



Contactor relay, 3N/O+1N/C, AC

Part no. DILA-31(190V50HZ,220V60HZ)
Article no. 276362
Catalog No. XTRE10B31G

Delivery program


| | | | |
|---|-------|---|---|
| Product range | | | DILA relays |
| Application | | | Contactor relays |
| Description | | | Basic devices with positive operation contacts |
| Connection technique | | | Screw terminals |
| Rated operational current | | | |
| AC-15 | | | |
| 220 V 230 V 240 V | I_e | A | 4 |
| 380 V 400 V 415 V | I_e | A | 4 |
| Contacts | | | |
| N/O = Normally open | | | 3 N/O |
| N/C = Normally closed | | | 1 NC |
| Contact sequence | | | |
| Code number and version of combination | | | |
| Distinctive number | | | 31E |
| Can be combined with auxiliary contact module | | | DILA-XHI(V)... |
| Actuating voltage | | | 190 V 50 Hz, 220 V 60 Hz |
| Voltage AC/DC | | | AC operation |
| Instructions | | | |
| | | | Contact numbers to EN 50011 Coil terminal markings to EN 50005 |

Technical data

| | | | |
|--|--------------|---------------|--|
| General | | | |
| Standards | | | IEC/EN 60947, VDE 0660, UL, CSA |
| Lifespan, mechanical | | | |
| AC operated | Operations | $\times 10^6$ | 20 |
| DC operated | Operations | $\times 10^6$ | 20 |
| Maximum operating frequency | | Ops./h | |
| Maximum operating frequency | Operations/h | | 9000 |
| Climatic proofing | | | Damp heat, constant, to IEC 60068-2-78 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 | | | |
| 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 |

| | | | |
|---|--|-----------------|--------------------------------------|
| 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 ² | |
| Screw terminals | | | |
| Solid | | mm ² | 1 x (0,75 - 4) 2 x (0,75 - 2,5) |
| Flexible with ferrule | | mm ² | 1 x (0.75 - 2.5) 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 1 x 6 |
| Max. tightening torque | | Nm | 1.2 |
| Spring-loaded terminals | | | |
| Solid | | mm ² | 1 x (0.75 - 2.5) 2 x (0.75 - 2.5) |
| Flexible with or without ferrule DIN 46228 | | mm ² | 1 x (0,75 - 1.5) 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 | λ | $<10^{-8}$, < one failure at 100 million operations (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 25 |
| 50/60 Hz | Sealing | VA | 4.2 3.3 |
| 50/60 Hz | Sealing | W | 1.4 1.2 |
| DC operated | Pull-in = 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 | | | |

