



## Contactor relay,4M/00e,DC-operated

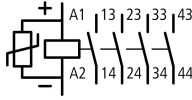
# EATON

Powering Business Worldwide™

**Part no.** DILA-40(24VDC)

**Article no.** 276344

### Program

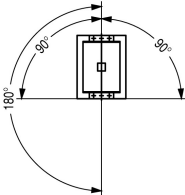
|   |          |   |   |
|---|----------|---|---|
| Product range                                 |          |   | DILA relays   |
| Application                                   |          |   | Contactor relays  |
| Description                                   |          |   | Basic devices with positive operation contacts                                      |
| Connection technique                          |          |   | Screw terminals   |
| Contacts                                      |          |   |   |
| N/O = Normally open                           |          |   | 4 N/O   |
| AC-15   |          |   |   |
| AC-15   |          |   |   |
| 220 V<br>230 V<br>240 V                       | $I_e$    | A | 4   |
| 380 V<br>400 V<br>415 V                       | $I_e$    | A | 4   |
| Conv. thermal current                         | $I_{th}$ | A | 16  |
| Code number and version of combination        |          |   |   |
| Distinctive number                            |          |   | 40E   |
| Contact sequence                              |          |   |  |
| Can be combined with auxiliary contact module |          |   | DILA-XHI(V)...  |
| Actuating voltage                             |          |   | 24 V DC   |
| Voltage AC/DC                                 |          |   | DC operation  |

### Approbationen

|                           |   |
|---------------------------|---|
| UL approval               | Yes   |
| CSA approval              | Yes   |
| Product Standards         | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking |
| UL File No.               | E29184  |
| UL CCN                    | NKCR  |
| CSA File No.              | 012528  |
| CSA Class No.             | 3211-03   |
| NA Certification          | UL listed, CSA certified                                  |
| Specially designed for NA | No  |

### General

|                              |            |              |  |
|------------------------------|------------|--------------|--|
| Standards                    |            |              | IEC/EN 60947, VDE 0660, UL, CSA  |
| Lifespan, mechanical         |            |              |  |
| AC operated                  | Operations | $x 10^6$     | 20   |
| DC operated                  | Operations | $x 10^6$     | 20   |
| Maximum operating frequency  |            | Ops./h       |  |
| 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          |            | °C           |  |
| Open                         |            | °C           | - 25 - 60  |
| Enclosed                     |            | °C           | - 25 - 40  |
| Ambient temperature, storage |            | °C           | - 40 - 80  |
| Mounting position            |            |              |  |

|   |  |                 |   |
|---|--|-----------------|---|
| Mounting position   |  |                 |  |
| Mechanical shock resistance (IEC/EN 60068-2-27)                       |  |                 |   |
| Half-sinusoidal shock, 10 ms  |  |                 |   |
| Basic unit with auxiliary contact module                              |  | g               |   |
| N/O contact   |  | g               | 7   |
| N/C contact   |  | g               | 5   |
| Protection type   |  |                 | IP20  |
| Protection against direct contact when actuated from front (EN 90274) |  |                 | Finger and back-of-hand proof   |
| Weight  |  |                 |   |
| AC operated   |  | kg              | 0.23  |
| DC operated   |  | kg              | 0.28  |
| 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   |
| 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   |
| Spring-loaded terminals   |  |                 |   |
| Solid   |  | mm <sup>2</sup> | 1 x (0,75 - 2,5)<br>2 x (0,75 - 2,5)  |
| Flexible with or without ferrule DIN 46228                            |  | mm <sup>2</sup> | 1 x (0,75 - 1,5)<br>2 x (0,75 - 1,5)  |
| Solid or stranded   |  | AWG             | 18 - 14   |
| Standard screwdriver  |  | mm              | 0.6 x 3.5   |

