



**Contactor relay, 4N/O, DC current**

**Part no.** DILA-40(24VDC)  
**Catalog No.** 276344  
**Eaton Catalog No.** XTRE10B40TD  
**EL-Nummer (Norway)** 4130203



**Delivery program**

|   |       |   |   |
|---|-------|---|---|
| Product range                                 |       |   | DILA relays   |
| Application                                   |       |   | Contactor relays  |
| Description                                   |       |   | Basic devices with positive operation contacts  |
| Connection technique                          |       |   | Screw terminals   |
| <b>Rated operational current</b>              |       |   |   |
| AC-15   |       |   |   |
| 220 V 230 V 240 V                             | $I_e$ | A | 4   |
| 380 V 400 V 415 V                             | $I_e$ | A | 4   |
| <b>Contacts</b>                               |       |   |   |
| N/O = Normally open                           |       |   | 4 N/O   |
| Contact sequence                              |       |   |   |
| <b>Code number and version of combination</b> |       |   |   |
| Distinctive number                            |       |   | 40E   |
| Can be combined with auxiliary contact module |       |   | DILA-XHI(V)...  |
| Actuating voltage                             |       |   | 24 V DC   |
| Voltage AC/DC                                 |       |   | DC operation  |
| Suppressor circuit                            |       |   | built-in  |
| <b>Instructions</b>                           |       |   | Contact numbers to EN 50011<br>Coil terminal markings to EN 50005<br>built-in suppressor circuit' |

**Technical data**

|  |              |               |  |
|--|--------------|---------------|--|
| <b>General</b>   |              |               |  |
| Standards  |              |               | IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA                                  |
| Lifespan, mechanical                                   |              |               |  |
| DC operated  | Operations   | $\times 10^6$ | 20   |
| Maximum operating frequency                            | Operations/h |               | 9000   |
| 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  |
| Ambient temperature, storage                           |              | °C            | - 40 - 80  |
| Mounting position                                      |              |               |  |
| Mounting position                                      |              |               |  |
| <b>Mechanical shock resistance (IEC/EN 60068-2-27)</b> |              |               |  |
| Half-sinusoidal shock, 10 ms                           |              |               |  |
| Basic unit with auxiliary contact module               |              | g             |  |
| N/O contact  |              | g             | 7  |
| N/C contact  |              | g             | 5  |
| Degree of Protection                                   |              |               | IP20   |

|   |  |                 |                                      |
|---|--|-----------------|--------------------------------------|
| Protection against direct contact when actuated from front (EN 50274) |  |                 | Finger and back-of-hand proof        |
| Weight  |  |                 |                                      |
| DC operated   |  | kg              | 0.294                                |
| Terminal capacities   |  | mm <sup>2</sup> |                                      |
| Screw terminals   |  |                 |                                      |
| 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                                 |
| Pozidriv screwdriver  |  | Size            | 2                                    |
| Standard screwdriver  |  | mm              | 0.8 x 5.5<br>1 x 6                   |
| Max. tightening torque  |  | Nm              | 1.2                                  |