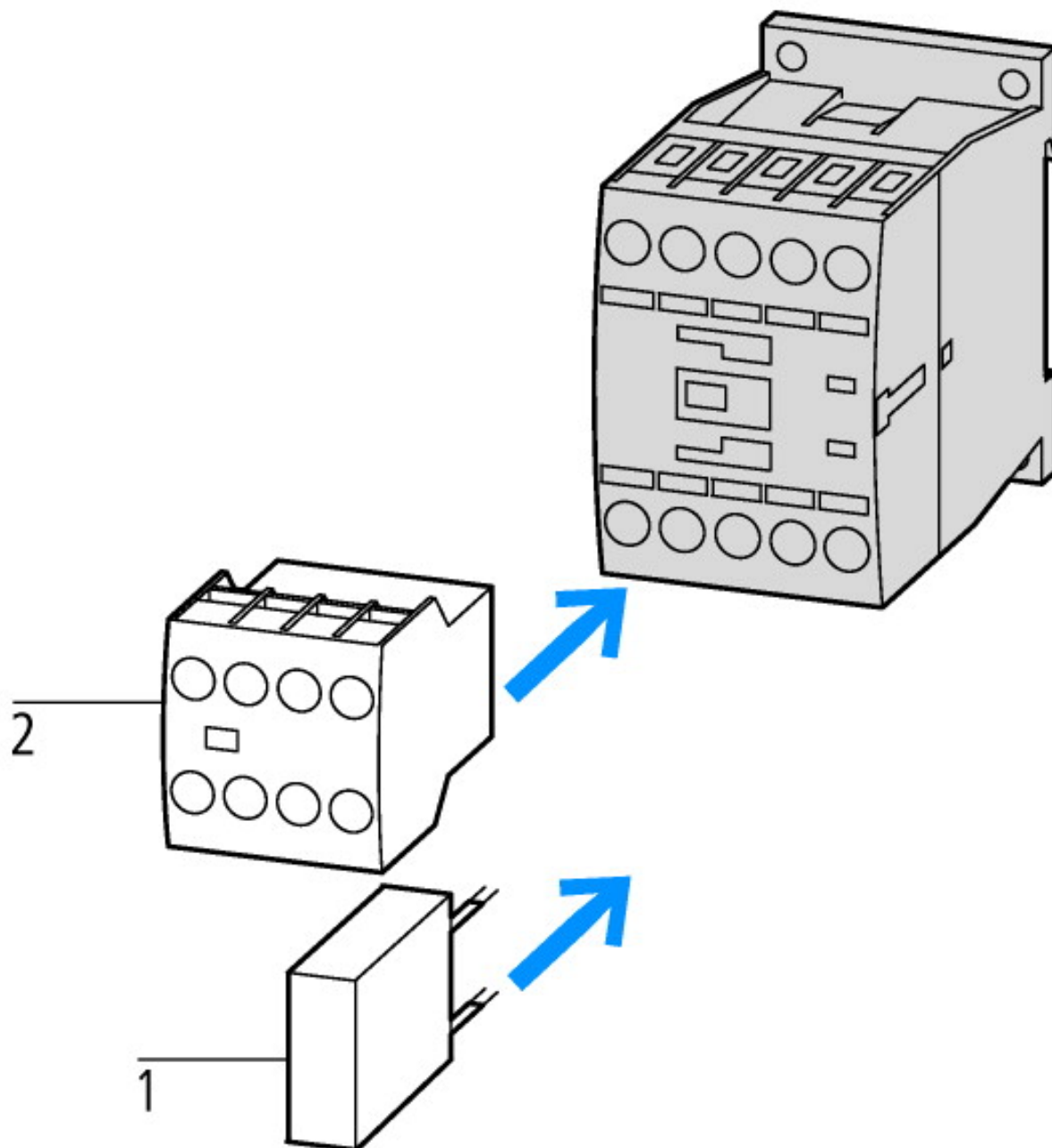
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|--|--|--|--|
| 10.2 Strength of materials and parts | | | |
| 10.2.2 Corrosion resistance | | | Meets the product standard's requirements. |
| 10.2.3.1 Verification of thermal stability of enclosures | | | Meets the product standard's requirements. |
| 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

