



**Contactor, 3p+1N/O, 7.5kW/400V/AC3**

**Part no. DILM15-10(24VDC)**  
**Catalog No. 290073**  
**Eaton Catalog No. XTCE015B10TD**  
**EL-Nummer 0004110368**  
**(Norway)**



**Delivery program**

|                      |  |  |  |
|----------------------|--|--|--|
| Product range        |  |  | Contactors   |
| Application          |  |  | Contactors for Motors  |
| Subrange             |  |  | Contactors up to 170 A, 3 pole   |
| Utilization category |  |  | AC-1: Non-inductive or slightly inductive loads, resistance furnaces<br>NAC-3: Normal AC induction motors: starting, switch off during running<br>AC-4: Normal AC induction motors: starting, plugging, reversing, inching |
| Notes                |  |  | Not suitable for motors with efficiency class IE3.   |
| Connection technique |  |  | Screw terminals  |
| Number of poles      |  |  | 3 pole   |

**Rated operational current**

|   |                |   |      |
|---|----------------|---|------|
| AC-3  |                |   |      |
| 380 V 400 V   | $I_e$          | A | 15.5 |
| AC-1  |                |   |      |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz |                |   |      |
| Open  |                |   |      |
| at 40 °C  | $I_{th} = I_e$ | A | 22   |
| enclosed  | $I_{th}$       | A | 18   |
| Conventional free air thermal current, 1 pole             |                |   |      |
| open  | $I_{th}$       | A | 50   |
| enclosed  | $I_{th}$       | A | 45   |

**Max. rating for three-phase motors, 50 - 60 Hz**

|             |   |    |     |
|-------------|---|----|-----|
| AC-3        |   |    |     |
| 220 V 230 V | P | kW | 4   |
| 380 V 400 V | P | kW | 7.5 |
| 660 V 690 V | P | kW | 7   |
| AC-4        |   |    |     |
| 220 V 230 V | P | kW | 2   |
| 380 V 400 V | P | kW | 3   |
| 660 V 690 V | P | kW | 4.4 |

**Contacts**

|                     |  |  |       |
|---------------------|--|--|-------|
| N/O = Normally open |  |  | 1 N/O |
| Contact sequence    |  |  |       |

**Instructions**

|  |  |  |   |
|--|--|--|---|
| Can be combined with auxiliary contact |  |  | Contacts to EN 50 012.<br>Integrated varistor suppressor circuit. |
| Actuating voltage                      |  |  | 24 V DC   |
| Voltage AC/DC                          |  |  | DC operation  |
| Connection to SmartWire-DT             |  |  | yes<br>in conjunction with DIL-SWD SmartWire DT contactor module  |

**Technical data**

|                      |  |  |                                 |
|----------------------|--|--|---------------------------------|
| Standards            |  |  | IEC/EN 60947, VDE 0660, UL, CSA |
| Lifespan, mechanical |  |  |                                 |

|  |              |                 |                                      |
|--|--------------|-----------------|--------------------------------------|
| DC operated  | Operations   | $\times 10^6$   | 10                                   |
| Operating frequency, mechanical  |              |                 |                                      |
| DC operated  | Operations/h |                 | 5000                                 |
| Climatic proofing  |              |                 |                                      |
| Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |              |                 |                                      |
| Ambient temperature  |              |                 |                                      |
| Open   |              | °C              | -25 - +60                            |
| Enclosed   |              | °C              | - 25 - 40                            |
| Storage  |              | °C              | - 40 - 80                            |
| Mounting position  |              |                 |                                      |
|  |              |                 |                                      |
| Mechanical shock resistance (IEC/EN 60068-2-27)                                |              |                 |                                      |
| Half-sinusoidal shock, 10 ms   |              |                 |                                      |
| Main contacts  |              |                 |                                      |
| N/O contact  |              | g               | 10                                   |
| Auxiliary contacts   |              |                 |                                      |
| N/O contact  |              | g               | 7                                    |
| N/C contact  |              | g               | 5                                    |
| Mechanical shock resistance (IEC/EN 60068-2-27) when tabletop-mounted          |              |                 |                                      |
| Half-sinusoidal shock, 10 ms   |              |                 |                                      |
| Main contacts  |              |                 |                                      |
| N/O contact  |              | g               | 5.7                                  |
| Auxiliary contacts   |              |                 |                                      |
| N/O contact  |              | g               | 3.4                                  |
| N/C contact  |              | g               | 3.4                                  |
| Degree of Protection   |              |                 |                                      |
| IP20   |              |                 |                                      |
| Protection against direct contact when actuated from front (EN 50274)          |              |                 |                                      |
| Finger and back-of-hand proof  |              |                 |                                      |
| Weight   |              |                 |                                      |
| DC operated  |              | kg              | 0.296                                |
| Screw connector terminals  |              |                 |                                      |
| Terminal capacity main cable   |              |                 |                                      |
| Solid  |              | mm <sup>2</sup> | 1 x (0.75 - 4)<br>2 x (0.75 - 2.5)   |
| Flexible with ferrule  |              | mm <sup>2</sup> | 1 x (0.75 - 2.5)<br>2 x (0.75 - 2.5) |
| Solid or stranded  |              | AWG             | single 18 - 10, double 18 - 14       |
| Stripping length   |              | mm              | 10                                   |
| Terminal screw   |              |                 | M3.5                                 |
| Tightening torque  |              | Nm              | 1.2                                  |
| Tool   |              |                 |                                      |
| Pozidriv screwdriver   |              | Size            | 2                                    |
| Standard screwdriver   |              | mm              | 0.8 x 5.5<br>1 x 6                   |
| Terminal capacity control circuit cables                                       |              |                 |                                      |
| Solid  |              | mm <sup>2</sup> | 1 x (0.75 - 4)<br>2 x (0.75 - 2.5)   |
| Flexible with ferrule  |              | mm <sup>2</sup> | 1 x (0.75 - 2.5)<br>2 x (0.75 - 2.5) |
| Solid or stranded  |              | AWG             | 18 - 14                              |
| Stripping length   |              | mm              | 10                                   |
| Terminal screw   |              |                 | M3.5                                 |
| Tightening torque  |              | Nm              | 1.2                                  |
| Tool   |              |                 |                                      |
| Pozidriv screwdriver   |              | Size            | 2                                    |

