



## Motor-protective circuit-breaker, 3p, Ir=0.25-0.4A, screw connection

**Part no.** PKZM0-0,4  
**Article no.** 072732  
**Catalog No.** XTPRP40BC1NL

### 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       |   | 0.06  |
| 380 V 400 V 415 V        | P  | kW       |   | 0.09  |
| 440 V                    | P  | kW       |   | 0.12  |
| 500 V                    | P  | kW       |   | 0.12  |
| 660 V 690 V              | P  | kW       |   | 0.18  |
| <b>Setting range</b>     |  |          |   |   |
| Overload releases        |  | $I_r$    | A | 0.25 - 0.4  |
| Short-circuit releases   |  |          |   |   |
| max.                     |  | $I_{rm}$ | A | 6.2   |
| <b>Notes</b>             | Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 part 102.<br>can be snapped-on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height |          |   |   |
|                          |  |          |   |   |
|                          | PTB 10 ATEX 3013, observe Manual MN03402003Z-DE/EN   |          |   |   |

### Technical data

|                              |          |    |  |  |
|------------------------------|----------|----|--|--|
| <b>General</b>               |          |    |  |  |
| Standards                    |          |    |  | IEC/EN 60947, VDE 0660   |
| Climatic proofing            |          |    |  | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature          |          |    |  |  |
| Storage                      | $\theta$ | °C |  | -40 - +80  |
| Open                         |          | °C |  | -25 - +55  |
| Enclosed                     |          | °C |  | -25 - 40   |
| Mounting position            |          |    |  |  |
| Direction of incoming supply |          |    |  | as required  |
| Degree of protection         |          |    |  |  |
| Device                       |          |    |  | IP20   |

|   |  |                 |                               |
|---|--|-----------------|-------------------------------|
| Terminations  |  |                 | IP00                          |
| Protection against direct contact   |  |                 | Finger and back-of-hand proof |
| Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27 |  | g               | 25                            |
| Altitude  |  | m               | 2000                          |
| Terminal capacity screw terminals   |  | mm <sup>2</sup> |                               |
| Solid   |  | mm <sup>2</sup> | 1 x (1 - 6)<br>2 x (1 - 6)    |
| Flexible with ferrule to DIN 46228  |  | mm <sup>2</sup> | 1 x (1 - 6)<br>2 x (1 - 6)    |
| Solid or stranded   |  | AWG             | 18 - 10                       |
| Specified tightening torque for terminal screws                           |  |                 |                               |
| Main cable  |  | Nm              | 1.7                           |
| Control circuit cables  |  | Nm              | 1                             |

### Main conducting paths

|   |             |                   |  |
|---|-------------|-------------------|--|
| Rated impulse withstand voltage                         | $U_{imp}$   | V AC              | 6000   |
| Overvoltage category/pollution degree                   |             |                   | III/3  |
| Rated operational voltage                               | $U_e$       | V AC              | 690  |
| Rated uninterrupted current = rated operational current | $I_u = I_e$ | A                 | 32 or current setting of the overcurrent release |
| Rated frequency   | f           | Hz                | 40 - 60  |
| Rated frequency   |             | Hz                | 40 - 60  |
| Current heat loss (3 pole at operating temperature)     |             | W                 | 6  |
| Lifespan, mechanical                                    | Operations  | $\times 10^6$     | 0.1  |
| Lifespan, electrical (AC-3 at 400 V)                    | Operations  | $\times 10^6$     | 0.1  |
| Maximum operating frequency                             |             | Ops./h            |  |
| Max. operating frequency                                |             | Ops/h             | 40   |
| Short-circuit rating                                    |             |                   |  |
| DC  |             |                   |  |
| Short-circuit rating                                    |             | kA                | 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                    |  | $\times I_u$ | 0.6 - 1                                |
| Short-circuit release fixed                           |  | $\times I_u$ | 15.5                                   |
| short-circuit release                                 |  |              | Basic device, fixed: 15.5 $\times I_u$ |
| Short-circuit release tolerance                       |  |              | $\pm$ 20%                              |
| Phase-failure sensitivity                             |  |              | IEC/EN 60947-1-1, VDE 0660 Part 102    |

### Design verification as per IEC/EN 61439

|  |            |    |      |
|--|------------|----|------|
| Technical data for design verification                   |            |    |      |
| Rated operational current for specified heat dissipation | $I_n$      | A  | 0.4  |
| Heat dissipation per pole, current-dependent             | $P_{vid}$  | W  | 0    |
| Equipment heat dissipation, current-dependent            | $P_{vid}$  | W  | 5.22 |
| 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.                         |