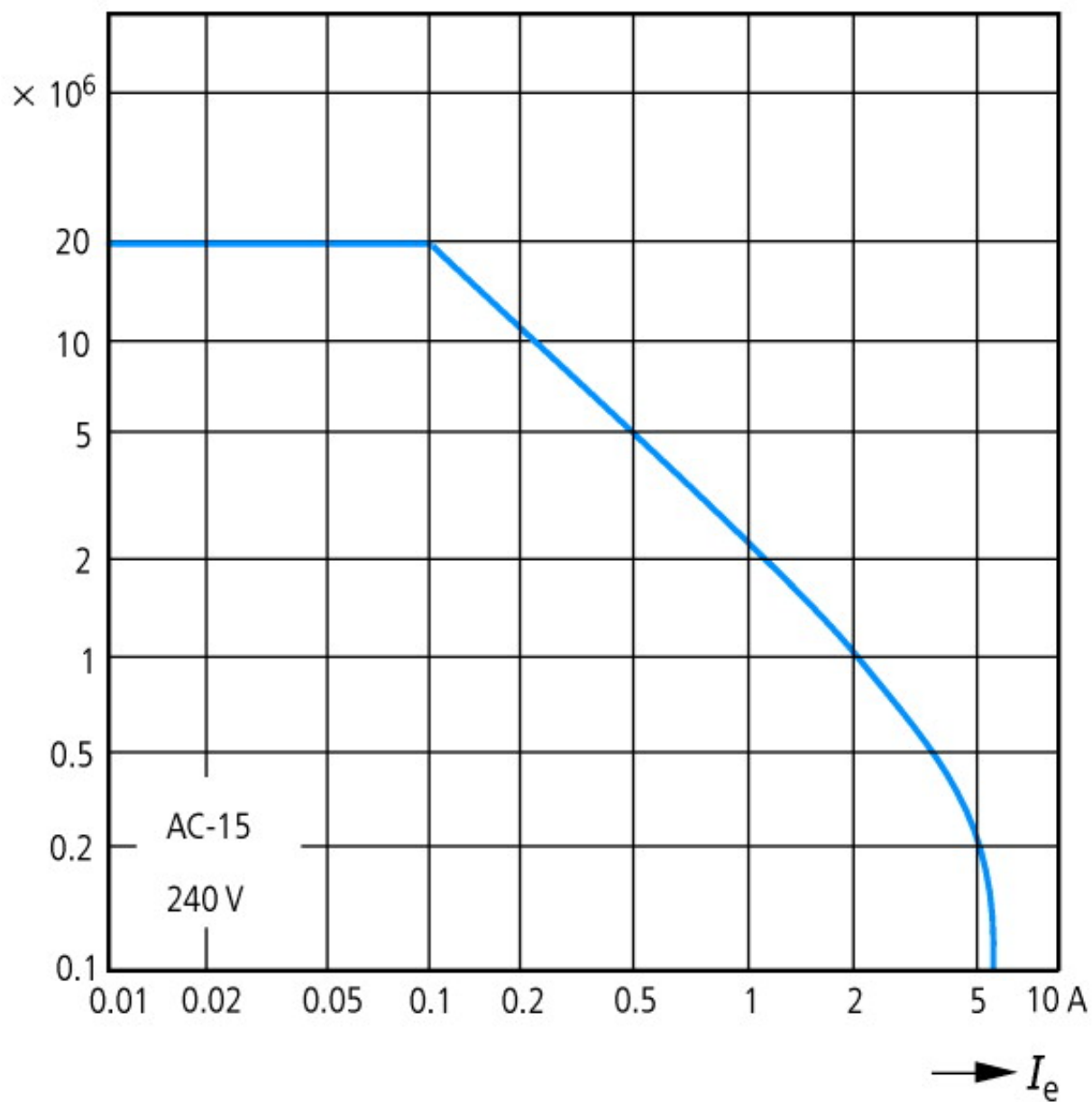
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|--|--|---|------------------|
| Low-voltage industrial components (EG000017) / Contactor relay (EC000196) | | | |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss8.1-27-37-10-01 [AAB716011]) | | | |
| Rated control supply voltage Us at AC 50HZ | | V | 190 - 190 |
| Rated control supply voltage Us at AC 60HZ | | V | 220 - 220 |
| Rated control supply voltage Us at DC | | V | 0 - 0 |
| Voltage type for actuating | | | AC |
| 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 | | | 1 |
| Number of auxiliary contacts as normally open contact | | | 3 |
| 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