## Contacts

|   |           |         |       |
|---|-----------|---------|-------|
| Positive operating contacts to ZH 1/457, including auxiliary contact module |           |         | Yes   |
| Rated impulse withstand voltage   | $U_{imp}$ | V<br>AC | 6000  |
| Overvoltage category/pollution degree                                       |           |         | III/3 |
| Rated insulation voltage  | $U_i$     | V<br>AC | 690   |
| Rated operational voltage   | $U_e$     | V<br>AC | 690   |
| Safe isolation to VDE 0106 Part 101 and Part 101/A1                         |           |         |       |
| between coil and auxiliary contacts   |           | V<br>AC | 400   |
| between the auxiliary contacts  |           | V<br>AC | 400   |
| Rated operational current   | $I_e$     | A       |       |
| AC-15   |           |         |       |
| 220/240 V   | $I_e$     | A       | 4     |
| 380/415 V   | $I_e$     | A       | 4     |
| 500 V   | $I_e$     | A       | 1.5   |
| DC-13   |           |         |       |
| DC-13 L/R - 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-13 L/R - 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 (at $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA) | Failure rate | $\lambda$      | $<10^{-8}$ , < one failure at 100 million operations |
| Conv. thermal current  | $I_{th}$     | A              | 16   |
| Short-circuit rating without welding   |              |                |  |
| Maximum overcurrent protective device  |              |                |  |
| 220/240 V  |              | PKZM0          | 4  |
| 380/415 V  |              | PKZM0          | 4  |
| Short-circuit protection maximum fuse  |              |                |  |
| 500 V  |              | A<br>gG/<br>gL | 10   |
| Current heat loss at $I_{th}$  |              |                |  |
| AC operated  |              | W              | 0.3  |
| DC operated  |              | W              | 0.3  |

## Magnet systems

|   |         |                      |            |
|---|---------|----------------------|------------|
| Voltage tolerance   |         | $x U_c$              |            |
| AC operated   |         | $x U_c$              |            |
|   | Pick-up | $x U_c$              | 0.8 - 1.1  |
| DC operated   |         | $x U_c$              |            |
|   | Pick-up | $x U_c$              | 0.8 - 1.1  |
| at 24 V: without auxiliary contact component (40 °C)          |         | Pick-up              | $x U_c$    |
|   |         |                      | 0.7 - 1.3  |
| Power consumption   |         |                      |            |
| 50 Hz   | Pick-up | VA                   | 24         |
| 50 Hz   | Sealing | VA                   | 3.4        |
| 50 Hz   | Sealing | W                    | 1.2        |
| 60 Hz   | Pick-up | VA                   | 30         |
| 60 Hz   | Sealing | VA                   | 4.4        |
| 60 Hz   | Sealing | W                    | 1.4        |
| 50/60 Hz  | Pick-up | VA                   | 27<br>25   |
| 50/60 Hz  | Sealing | VA                   | 4.2<br>3.3 |
| 50/60 Hz  | Sealing | W                    | 1.4<br>1.2 |
| DC operated   |         | Pull-in =<br>sealing | W          |
|   |         |                      | 3          |
| Duty factor   |         | %<br>DF              | 100        |
| Switching times at 100 % $U_c$ (approximate values)           |         |                      |            |
| AC operated closing delay                                     |         | ms                   | 15 - 21    |
| AC operated N/O contact opening delay                         |         | ms                   | 9 - 18     |
| 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         |