|                      |  |    |                    |
|----------------------|--|----|--------------------|
| Standard screwdriver |  | mm | 0.8 x 5.5<br>1 x 6 |
|----------------------|--|----|--------------------|

## Main conducting paths

|  |             |      |       |
|--|-------------|------|-------|
| Rated impulse withstand voltage        | $U_{imp}$   | V AC | 8000  |
| Overvoltage category/pollution degree  |             |      | III/3 |
| Rated insulation voltage               | $U_i$       | V AC | 690   |
| Rated operational voltage              | $U_e$       | V AC | 690   |
| Safe isolation to EN 61140             |             |      |       |
| between coil and contacts              |             | V AC | 400   |
| between the contacts                   |             | V AC | 400   |
| Making capacity (p.f. to IEC/EN 60947) |             |      |       |
|  | Up to 690 V | A    | 155   |
| Breaking capacity                      |             |      |       |
| 220 V 230 V                            |             | A    | 124   |
| 380 V 400 V                            |             | A    | 124   |
| 500 V                                  |             | A    | 100   |
| 660 V 690 V                            |             | A    | 70    |
| Short-circuit rating                   |             |      |       |
| Short-circuit protection maximum fuse  |             |      |       |
| Type "2" coordination                  |             |      |       |
| 400 V                                  | gG/gL 500 V | A    | 20    |
| 690 V                                  | gG/gL 690 V | A    | 20    |
| Type "1" coordination                  |             |      |       |
| 400 V                                  | gG/gL 500 V | A    | 63    |
| 690 V                                  | gG/gL 690 V | A    | 50    |

## AC

|   |                |     |      |
|---|----------------|-----|------|
| AC-1  |                |     |      |
| Rated operational current                                 |                |     |      |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz |                |     |      |
| Open  |                |     |      |
| at 40 °C  | $I_{th} = I_e$ | A   | 22   |
| at 50 °C  | $I_{th} = I_e$ | A   | 21   |
| at 55 °C  | $I_{th} = I_e$ | A   | 21   |
| at 60 °C  | $I_{th} = I_e$ | A   | 20   |
| enclosed  | $I_{th}$       | A   | 18   |
| Conventional free air thermal current, 1 pole             |                |     |      |
| open  | $I_{th}$       | A   | 50   |
| enclosed  | $I_{th}$       | A   | 45   |
| AC-3  |                |     |      |
| Rated operational current                                 |                |     |      |
| Open, 3-pole: 50 – 60 Hz                                  |                |     |      |
| 220 V 230 V   | $I_e$          | A   | 15.5 |
| 240 V   | $I_e$          | A   | 15.5 |
| 380 V 400 V   | $I_e$          | A   | 15.5 |
| 415 V   | $I_e$          | A   | 15.5 |
| 440V  | $I_e$          | A   | 15.5 |
| 500 V   | $I_e$          | A   | 12.5 |
| 660 V 690 V   | $I_e$          | A   | 9    |
| 380 V 400 V   | $I_e$          | A   | 15.5 |
| Motor rating  | P              | kWh |      |
| 220 V 230 V   | P              | kW  | 4    |
| 240V  | P              | kW  | 4.6  |
| 380 V 400 V   | P              | kW  | 7.5  |
| 415 V   | P              | kW  | 8    |
| 440 V   | P              | kW  | 8.4  |

|                          |                |    |     |
|--------------------------|----------------|----|-----|
| 500 V                    | P              | kW | 7.5 |
| 660 V 690 V              | P              | kW | 7   |
| <b>AC-4</b>              |                |    |     |
| Open, 3-pole: 50 – 60 Hz |                |    |     |
| 220 V 230 V              | I <sub>e</sub> | A  | 7   |
| 240 V                    | I <sub>e</sub> | A  | 7   |
| 380 V 400 V              | I <sub>e</sub> | A  | 7   |
| 415 V                    | I <sub>e</sub> | A  | 7   |
| 440 V                    | I <sub>e</sub> | A  | 7   |
| 500 V                    | I <sub>e</sub> | A  | 6   |
| 660 V 690 V              | I <sub>e</sub> | A  | 5   |
| Motor rating             |                |    |     |
| 220 V 230 V              | P              | kW | 2   |
| 240 V                    | P              | kW | 2.2 |
| 380 V 400 V              | P              | kW | 3   |
| 415 V                    | P              | kW | 3.4 |
| 440 V                    | P              | kW | 3.6 |
| 500 V                    | P              | kW | 3.5 |
| 660 V 690 V              | P              | kW | 4.4 |

## DC

|                                 |                |   |    |
|---------------------------------|----------------|---|----|
| Rated operational current, open |                |   |    |
| DC-1                            |                |   |    |
| 60 V                            | I <sub>e</sub> | A | 20 |
| 110 V                           | I <sub>e</sub> | A | 20 |
| 220 V                           | I <sub>e</sub> | A | 15 |

