



**Contactor relay, 2N/O+2N/C, AC**

**Part no.** DILAC-22(230V50/60HZ)  
**Article no.** 276513  
**Catalog No.** XTREC10B22G2

**Delivery program**


|   |       |   |   |   |
|---|-------|---|---|---|
| Product range                                 |       |   |   | DILA relays   |
| Application                                   |       |   |   | Contactor relays  |
| Description                                   |       |   |   | Basic devices with positive operation contacts                    |
| Connection technique                          |       |   |   | Spring-loaded 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                           |       |   |   | 2 N/O   |
| N/C = Normally closed                         |       |   |   | 2 NC  |
| Contact sequence                              |       |   |   |   |
| <b>Code number and version of combination</b> |       |   |   |   |
| Distinctive number                            |       |   |   | 22D   |
| Can be combined with auxiliary contact module |       |   |   | DILA-XHIC(V)...   |
| Actuating voltage                             |       |   |   | 230 V 50/60 Hz  |
| Voltage AC/DC                                 |       |   |   | AC operation  |
| <b>Instructions</b>                           |       |   |   | Contact numbers to EN 50011<br>Coil terminal markings to EN 50005 |

**Technical data**

|  |              |               |           |                                 |
|--|--------------|---------------|-----------|---------------------------------|
| <b>General</b>   |              |               |           |                                 |
| Standards  |              |               |           | IEC/EN 60947, VDE 0660, UL, CSA |
| <b>Lifespan, mechanical</b>  |              |               |           |                                 |
| AC operated  | Operations   | $\times 10^6$ | 20        |                                 |
| DC operated  | Operations   | $\times 10^6$ | 20        |                                 |
| <b>Maximum operating frequency</b>   |              |               |           |                                 |
| Maximum operating frequency  | Operations/h |               | 9000      |                                 |
| <b>Climatic proofing</b>   |              |               |           |                                 |
| Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |              |               |           |                                 |
| <b>Ambient temperature</b>   |              |               |           |                                 |
| Open   |              | °C            | -25 - +60 |                                 |
| Enclosed   |              | °C            | - 25 - 40 |                                 |
| Ambient temperature, storage   |              | °C            | - 40 - 80 |                                 |
| <b>Mounting position</b>   |              |               |           |                                 |
| 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  |  |                 |                                      |
| 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 AC | 6000  |
| Overvoltage category/pollution degree  |           |      | III/3 |
| Rated insulation voltage   | $U_i$     | V AC | 690   |
| Rated operational voltage  | $U_e$     | V AC | 690   |
| Rated operational current  |           | A    |       |
| Conventional free air thermal current, 3 pole, 50 - 60 Hz  |           |      |       |
| Open   |           |      |       |
| Conv. thermal current  | $I_{th}$  | 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   |           |      |       |
| 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 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     |
| Conv. thermal current  | $I_{th}$  | A    | 16    |
| Safe isolation to EN 61140   |           |      |       |

|                                       |              |           |  |
|---------------------------------------|--------------|-----------|--|
| between coil and auxiliary contacts   |              | V AC      | 400  |
| between the auxiliary contacts        |              | V AC      | 400  |
| 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 $I_{th}$         |              |           |  |
| AC operated                           |              | W         | 0.3  |
| DC operated                           |              | W         | 0.3  |

## Magnet systems

|   |                      |         |            |
|---|----------------------|---------|------------|
| Voltage tolerance   |                      |         |            |
| 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   |                      | % DF    | 100        |
| Changeover time at 100 % $U_c$ (recommended value)            |                      |         |            |
| 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  
Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification

## 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  | 0.5  |
| Equipment heat dissipation, current-dependent            | $P_{vid}$  | W  | 0    |
| Static heat dissipation, non-current-dependent           | $P_{vs}$   | W  | 1.4  |
| Heat dissipation capacity                                | $P_{diss}$ | W  | 0    |
| Operating ambient temperature min.                       |            | °C | -25  |
| Operating ambient temperature max.                       |            | °C | 60   |
| IEC/EN 61439 design verification                         |            |    |      |