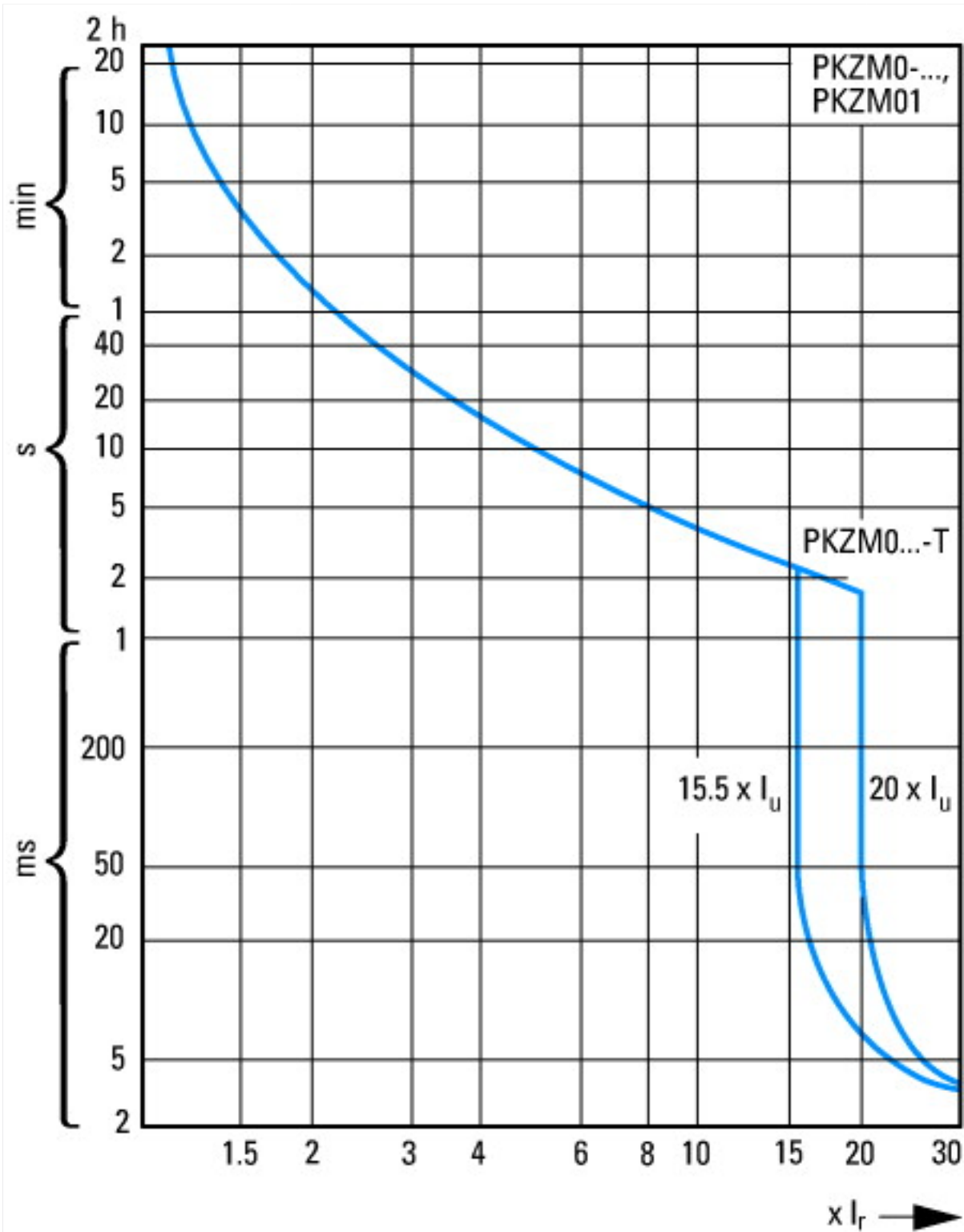
## Technical data ETIM 6.0

|  |    |  |
|--|----|--|
| 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  | 0.25 - 0.4                               |
| Adjustment range undelayed short-circuit release   | A  | 6.2 - 6.2                                |
| Thermal protection   |    | No                                       |
| Phase failure sensitive  |    | Yes                                      |
| Switch off technique   |    | Thermomagnetic                           |
| Rated operating voltage  | V  | 690 - 690                                |
| Rated permanent current I <sub>u</sub>   | A  | 0.4                                      |
| Rated operation power at AC-3, 230 V   | kW | 0.06                                     |
| Rated operation power at AC-3, 400 V   | kW | 0.09                                     |
| 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 | 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   |