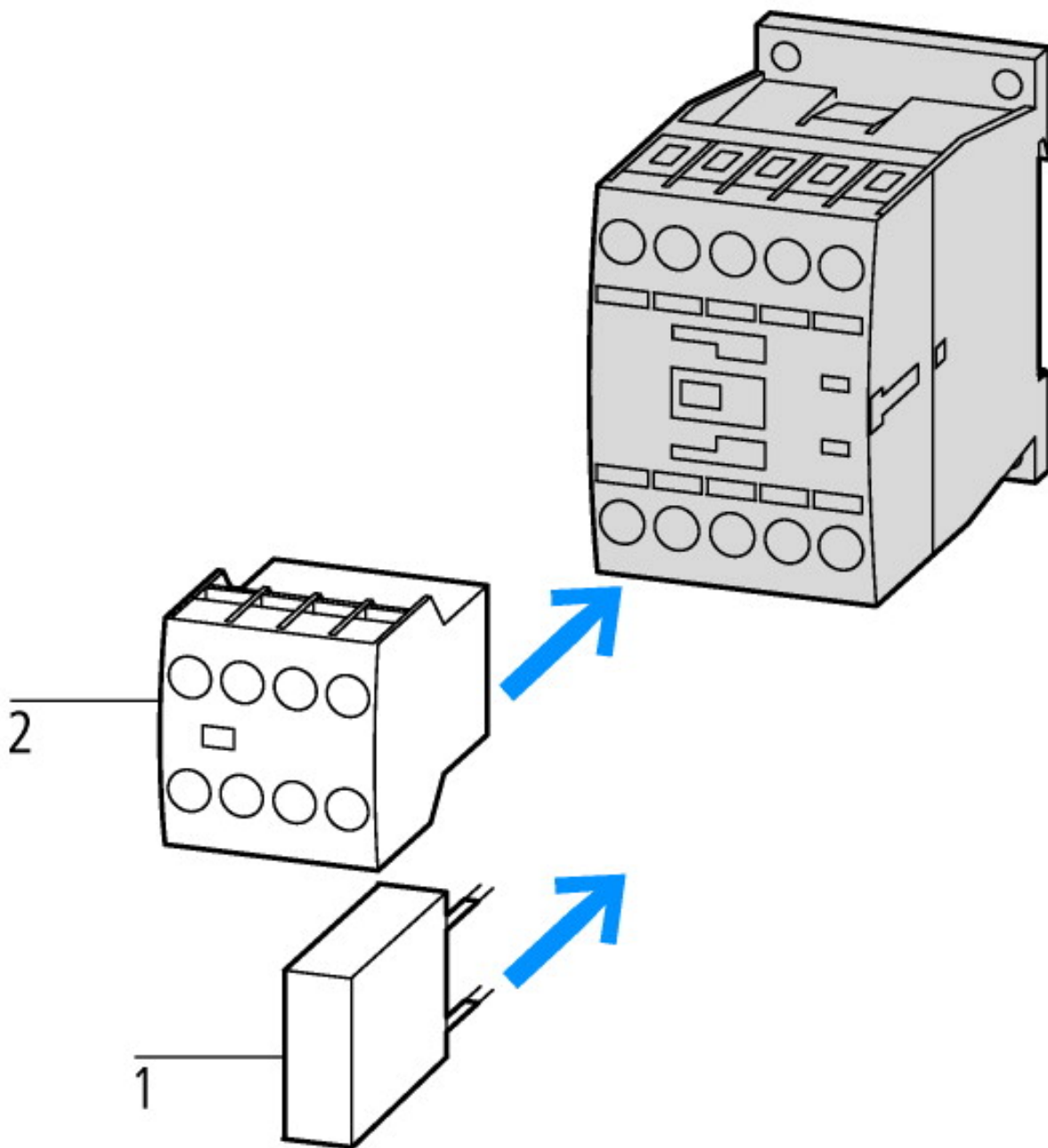
## Notes

**Notes** Making and breaking conditions to DC-13, time constant as stated  
See transparent overlay "Fuses" for time/current characteristics (please enquire)