## Current heat loss

|   |  |    |     |
|---|--|----|-----|
| 3 pole, at I <sub>th</sub> (60°)                  |  | W  | 4   |
| Current heat loss at I <sub>e</sub> to AC-3/400 V |  | W  | 2.4 |
| Impedance per pole                                |  | mΩ | 4.6 |

## Magnet systems

|  |          |                  |   |
|--|----------|------------------|---|
| Voltage tolerance  |          |                  |   |
| DC operated  | Pick-up  | x U <sub>c</sub> | 0.8 - 1.1   |
| Notes  |          |                  | 0.85 - 1.1 only with auxiliary contact module with 3 or more N/C contacts<br>0.7 – 1.3 without auxiliary contact module and at ambient air temperature + +40 °C |
| DC operated  | Drop-out | x U <sub>c</sub> | 0.15 - 0.6  |
| Notes  |          |                  | at least smoothed two-phase bridge rectifier or three-phase rectifier   |
| Power consumption of the coil in a cold state and 1.0 x U <sub>S</sub> |          |                  |   |
| DC operated  | Pick-up  | W                | 4.5   |
| DC operated  | Sealing  | W                | 4.5   |
| Duty factor  |          | % DF             | 100   |
| Changeover time at 100 % U <sub>S</sub> (recommended value)            |          |                  |   |
| Main contacts  |          |                  |   |
| DC operated  |          | ms               |   |
| Closing delay  |          | ms               | 31  |
| Opening delay  |          | ms               | 12  |
| Arcing time  |          | ms               | 10  |

## Electromagnetic compatibility (EMC)

|                       |  |  |                         |
|-----------------------|--|--|-------------------------|
| Emitted interference  |  |  | according to EN 60947-1 |
| Interference immunity |  |  | according to EN 60947-1 |

## Rating data for approved types

|                      |  |    |   |
|----------------------|--|----|---|
| Switching capacity   |  |    |   |
| Maximum motor rating |  |    |   |
| Three-phase          |  |    |   |
| 200 V<br>208 V       |  | HP | 5 |
| 230 V                |  | HP | 5 |

|   |      |                         |
|---|------|-------------------------|
| 240 V   |      |                         |
| 460 V<br>480 V  | HP   | 10                      |
| 575 V<br>600 V  | HP   | 10                      |
| Single-phase  |      |                         |
| 115 V<br>120 V  | HP   | 1                       |
| 230 V<br>240 V  | HP   | 3                       |
| General use   | A    | 20                      |
| Auxiliary contacts  |      |                         |
| Pilot Duty  |      |                         |
| AC operated   |      | A600                    |
| DC operated   |      | P300                    |
| General Use   |      |                         |
| AC  | V    | 600                     |
| AC  | A    | 10                      |
| DC  | V    | 250                     |
| DC  | A    | 1                       |
| Short Circuit Current Rating                              | SCCR |                         |
| Basic Rating  |      |                         |
| SCCR  | kA   | 5                       |
| max. Fuse   | A    | 45                      |
| max. CB   | A    | 60                      |
| 480 V High Fault  |      |                         |
| SCCR (fuse)   | kA   | 30/100                  |
| max. Fuse   | A    | 25 Class RK5/60 Class J |
| 600 V High Fault  |      |                         |
| SCCR (fuse)   | kA   | 30/100                  |
| max. Fuse   | A    | 25 Class RK5/60 Class J |
| Special Purpose Ratings                                   |      |                         |
| Electrical Discharge Lamps (Ballast)                      |      |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A    | 20                      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A    | 20                      |
| Incandescent Lamps (Tungsten)                             |      |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A    | 14                      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A    | 14                      |
| Resistance Air Heating                                    |      |                         |
| 480V 60Hz 3phase, 277V 60Hz 1phase                        | A    | 20                      |
| 600V 60Hz 3phase, 347V 60Hz 1phase                        | A    | 20                      |
| Refrigeration Control (CSA only)                          |      |                         |
| LRA 480V 60Hz 3phase                                      | A    | 60                      |
| FLA 480V 60Hz 3phase                                      | A    | 10                      |
| LRA 600V 60Hz 3phase                                      | A    | 60                      |
| FLA 600V 60Hz 3phase                                      | A    | 10                      |
| Definite Purpose Ratings (100,000 cycles acc. to UL 1995) |      |                         |
| LRA 480V 60Hz 3phase                                      | A    | 90                      |
| FLA 480V 60Hz 3phase                                      | A    | 15                      |
| Elevator Control  |      |                         |
| 200V 60Hz 3phase  | HP   | 2                       |
| 200V 60Hz 3phase  | A    | 7.8                     |
| 240V 60Hz 3phase  | HP   | 3                       |
| 240V 60Hz 3phase  | A    | 9.6                     |
| 480V 60Hz 3phase  | HP   | 7.5                     |
| 480V 60Hz 3phase  | A    | 11                      |
| 600V 60Hz 3phase  | HP   | 7.5                     |

|                  |   |   |
|------------------|---|---|
| 600V 60Hz 3phase | A | 9 |
|------------------|---|---|