## Contacts

|   |                |           |  |
|---|----------------|-----------|--|
| Positive operating contacts to ZH 1/457, including auxiliary contact module |                |           | Yes  |
| Rated impulse withstand voltage   | $U_{imp}$      | V AC      | 6000   |
| Overtoltage 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 auxiliary contacts   |                | V AC      | 400  |
| between the auxiliary contacts  |                | V AC      | 400  |
| Rated operational current   |                | A         |  |
| Conventional free air thermal current, 1 pole                               |                |           |  |
| Open  |                |           |  |
| at 60 °C  | $I_{th} = I_e$ | A         | 16   |
| AC-15   |                |           |  |
| 220 V 230 V 240 V   | $I_e$          | A         | 4  |
| 380 V 400 V 415 V   | $I_e$          | A         | 4  |
| 500 V   | $I_e$          | A         | 1.5  |
| DC current  |                |           |  |
| Notes   |                |           | Switch-on and switch-off conditions based on DC-13, time constant as specified.                                    |
| DC L/R $\leq$ 15 ms   |                |           |  |
| Contacts in series:   |                | A         |  |
| 1   | 24 V           | A         | 10   |
| 1   | 60 V           | A         | 6  |
| 2   | 60 V           | A         | 10   |
| 1   | 110 V          | A         | 3  |
| 3   | 110 V          | A         | 6  |
| 1   | 220 V          | A         | 1  |
| 3   | 220 V          | A         | 5  |
| DC L/R $\leq$ 50 ms   |                |           |  |
| Contacts in series:   |                | A         |  |
| 3   | 24 V           | A         | 4  |
| 3   | 60 V           | A         | 4  |
| 3   | 110 V          | A         | 2  |
| 3   | 220 V          | A         | 1  |
| Control circuit reliability   | Failure rate   | $\lambda$ | $<10^{-8}$ , < one failure at 100 million operations<br>(at $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA) |
| Short-circuit rating without welding  |                |           |  |
| Maximum overcurrent protective device                                       |                |           |  |
| 220 V 230 V 240 V   |                | PKZM0     | 4  |
| 380 V 400 V 415 V   |                | PKZM0     | 4  |

|                                       |  |         |      |
|---------------------------------------|--|---------|------|
| Short-circuit protection maximum fuse |  |         |      |
| 500 V                                 |  | A gG/gL | 10   |
| Current heat loss at $I_{th}$         |  |         |      |
| DC operated                           |  | W       | 1.07 |

## Magnet systems

|   |                   |         |  |
|---|-------------------|---------|--|
| Voltage tolerance   |                   |         |  |
| DC operated   |                   |         |  |
| Notes   |                   |         | Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification |
| Pick-up voltage   |                   |         |  |
| Pick-up voltage min.  |                   | $x U_c$ | 0.8  |
| Pick-up voltage max.  |                   | $x U_c$ | 1.1  |
| at 24 V: without auxiliary contact component (40 °C)                              | Pick-up           | $x U_c$ |  |
| Voltage tolerance, DC coil without auxiliary contact module, min. pick-up voltage |                   | $x U_c$ | 0.7  |
| Without auxiliary contact module  | Pick-up           | $x U_c$ | 1.3  |
| Power consumption   |                   |         |  |
| DC operation  |                   |         |  |
| DC operated   | Pull-in = sealing | W       | 2.6  |
| duty factor   |                   | % DF    | 100  |
| Changeover time at 100 % $U_S$ (recommended value)                                |                   |         |  |
| DC operated closing delay   |                   | ms      |  |
| Switching times, DC operated, max. closing delay                                  |                   | ms      | 31   |
| DC operated N/O contact opening delay   |                   | ms      |  |
| Switching times, DC actuated make contact Opening delay, max.                     |                   | ms      | 12   |

## Rating data for approved types

|                    |  |   |      |
|--------------------|--|---|------|
| Auxiliary contacts |  |   |      |
| Pilot Duty         |  |   |      |
| AC operated        |  |   | A600 |
| DC operated        |  |   | P300 |
| General Use        |  |   |      |
| AC                 |  | V | 600  |
| AC                 |  | A | 15   |
| DC                 |  | V | 250  |
| DC                 |  | A | 1    |

## 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  | 1  |
| 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 max.   |            | °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  |            |    | 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) / Contactor relay (EC000196)  |   |  |                  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss8.1-27-37-10-01 [AAB716011]) |   |  |                  |
| Rated control supply voltage Us at AC 50HZ   | V |  | 0 - 0            |
| Rated control supply voltage Us at AC 60HZ   | V |  | 0 - 0            |
| Rated control supply voltage Us at DC  | V |  | 24 - 24          |
| Voltage type for actuating   |   |  | DC               |
| Rated operation current Ie , 400 V   | A |  | 4                |
| Connection type auxiliary circuit  |   |  | Screw connection |
| Mounting method  |   |  | DIN-rail/screw   |
| Interface  |   |  | No               |
| Number of auxiliary contacts as normally closed contact  |   |  | 0                |
| Number of auxiliary contacts as normally open contact  |   |  | 4                |
| Number of auxiliary contacts as normally closed contact, delayed switching   |   |  | 0                |
| Number of auxiliary contacts as normally open contact, leading   |   |  | 0                |
| With LED indication  |   |  | No               |
| Number of auxiliary contacts as change-over contact  |   |  | 0                |
| Manual operation possible  |   |  | No               |