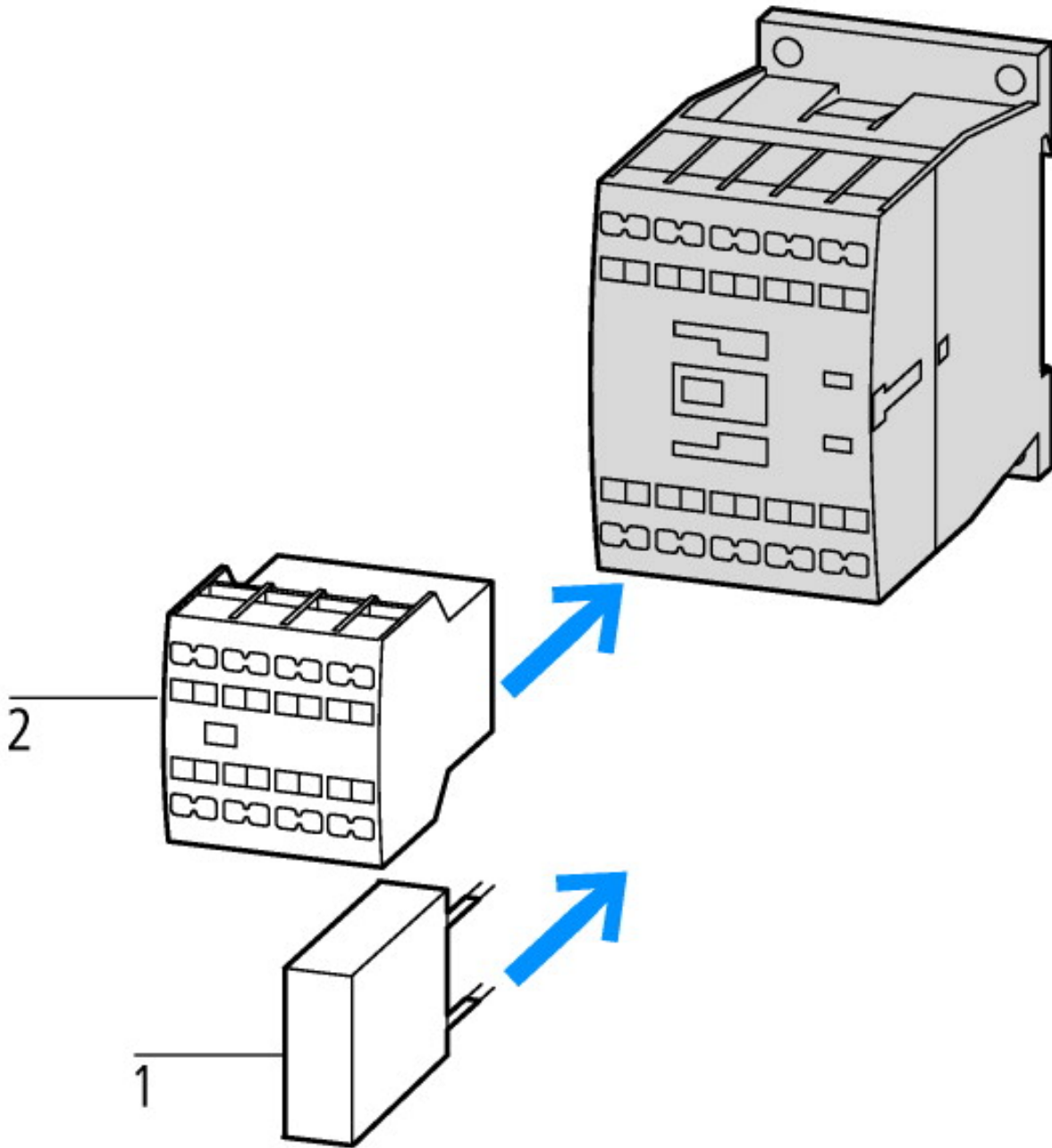
|  |  |  |  |
|--|--|--|--|
| 10.2 Strength of materials and parts   |  |  |  |
| 10.2.2 Corrosion resistance  |  |  | Meets the product standard's requirements.   |
| 10.2.3.1 Verification of thermal stability of enclosures   |  |  | Meets the product standard's requirements.   |
| 10.2.3.2 Verification 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 $U_s$ at AC 50HZ  | V |  | 230 - 230               |
| Rated control supply voltage $U_s$ at AC 60HZ  | V |  | 230 - 230               |
| Rated control supply voltage $U_s$ at DC   | V |  | 0 - 0                   |
| Voltage type for actuating   |   |  | AC                      |
| Rated operation current $I_e$ , 400 V  | A |  | 4                       |
| Connection type auxiliary circuit  |   |  | Spring clamp connection |
| Mounting method  |   |  | DIN-rail/screw          |
| Interface  |   |  | No                      |
| Number of auxiliary contacts as normally closed contact  |   |  | 2                       |
| Number of auxiliary contacts as normally open contact  |   |  | 2                       |
| 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