## Design verification as per IEC/EN 61439

| Technical data for design verification   |            |    |      |
|--|------------|----|------|
| Rated operational current for specified heat dissipation   | $I_n$      | A  | 15.5 |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W  | 0.8  |
| Equipment heat dissipation, current-dependent  | $P_{vid}$  | W  | 0    |
| Static heat dissipation, non-current-dependent   | $P_{vs}$   | W  | 2.6  |
| Heat dissipation capacity  | $P_{diss}$ | W  | 0    |
| Operating ambient temperature min.   |            | °C | -25  |
| Operating ambient temperature max.   |            | °C | 60   |
| IEC/EN 61439 design verification   |            |    |      |
| 10.2 Strength of materials and parts   |            |    |      |
| 10.2.2 Corrosion resistance  |            |    |      |
| 10.2.3.1 Verification of thermal stability of enclosures   |            |    |      |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat   |            |    |      |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |            |    |      |
| 10.2.4 Resistance to ultra-violet (UV) radiation   |            |    |      |
| 10.2.5 Lifting   |            |    |      |
| 10.2.6 Mechanical impact   |            |    |      |
| 10.2.7 Inscriptions  |            |    |      |
| 10.3 Degree of protection of ASSEMBLIES  |            |    |      |
| 10.4 Clearances and creepage distances   |            |    |      |
| 10.5 Protection against electric shock   |            |    |      |
| 10.6 Incorporation of switching devices and components   |            |    |      |
| 10.7 Internal electrical circuits and connections  |            |    |      |
| 10.8 Connections for external conductors   |            |    |      |
| 10.9 Insulation properties   |            |    |      |
| 10.9.2 Power-frequency electric strength   |            |    |      |
| 10.9.3 Impulse withstand voltage   |            |    |      |
| 10.9.4 Testing of enclosures made of insulating material   |            |    |      |
| 10.10 Temperature rise   |            |    |      |
| 10.11 Short-circuit rating   |            |    |      |
| 10.12 Electromagnetic compatibility  |            |    |      |
| 10.13 Mechanical function  |            |    |      |

## Technical data ETIM 7.0

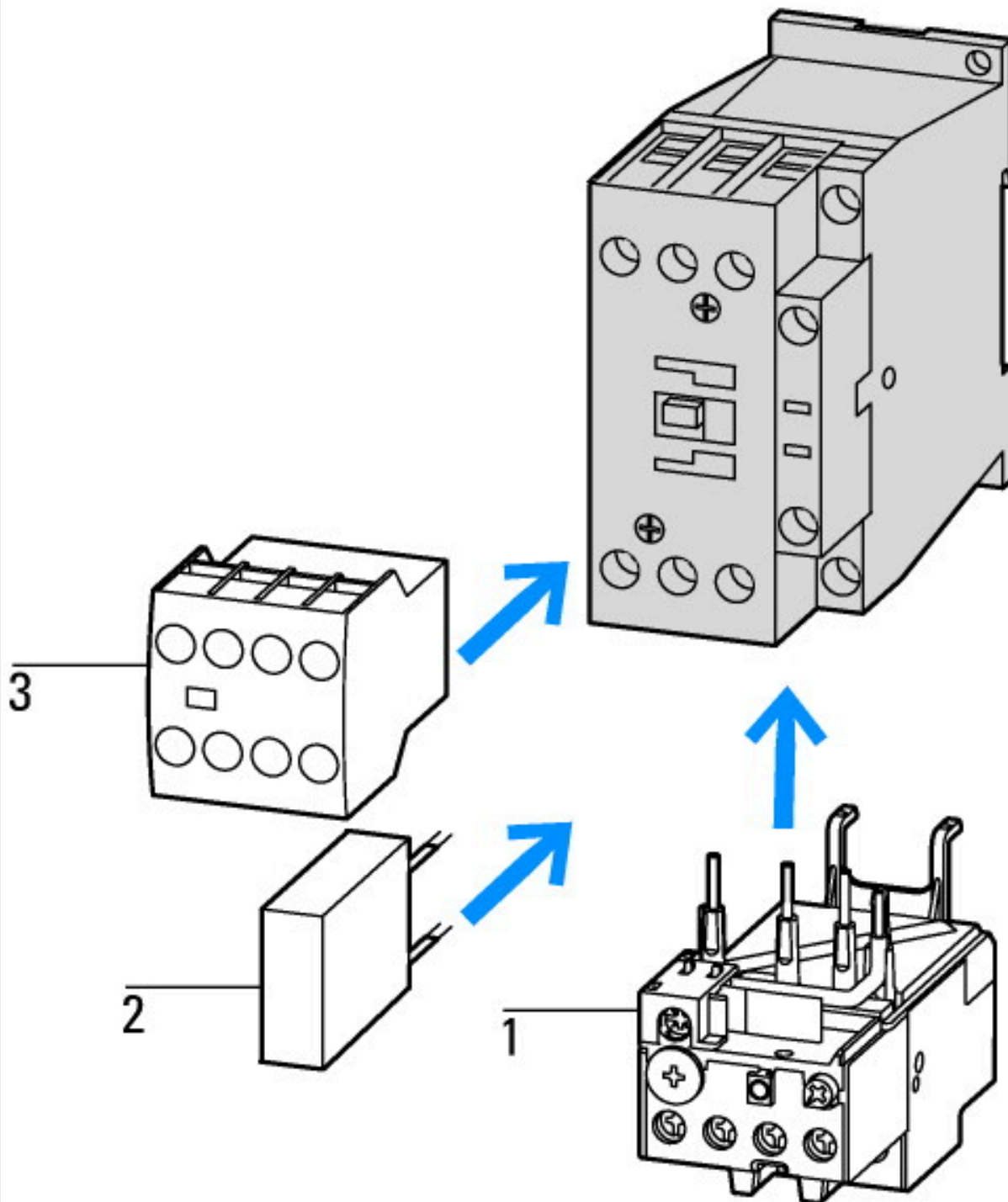
| Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)   |  |    |         |
|---|--|----|---------|
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015]) |  |    |         |
| Rated control supply voltage $U_s$ at AC 50HZ   |  | V  | 0 - 0   |
| Rated control supply voltage $U_s$ at AC 60HZ   |  | V  | 0 - 0   |
| Rated control supply voltage $U_s$ at DC  |  | V  | 24 - 24 |
| Voltage type for actuating  |  |    | DC      |
| Voltage type for actuating  |  |    | DC      |
| Rated operation current $I_e$ at AC-1, 400 V  |  | A  | 22      |
| Rated operation current $I_e$ at AC-3, 400 V  |  | A  | 15.5    |
| Rated operation power at AC-3, 400 V  |  | kW | 7.5     |
| Rated operation current $I_e$ at AC-4, 400 V  |  | A  | 7       |
| Rated operation power at AC-4, 400 V  |  | kW | 3       |
| Rated operation power NEMA  |  | kW | 7.4     |
| Modular version   |  |    | No      |
| Number of auxiliary contacts as normally open contact   |  |    | 1       |