### Characteristics



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

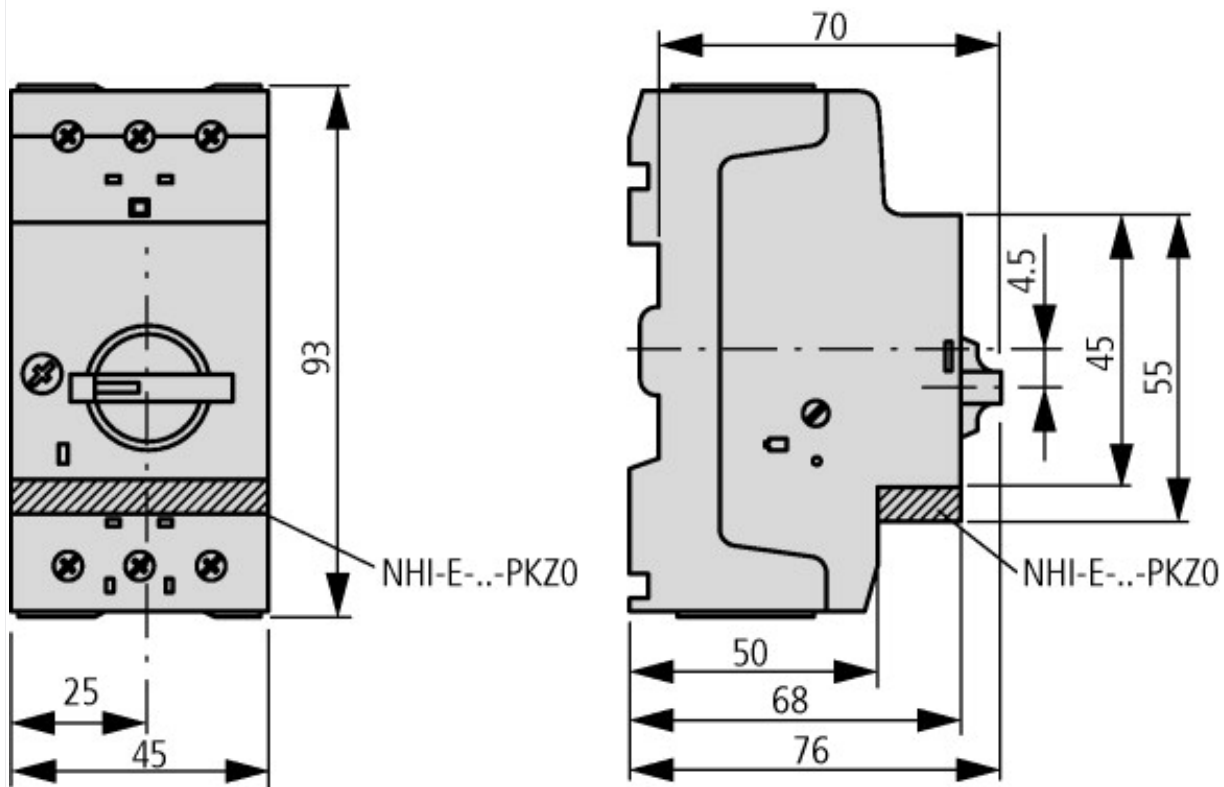


Let-through current

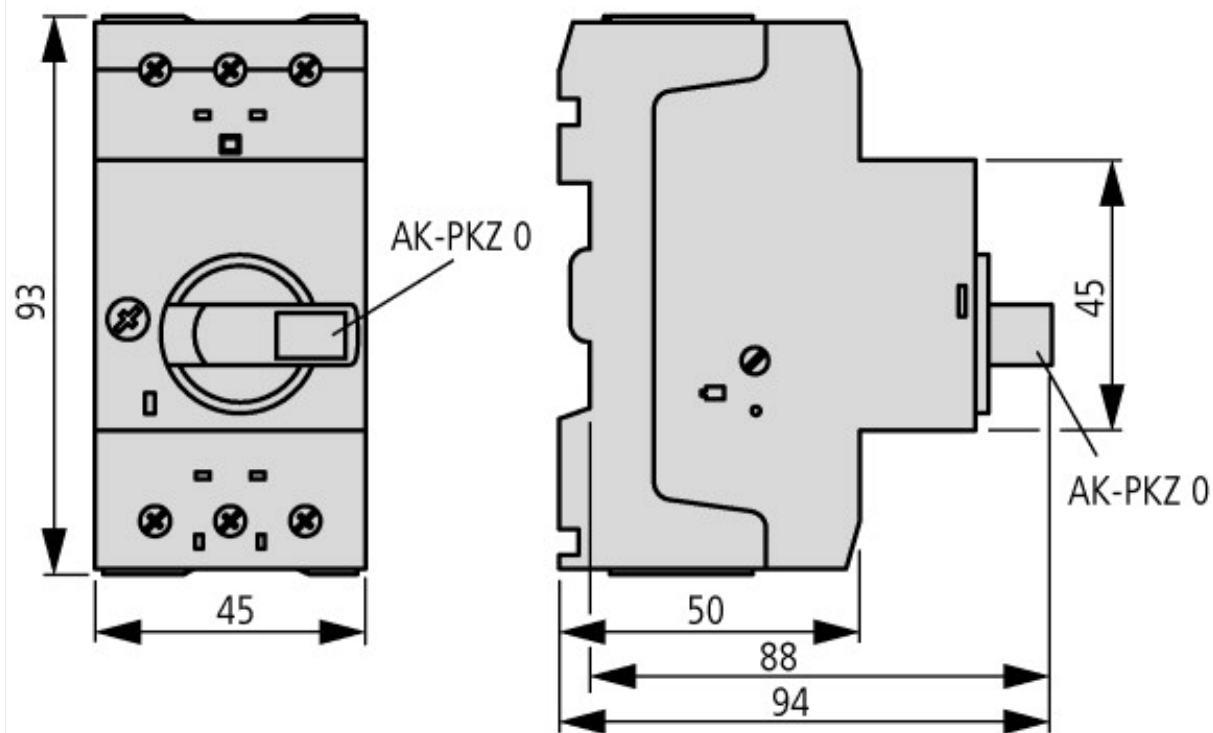


Let-through energy

## 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)