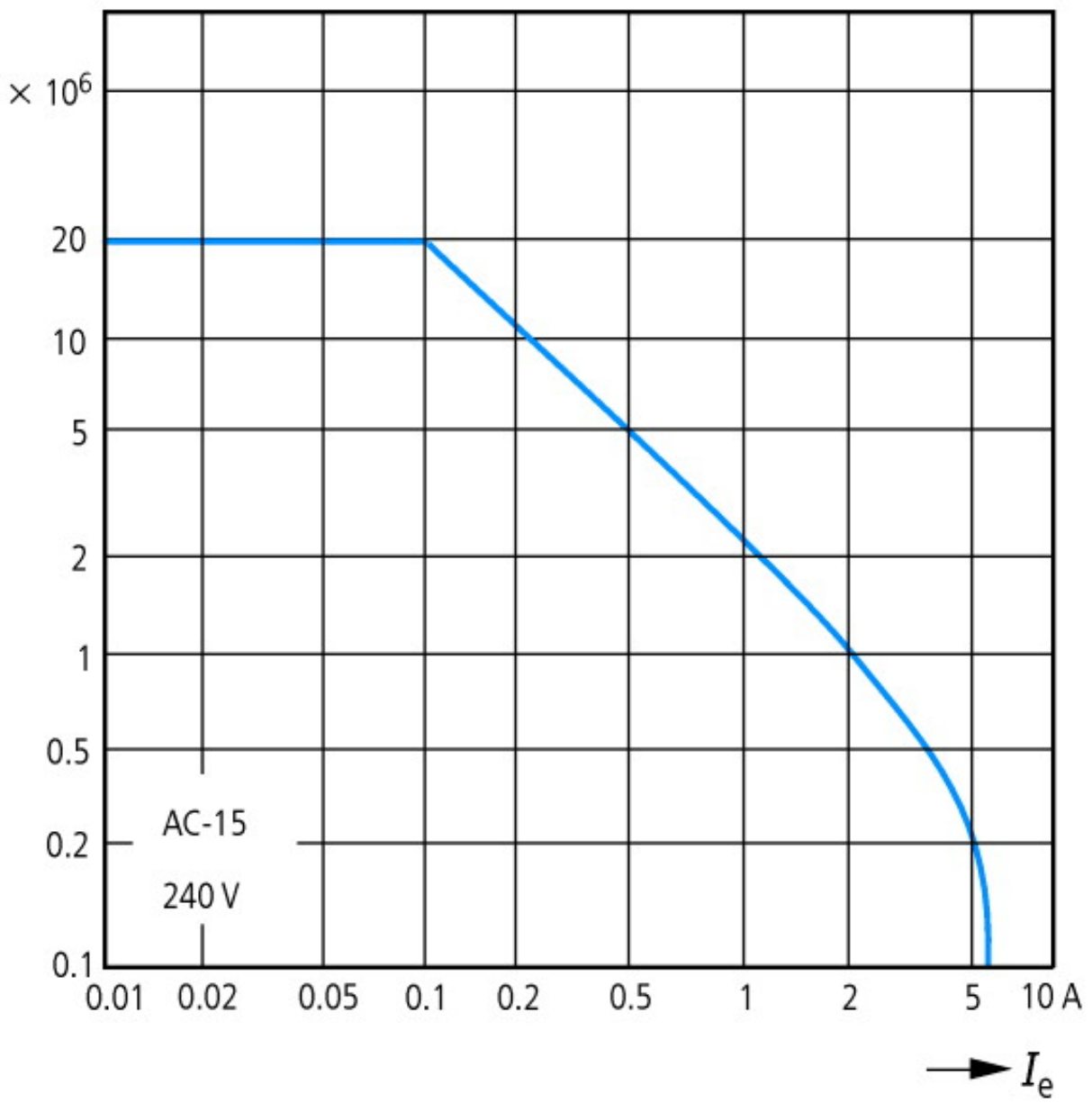
## Technical data according to ETIM 4.0

| Connection type main circuit                            |  |   | Screw connection |
|---|--|---|------------------|
| Rated control voltage $U_s$ at DC                       |  | V | 24               |
| Rated control voltage $U_s$ at AC 60HZ                  |  | V | 0                |
| Rated control voltage $U_s$ at AC 50HZ                  |  | V | 0                |
| Number of auxiliary contacts as changeover contacts     |  |   | 0                |
| Rated operation current $I_e$ , 400 V                   |  | A | 4                |
| Number of auxiliary contacts as N/Cs                    |  |   | 0                |
| Number of auxiliary contacts as N/Os                    |  |   | 4                |
| Voltage type for actuation                              |  |   | DC               |
| Number of auxiliary contacts as N/Os, leading           |  |   | 0                |
| Number of auxiliary contacts as N/Cs, delayed switching |  |   | 0                |