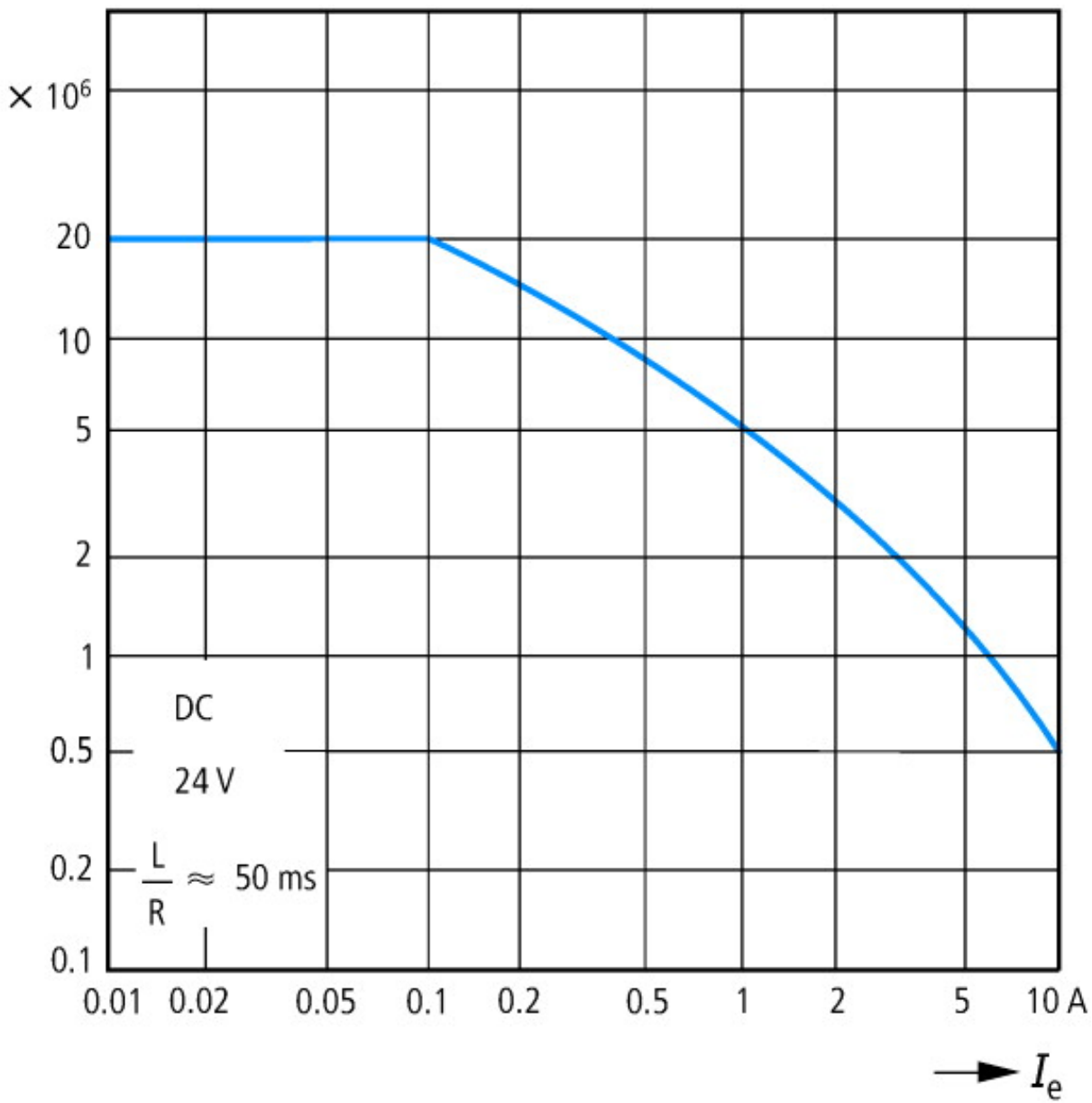
|                                      |  |  |   |
|--------------------------------------|--|--|---|
| Product Standards                    |  |  | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking |
| UL File No.                          |  |  | E29184  |
| UL Category Control No.              |  |  | 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