|   |                  |
|---|------------------|
| Number of auxiliary contacts as normally closed contact | 0                |
| Type of electrical connection of main circuit           | Screw connection |
| Number of normally closed contacts as main contact      | 0                |
| Number of main contacts as normally open contact        | 3                |

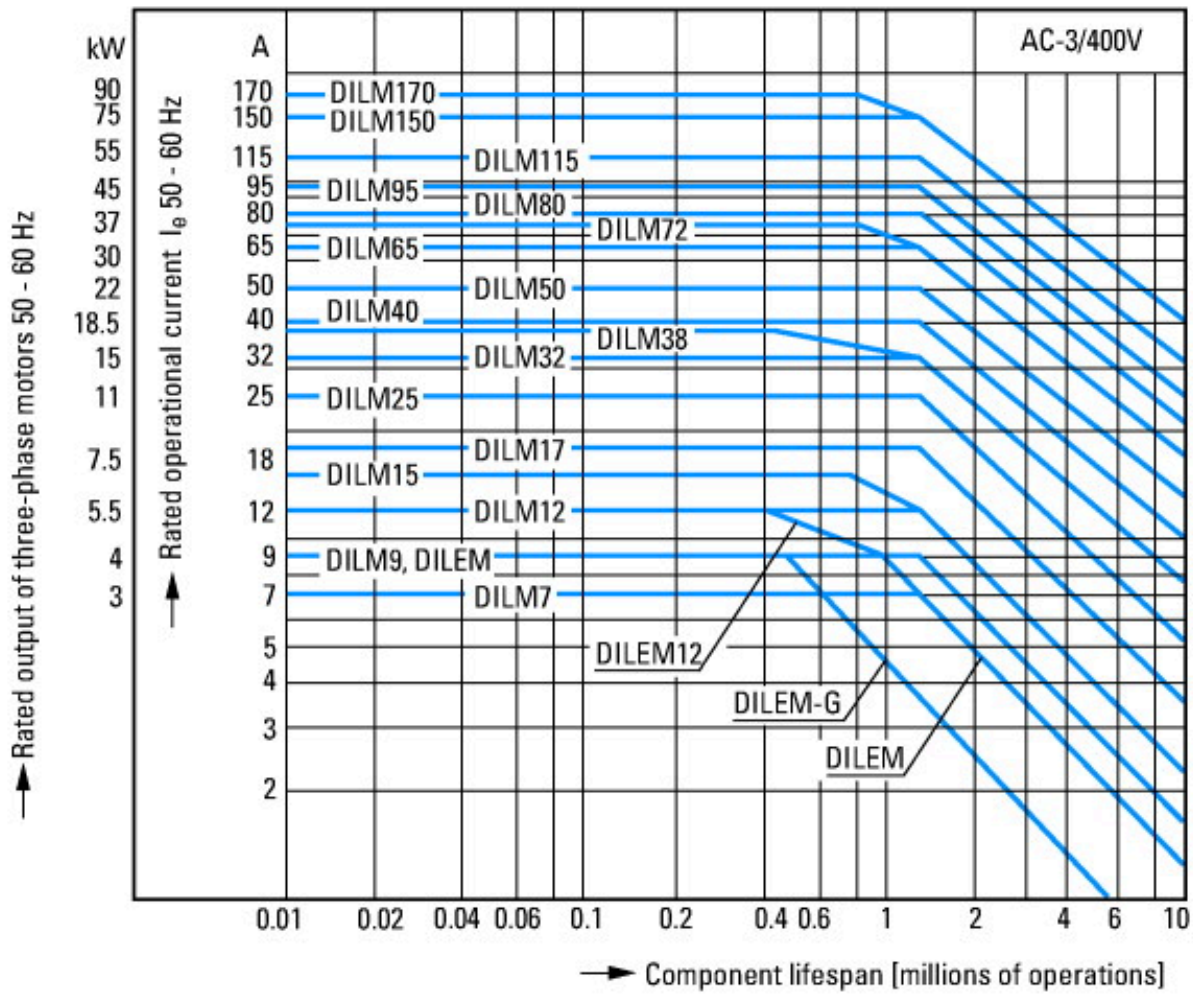
## Approvals

|                                      |  |
|--------------------------------------|--|
| Product Standards                    | IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking |
| UL File No.                          | E29096   |
| UL Category Control No.              | NLDX   |
| CSA File No.                         | 012528   |
| CSA Class No.                        | 2411-03, 3211-04   |
| North America Certification          | UL listed, CSA certified   |
| Specially designed for North America | No   |

