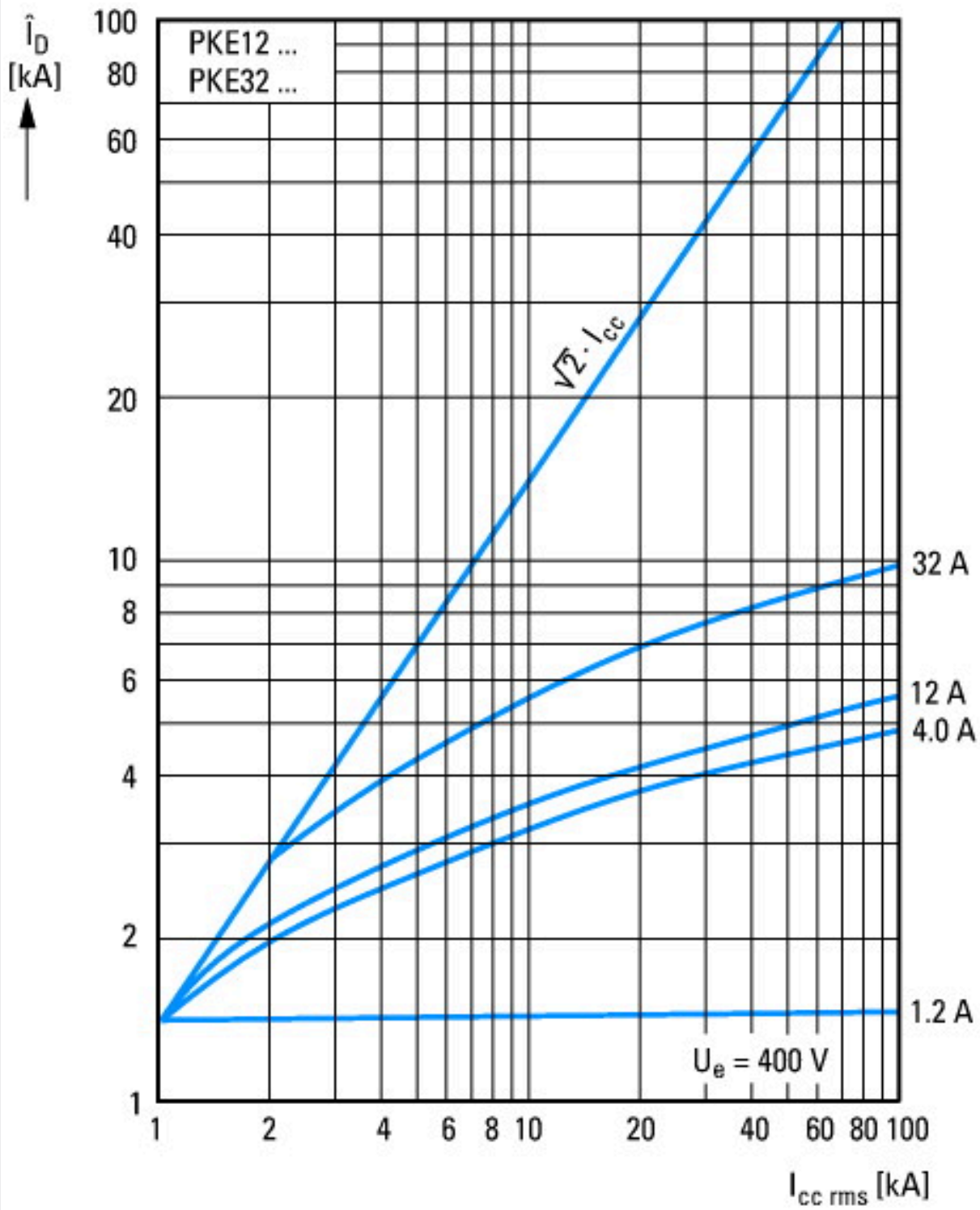
## Approvals

|                                      |  |  |
|--------------------------------------|--|--|
| 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   |