## Approvals

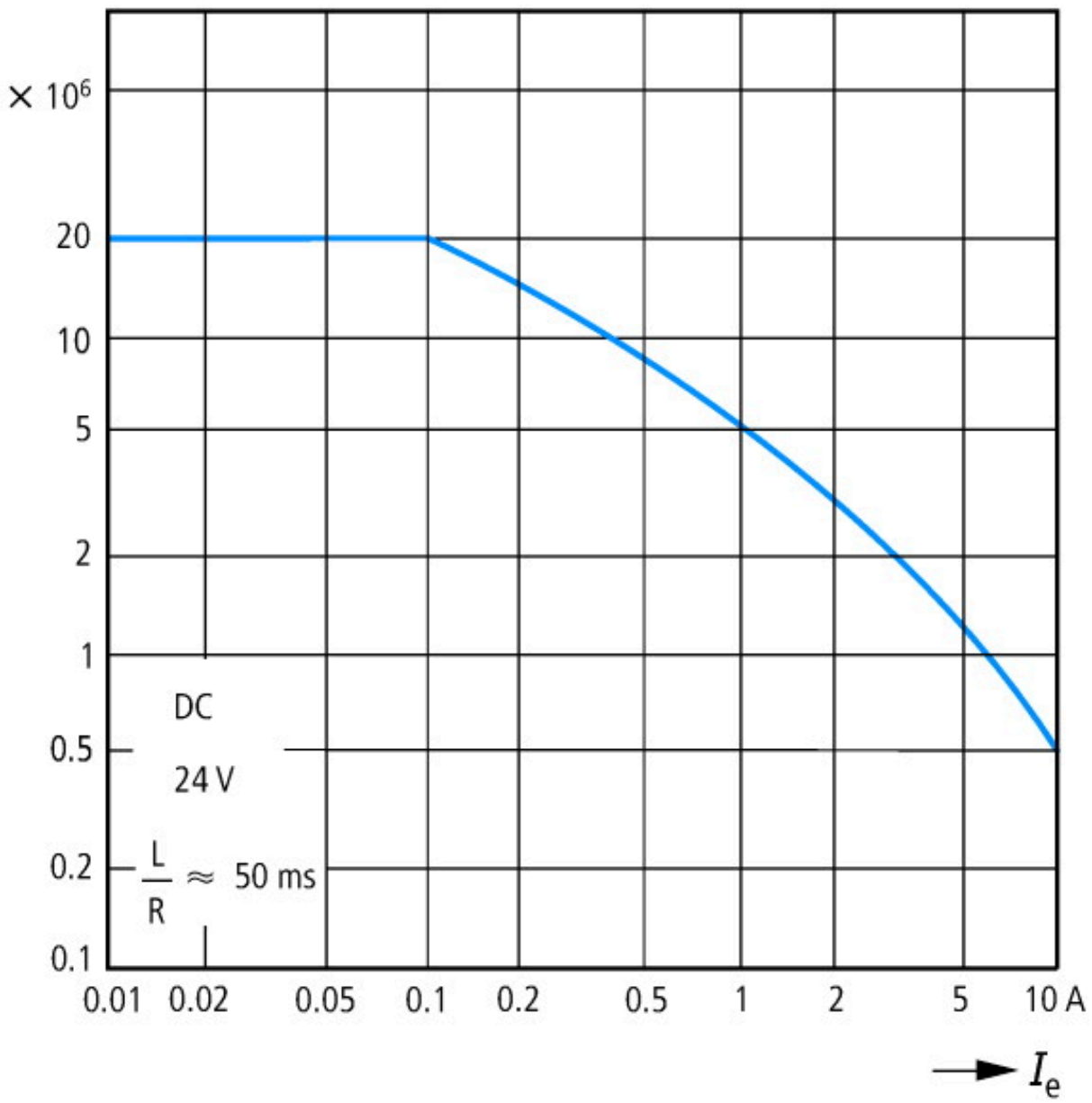
|                                      |  |  |
|--------------------------------------|--|--|
| Product Standards                    |  | IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking |
| UL File No.                          |  | E29184   |
| UL Category Control No.              |  | NKCR   |
| CSA File No.                         |  | 012528   |
| CSA Class No.                        |  | 3211-03  |
| North America Certification          |  | UL listed, CSA certified   |
| Specially designed for North America |  | No   |