## Characteristics



1: Overload relay  
2: Suppressor

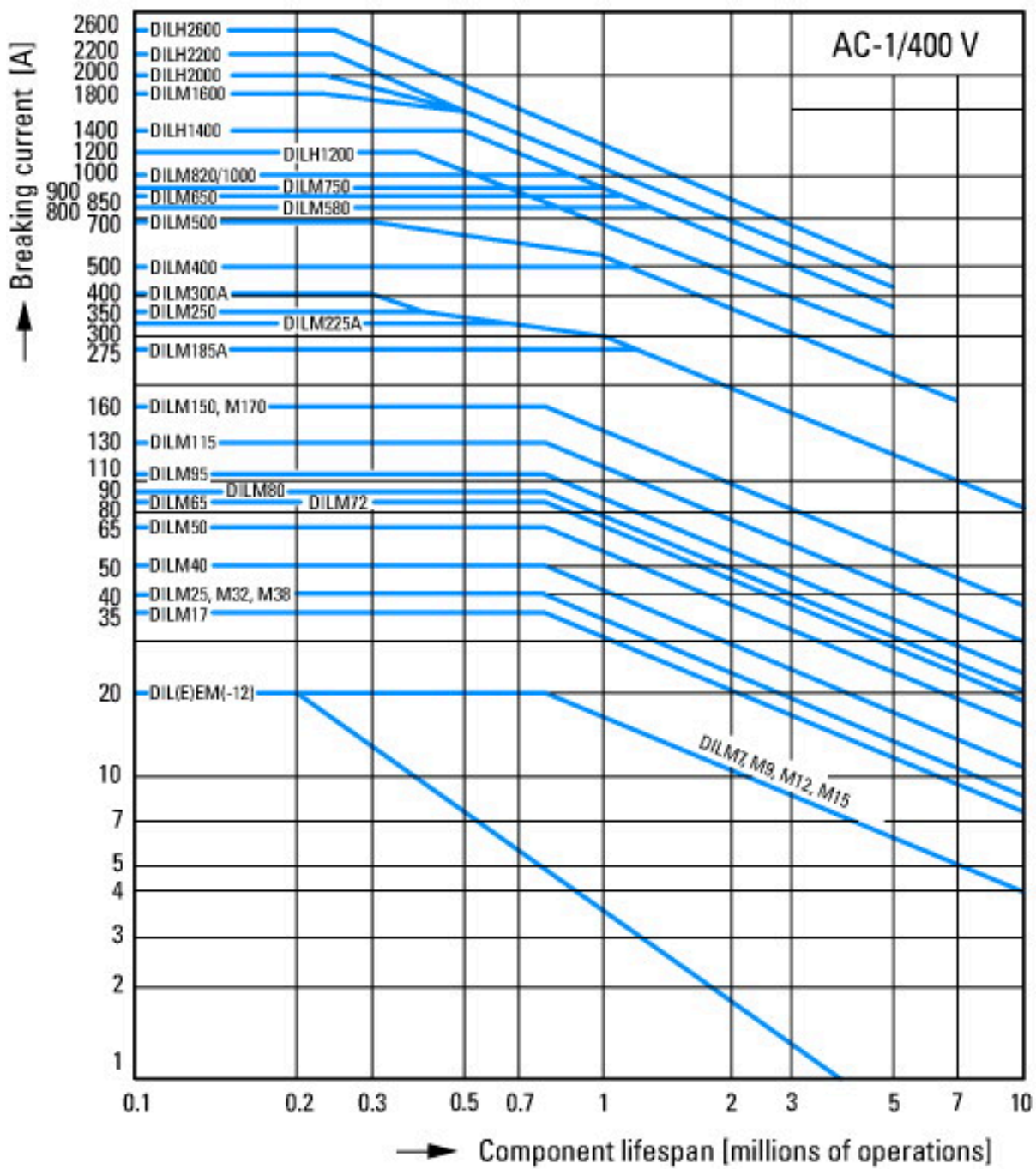


Normal AC induction motor  
 Operating characteristics  
 Switch on: from stop  
 Switch off: during run  
 Electrical characteristics:  
 Switch on: up to 6 x Rated motor current  
 Switch off: up to 1 x Rated motor current  
 Utility category