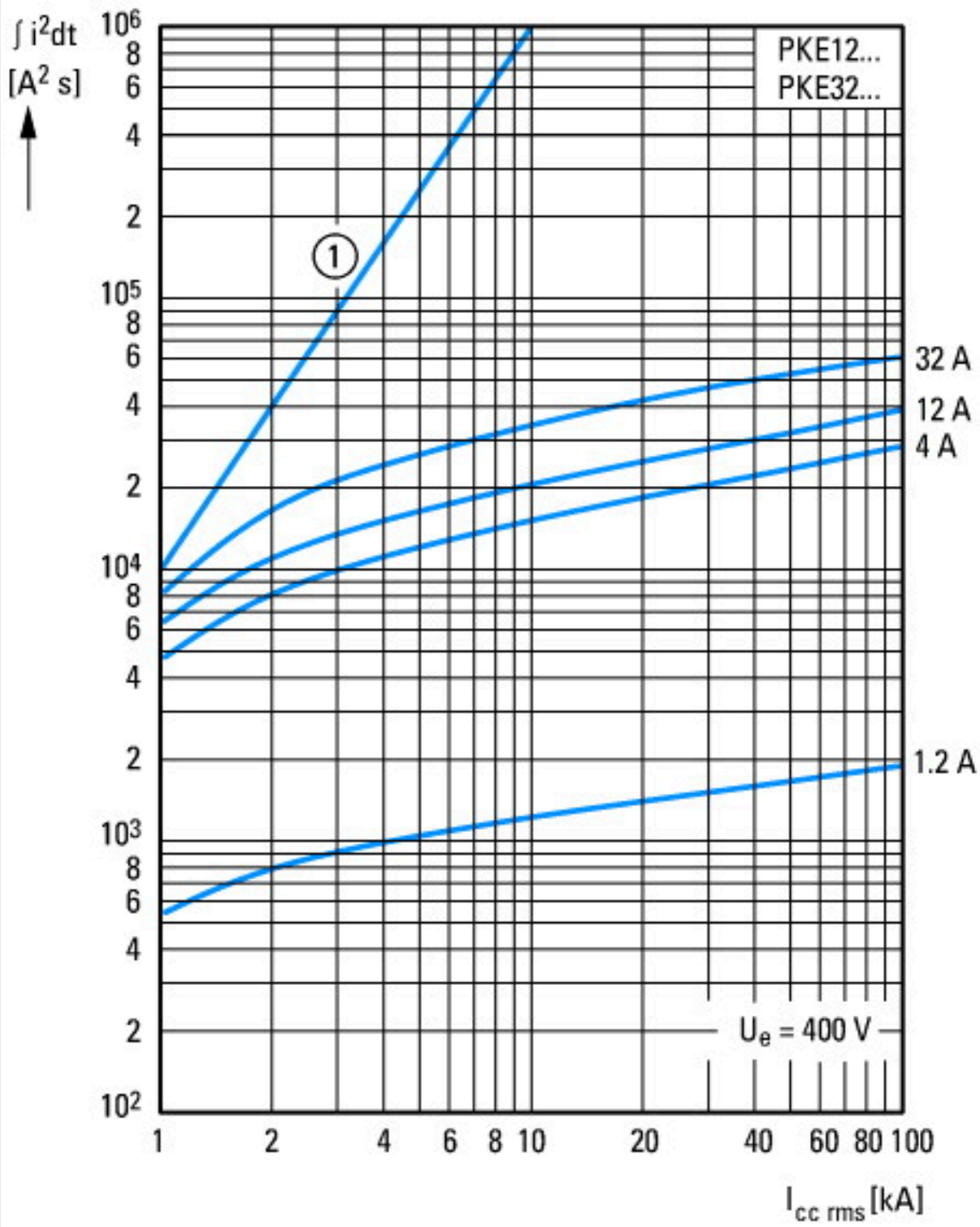
# Characteristics



Tripping characteristics

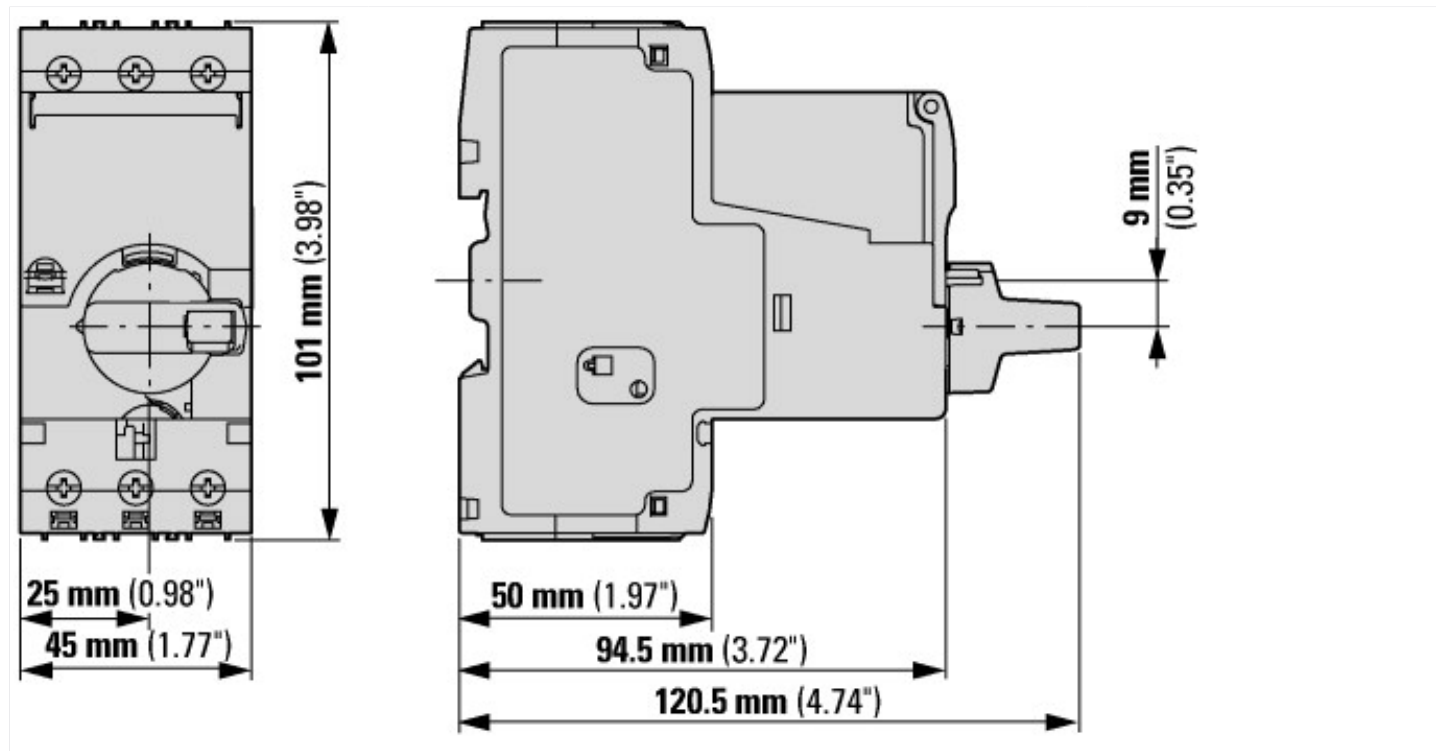


Let-through current



① 1 half-cycle  
Let-through energy

## Dimensions



## Assets (links)

### Declaration of CE Conformity

00002850

### Instruction Leaflets

IL03402019Z2018\_03

### Manuals

MN03402004Z\_DE\_EN (English)

## Additional product information (links)

### IL03402019Z (AWA1210-2490) PKE motor-protective circuit-breaker with wide-range overload protection

IL03402019Z (AWA1210-2490) PKE motor-protective circuit-breaker with wide-range overload protection

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03402019Z2018\\_03.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03402019Z2018_03.pdf)

### MN03402004Z PKE12, PKE32 and PKE65 motor-protective circuit-breakers; overload monitoring of Ex e motors

MN03402004Z PKE12, PKE32 and PKE65 motor-protective circuit-breakers; overload monitoring of Ex e motors - Deutsch / English

[ftp://ftp.moeller.net/DOCUMENTATION/AWB\\_MANUALS/MN03402004Z\\_DE\\_EN.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03402004Z_DE_EN.pdf)

Schaltvermögen

<http://de.ecat.eaton.com/flip-cat/?edition=HPLTEv1&startpage=>

Motor starters and "Special Purpose Ratings" for the North American market

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