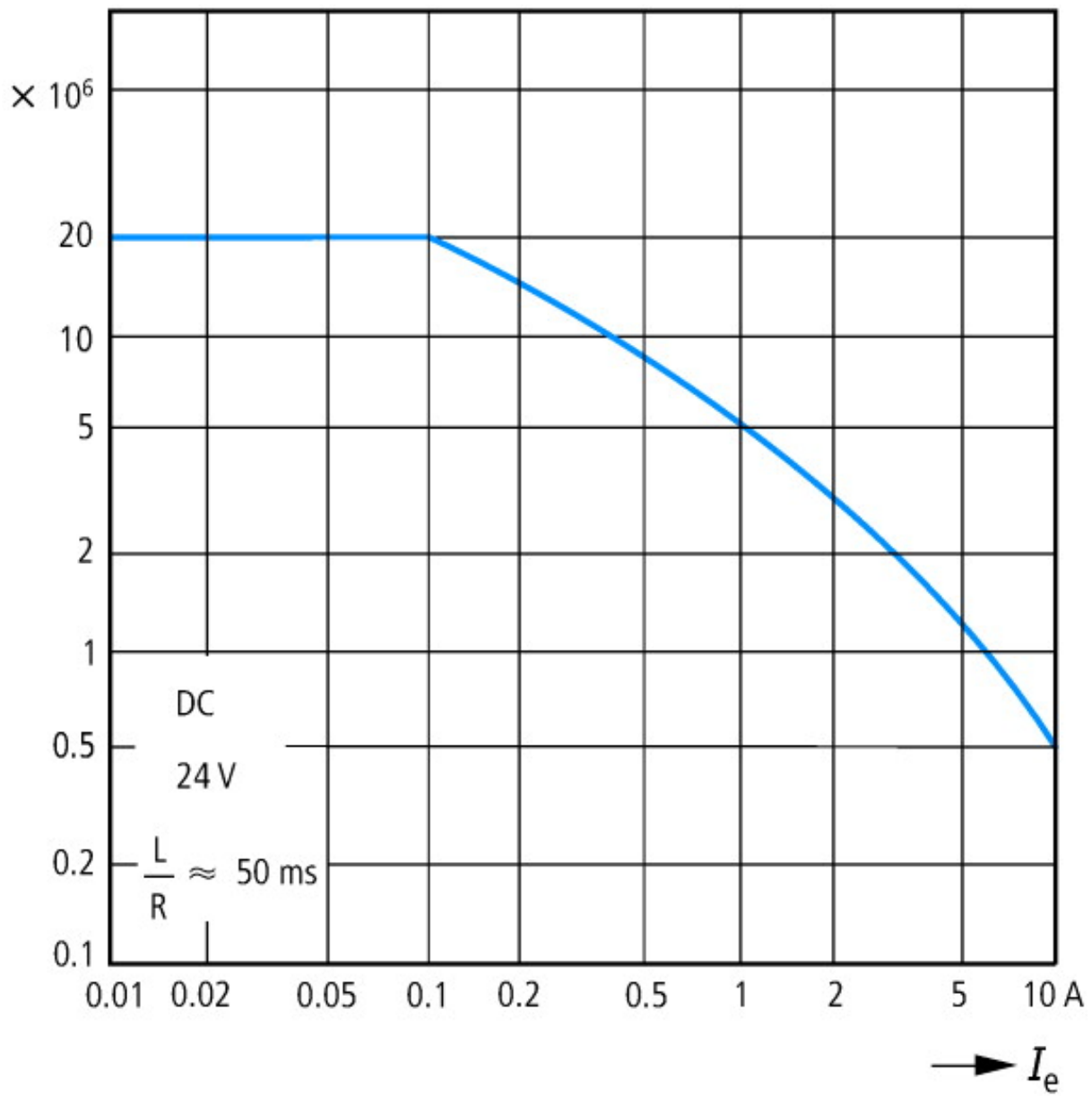
## Characteristics



1: Suppressor  
2: Auxiliary contact module



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



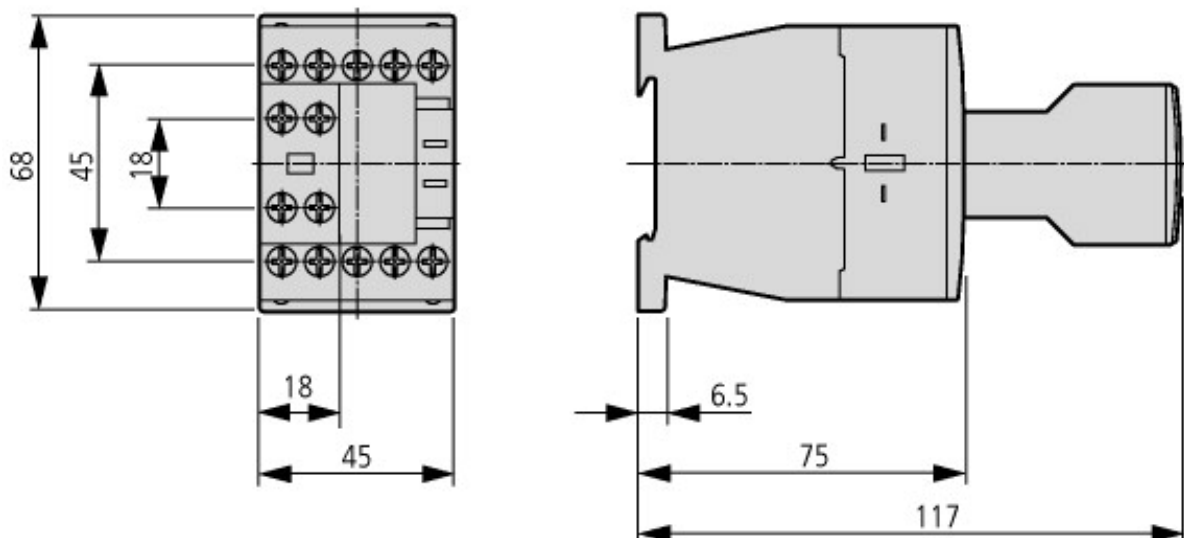
Component lifespan (operations)  
 $I_e$  = Rated operational current