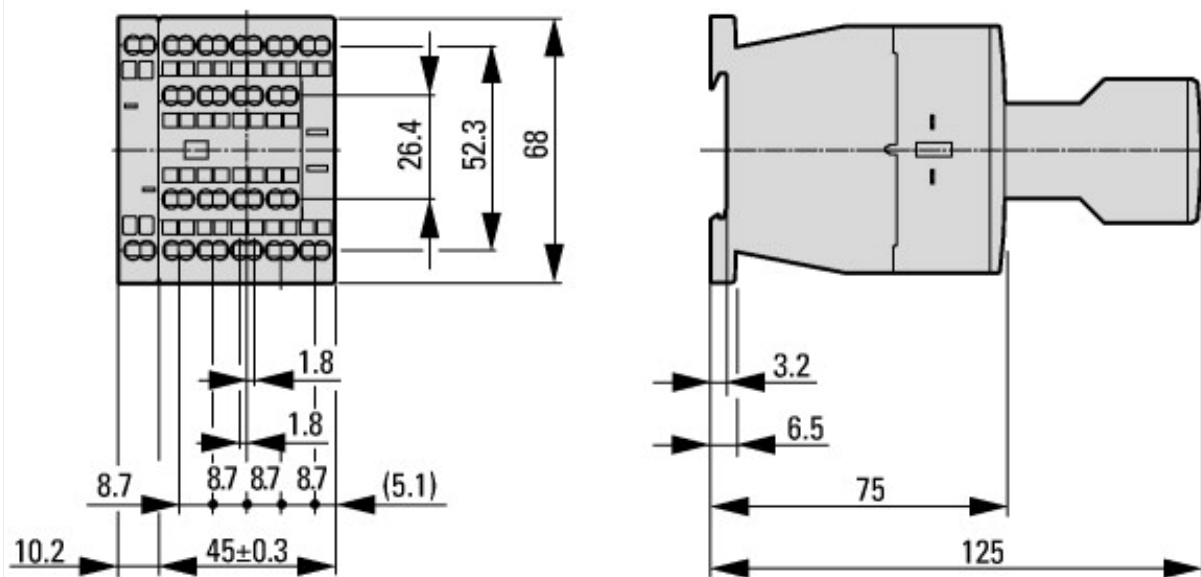


Component lifespan (operations)  
 $I_e$  = Rated operational current



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

## Dimensions



Contacteur with auxiliary contact module



### 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>