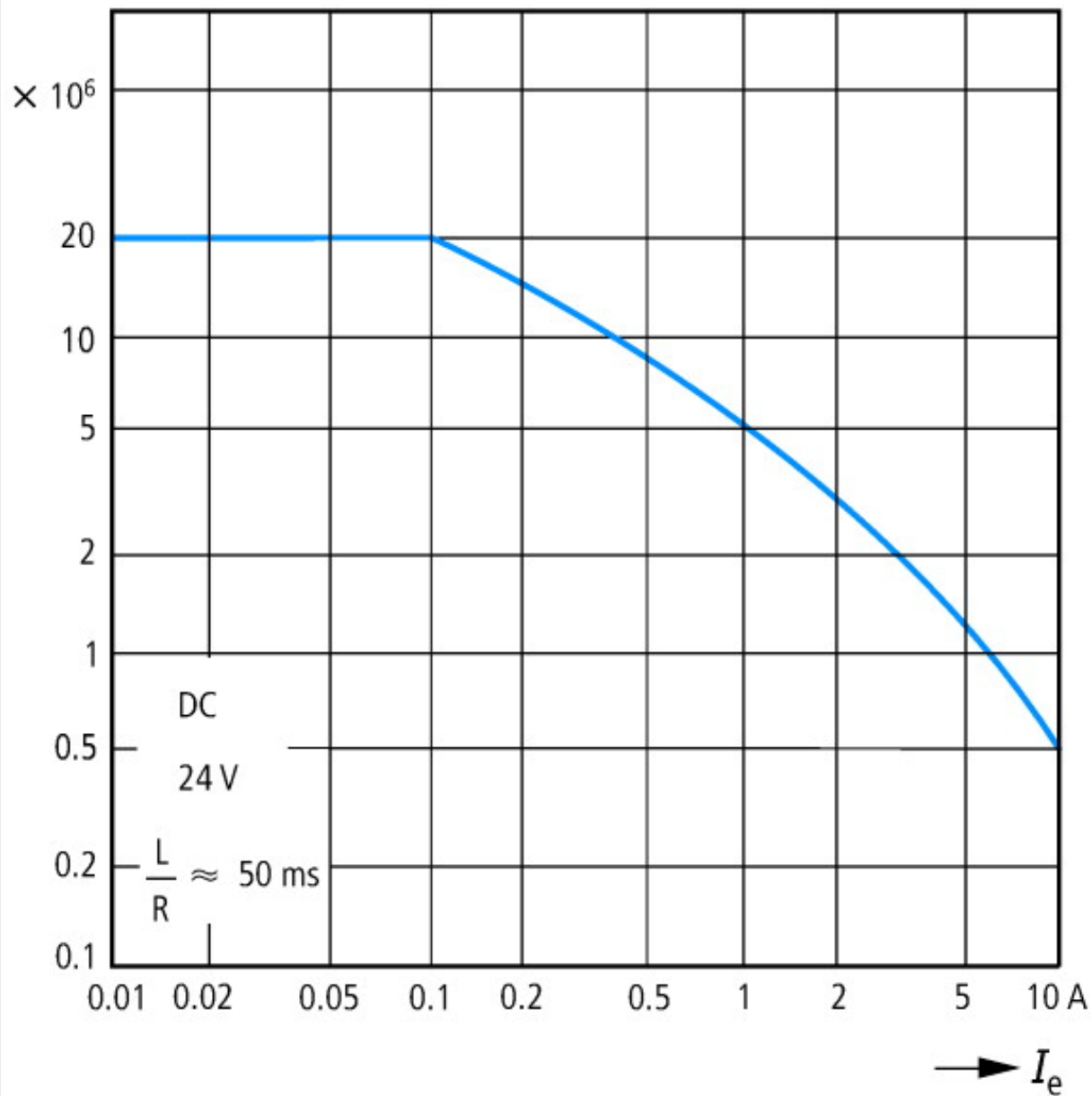
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|--------------------------------------|--|--|---|
| Product Standards | | | IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking |
| UL File No. | | | E29184 |
| UL Category Control No. | | | NKCR |
| CSA File No. | | | 012528 |
| CSA Class No.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