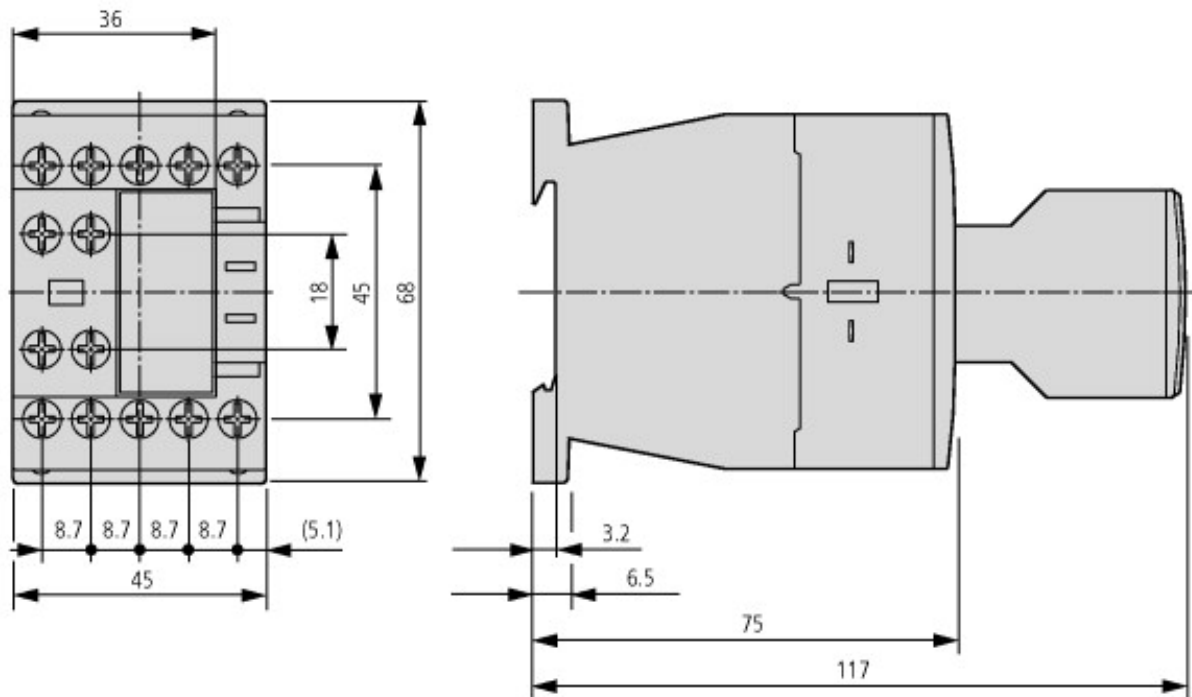


Extreme switching duty  
 Normal AC induction motor  
 Operating characteristics  
 Inching, plugging, reversing  
 Electrical characteristics:  
 Switch on: up to 6 x Rated motor current  
 Switch off: up to 6 x Rated motor current  
 Utilization

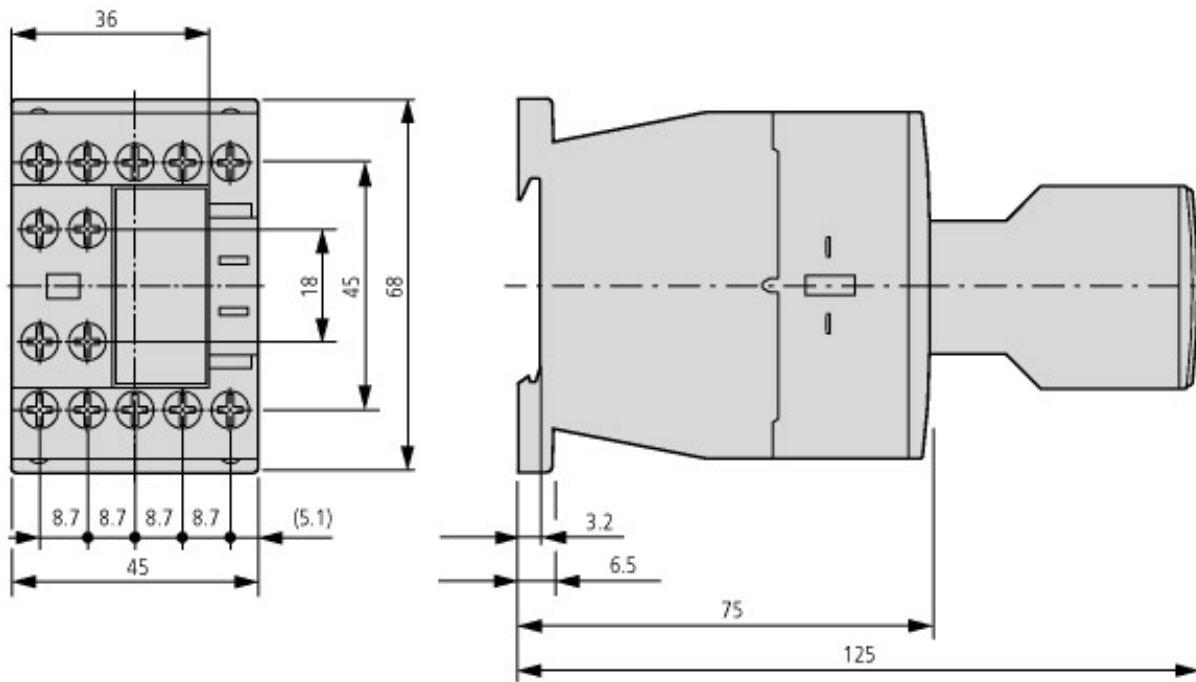


Switching conditions for non-motor consumers, 3 pole, 4 pole  
 Operating characteristics  
 Non inductive and slightly inductive loads  
 Electrical characteristics  
 Switch on: 1 x rated operational current  
 Switch off: 1 x rated operational current  
 Utilization category  
 100 % AC-1  
 Typical examples of application  
 Electric heat