- 1: Suppressor
- 2: Auxiliary contact module

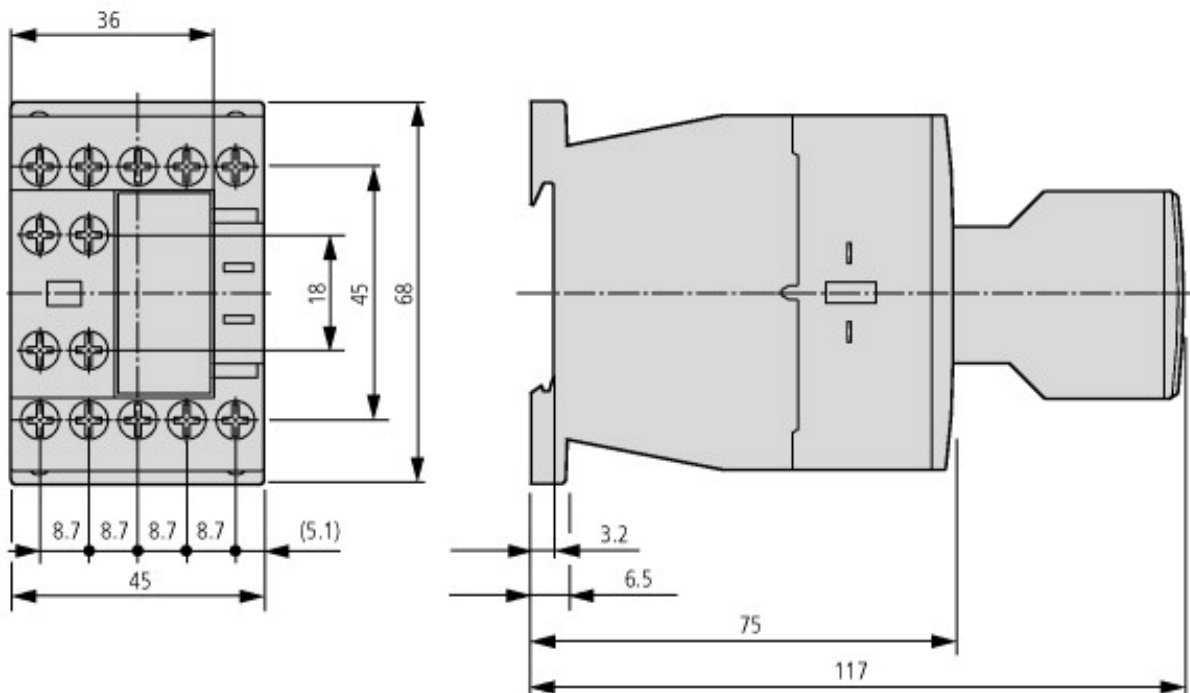


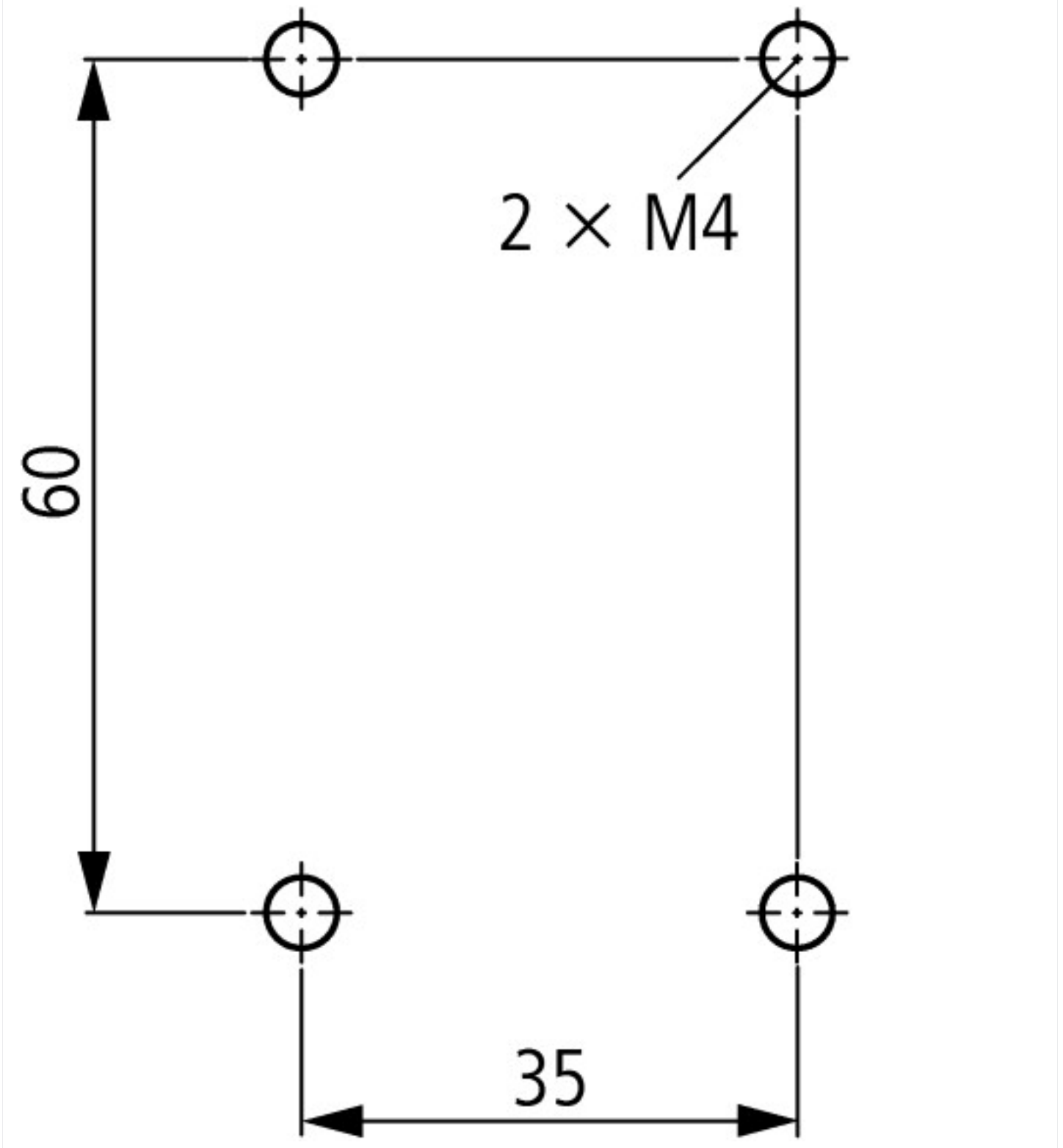
Component lifespan (operations)  
 $I_e$  = Rated operational current



Component lifespan (operations)  
 $I_e$  = Rated operational current

## Dimensions





## Assets (Links)

### Declaration of Conformity

00002560

### Instruction Leaflets

IL03407013Z2012\_03

## Additional product information (links)

### IL03407013Z (AWA2100-2126) Contactors

IL03407013Z (AWA2100-2126) Contactors [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407013Z2012\\_03.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2012_03.pdf)

UL/CSA: Approved rating data <http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.84>