- 1: Suppressor
2: Auxiliary contact module

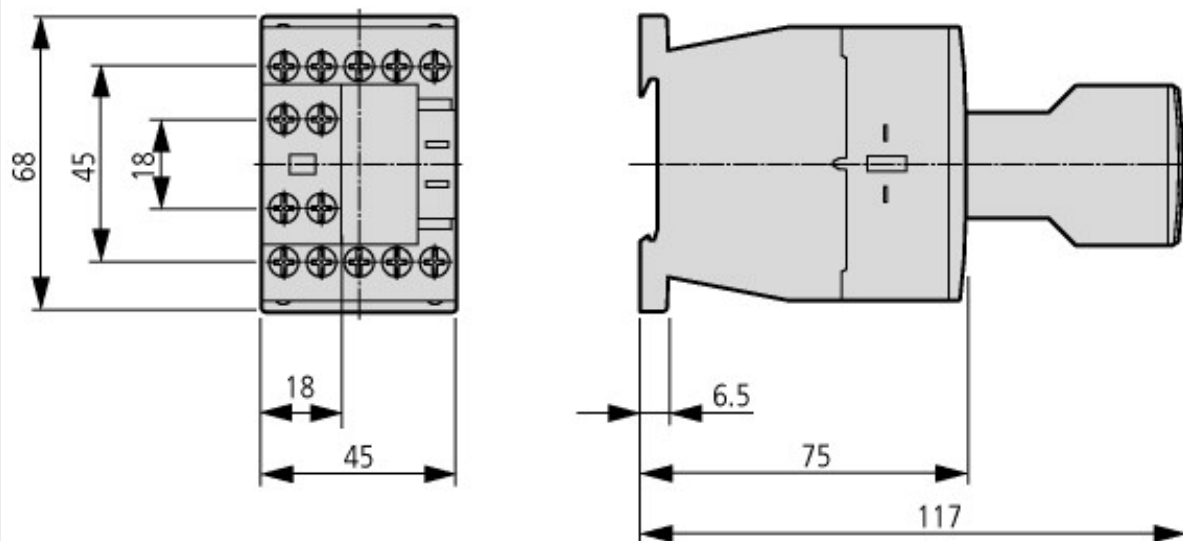


Component lifespan (operations)
 I_e = Rated operational current

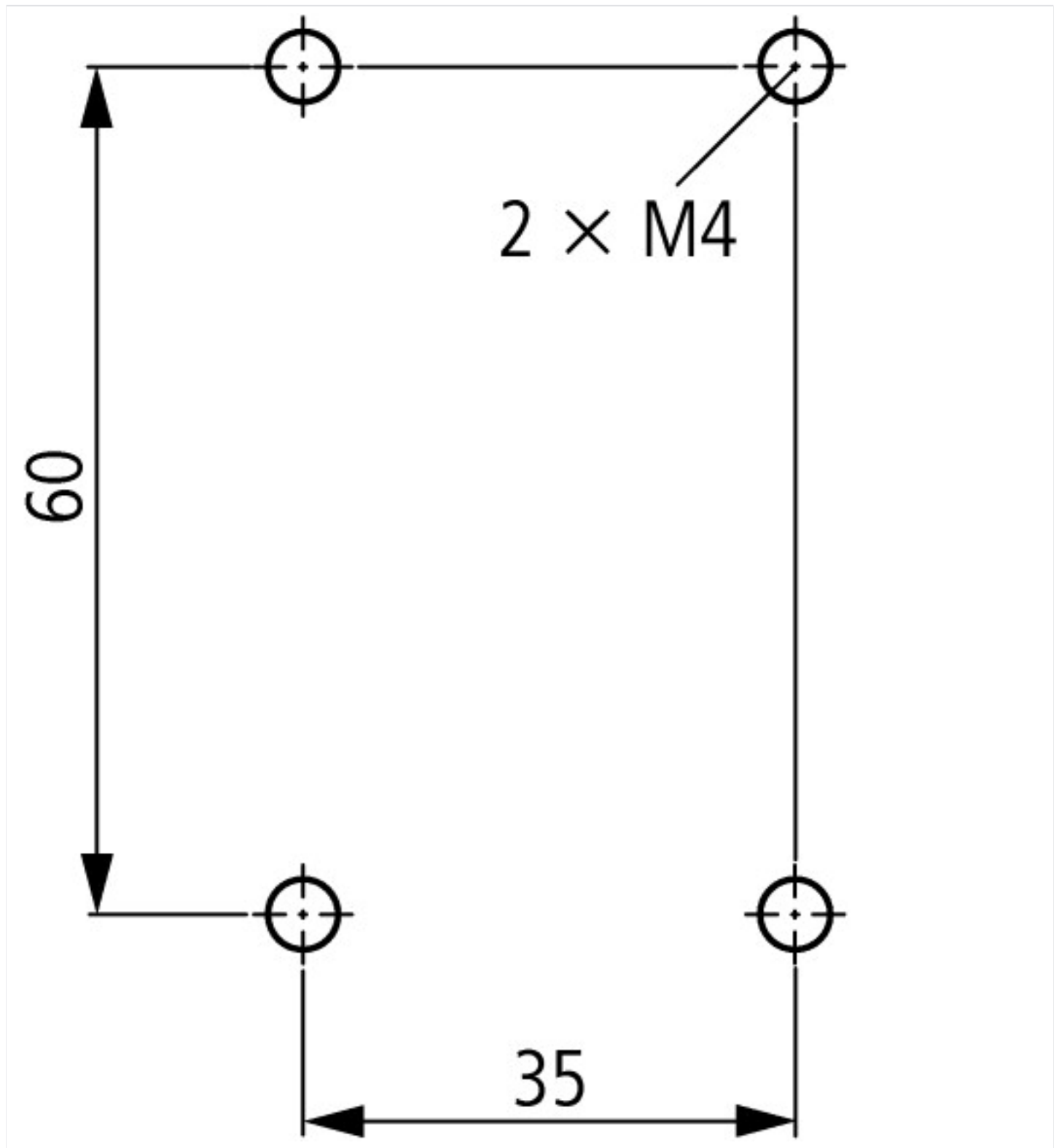


Component lifespan (operations)
 I_e = Rated operational current

Dimensions



Contactor 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

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