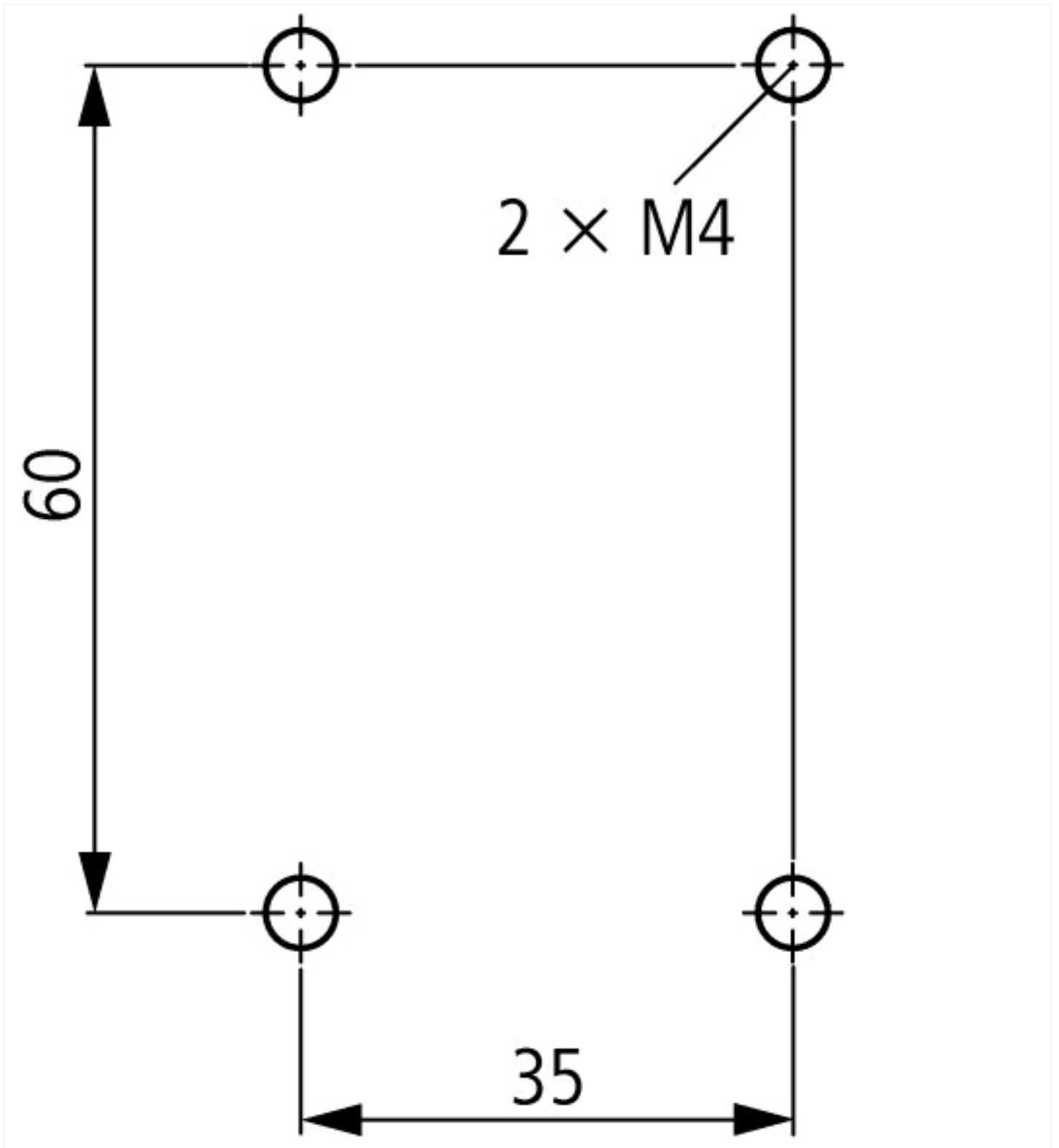
## Dimensions



Contactor with auxiliary contact module DILM32-XHI.../DILA-XHI...



Contactor with auxiliary contact module DILA-XHIT...



### Additional product information (links)

#### IL03407013Z (AWA2100-2126) Contactors

|  |   |
|--|---|
| IL03407013Z (AWA2100-2126) Contactors  | <a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2018_07.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2018_07.pdf</a>   |
| Motor starters and "Special Purpose Ratings" for the North American market                   | <a href="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</a> |
| Switchgear of Power Factor Correction Systems  | <a href="http://www.moeller.net/binary/ver_techpapers/ver934en.pdf">http://www.moeller.net/binary/ver_techpapers/ver934en.pdf</a>   |
| X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely               | <a href="http://www.moeller.net/binary/ver_techpapers/ver938en.pdf">http://www.moeller.net/binary/ver_techpapers/ver938en.pdf</a>   |
| Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions | <a href="http://www.moeller.net/binary/ver_techpapers/ver944en.pdf">http://www.moeller.net/binary/ver_techpapers/ver944en.pdf</a>   |
| Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors        | <a href="http://www.moeller.net/binary/ver_techpapers/ver949en.pdf">http://www.moeller.net/binary/ver_techpapers/ver949en.pdf</a>   |
| Switchgear for Luminaires  | <a href="http://www.moeller.net/binary/ver_techpapers/ver955en.pdf">http://www.moeller.net/binary/ver_techpapers/ver955en.pdf</a>   |

|  |   |
|--|---|
| Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts | <a href="http://www.moeller.net/binary/ver_techpapers/ver956en.pdf">http://www.moeller.net/binary/ver_techpapers/ver956en.pdf</a> |
| The Interaction of Contactors with PLCs  | <a href="http://www.moeller.net/binary/ver_techpapers/ver957en.pdf">http://www.moeller.net/binary/ver_techpapers/ver957en.pdf</a> |
| Busbar Component Adapters for modern Industrial control panels                                 | <a href="http://www.moeller.net/binary/ver_techpapers/ver960en.pdf">http://www.moeller.net/binary/ver_techpapers/ver960en.pdf</a> |