### CAD-Data

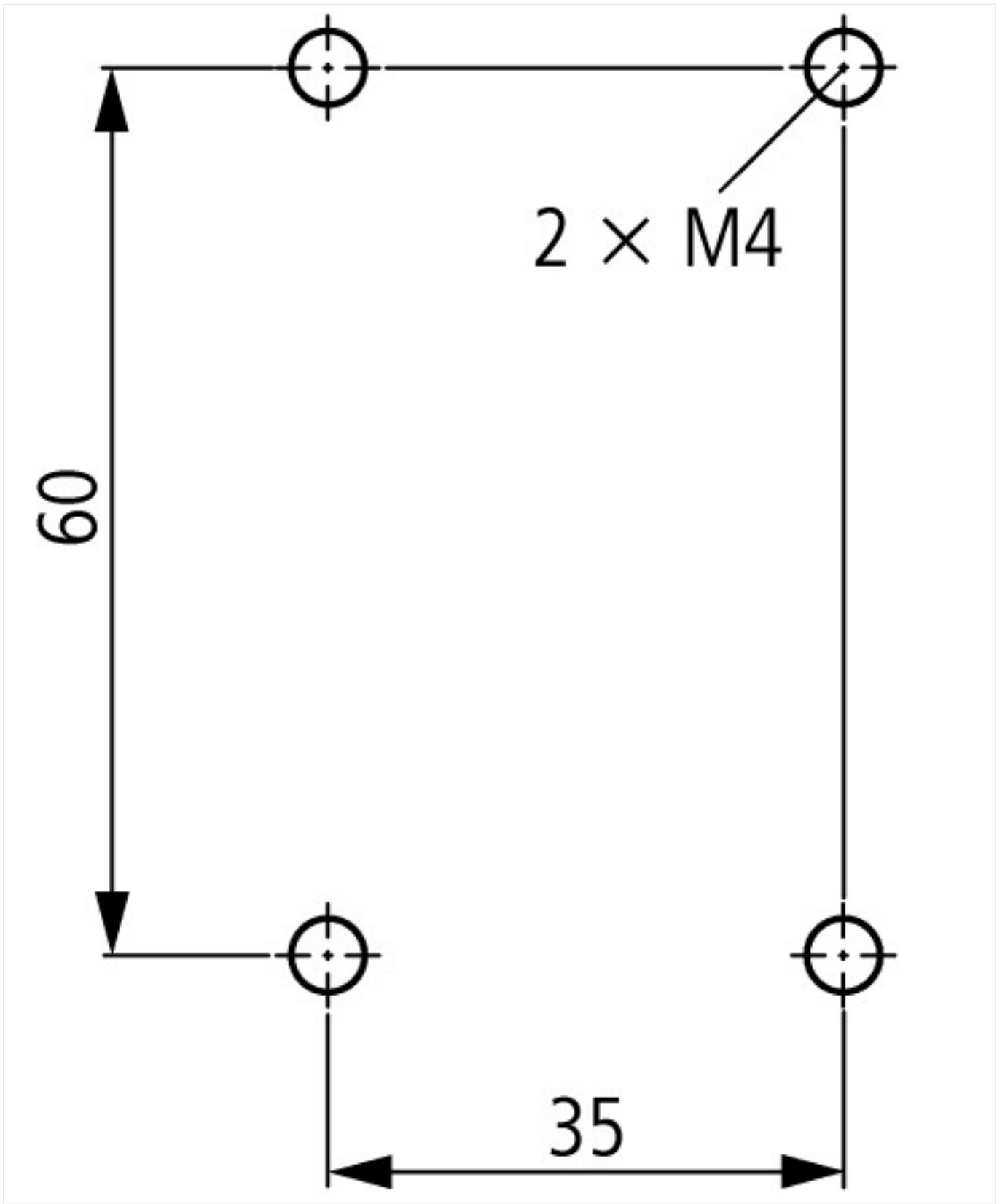
Product standards CAD data:

<http://eaton-moeller.partcommunity.com>

### Dimensions



Contactor with auxiliary contact module



**Additional product information (links)**

IL03407013Z (IL03407013Z) Contactors

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407013Z2010\\_10.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2010_10.pdf)