

Part no. **DILA-31(48VDC)**
276380

| General specifications | |
|--|--|
| Product name | Eaton Moeller® series DILA Control Relay |
| Part no. | DILA-31(48VDC) |
| EAN | 4015082763800 |
| Product Length/Depth | 75 millimetre |
| Product height | 68 millimetre |
| Product width | 45 millimetre |
| Product weight | 0.294 kilogram |
| Certifications | UL File No.: E29184 CSA File No.: 012528 UL Category Control No.: NKCR UL 508 CSA CSA Class No.: 3211-03 IEC/EN 60947 VDE 0660 CE IEC/EN 60947-4-1 EN 60947-5-1 UL CSA-C22.2 No. 14-05 |
| Product Tradename | DILA |
| Product Type | Control Relay |
| Product Sub Type | None |
| Catalog Notes | Coil terminal markings according to EN 50005 Contact numbers according to EN 50011 Rated operational current: Switch-on and switch-off conditions based on DC-13, time constant as specified. |
| Features & Functions | |
| Features | Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module |
| Fitted with: | Suppressor circuit Positive operation contacts Built-in suppressor circuit |
| General information | |
| Application | Contactor relays |
| Degree of protection | IP20 |
| Shock resistance | 7 g, N/O auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 5 g, N/C auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms |
| Lifespan, mechanical | 20,000,000 Operations (DC operated) |
| Mounting method | DIN-rail/screw |
| Operating frequency | 9000 Operations/h |
| Overvoltage category | III |
| Pollution degree | 3 |
| Product category | DILA relays |
| Protection | Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274) |
| Rated impulse withstand voltage (Uimp) | 6000 V AC |
| Voltage type | DC |
| Climatic environmental conditions | |
| Ambient operating temperature - min | -25 °C |
| Ambient operating temperature - max | 60 °C |
| Ambient operating temperature (enclosed) - min | 25 °C |
| Ambient operating temperature (enclosed) - max | 40 °C |
| Ambient storage temperature - min | 40 °C |

| | |
|---|---|
| Ambient storage temperature - max | 80 °C |
| Climatic proofing | Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78 |
| Terminal capacities | |
| Terminal capacity (flexible with ferrule) | 1 x (0.75 - 2.5) mm ² , Screw terminals 2 x (0.75 - 2.5) mm ² , Screw terminals |
| Terminal capacity (solid) | 1 x (0.75 - 4) mm ² , Screw terminals 2 x (0.75 - 2.5) mm ² , Screw terminals |
| Terminal capacity (solid/stranded AWG) | 18 - 14, Screw terminals |
| Stripping length (main cable) | 10 mm |
| Screw size | M3.5, Terminal screw |
| Screwdriver size | 2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver |
| Tightening torque | 1.2 Nm, Screw terminals |
| Electrical rating | |
| Conventional thermal current I_{th} at 60°C (3-pole, open) | 16 A |
| Rated operational current (I_e) | 5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series) 1 A at 220 V, DC L/R ≤ 50 ms (with 3 contacts in series) 1 A at 220 V, DC L/R ≤ 15 ms (with 1 contact in series) 3 A at 110 V, DC L/R ≤ 15 ms (with 1 contact in series) 4 A at 24 V, DC L/R ≤ 50 ms (with 3 contacts in series) 10 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series) 2 A at 110 V, DC L/R ≤ 50 ms (with 3 contacts in series) 6 A at 110 V, DC L/R ≤ 15 ms (with 3 contacts in series) 4 A at 60 V, DC L/R ≤ 50 ms (with 3 contacts in series) 6 A at 60 V, DC L/R ≤ 15 ms (with 1 contact in series) 10 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series) 16 A |
| Rated operational current (I_e) at AC-15, 220 V, 230 V, 240 V | 4 A |
| Rated operational current (I_e) at AC-15, 380 V, 400 V, 415 V | 4 A |
| Rated operational current (I_e) at AC-15, 500 V | 1.5 A |
| Rated insulation voltage (U_i) | 690 V |
| Rated operational voltage (U_e) at AC - max | 690 V |
| Short-circuit protection rating without welding | 10 A gG/gL, 500 V, Max. Fuse, Contacts |
| Safe isolation | 400 V AC, Between coil and auxiliary contacts, According to EN 61140 400 V AC, Between auxiliary contacts, According to EN 61140 |
| Switching capacity (auxiliary contacts, general use) | 1 A, 250 V DC, (UL/CSA) 15 A, 600 V AC, (UL/CSA) |
| Switching capacity (auxiliary contacts, pilot duty) | P300, DC operated (UL/CSA) A600, AC operated (UL/CSA) |
| Magnet system | |
| Duty factor | 100 % |
| Pick-up voltage | 0.8 - 1.1 V DC x U_c 0.7 - 1.3 V DC x U_c (at 24 V: without auxiliary contact module and at ambient air temperature + 40 °C) |
| Power consumption (pick-up) at DC | 2.6 W |
| Power consumption (sealing) at DC | 2.6 W |
| Rated control supply voltage (U_s) at AC, 50 Hz - min | 0 V |
| Rated control supply voltage (U_s) at AC, 50 Hz - max | 0 V |
| Rated control supply voltage (U_s) at AC, 60 Hz - min | 0 V |
| Rated control supply voltage (U_s) at AC, 60 Hz - max | 0 V |
| Rated control supply voltage (U_s) at DC - min | 48 V |
| Rated control supply voltage (U_s) at DC - max | 48 V |
| Switching time (DC operated, make contacts, closing delay) - max | 31 ms |
| Switching time (DC operated, make contacts, opening delay) - max | 12 ms |
| Voltage tolerance | Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification |
| Communication | |
| Connection to SmartWire-DT | No |
| Contacts | |
| Code number | 31E |
| Control circuit reliability | $\lambda < 5 \times 10^{-7}$ (1 failure at 2,000,000 operations for $U_{\#} = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA) |
| Number of auxiliary contacts (change-over contacts) | 0 |

| | | |
|--|--|--|
| Number of contacts (normally closed contacts) | | 1 |
| Number of contacts (normally open contacts) | | 3 |
| Number of auxiliary contacts (normally closed contacts) | | 1 |
| Number of auxiliary contacts (normally open contacts) | | 3 |
| Design verification | | |
| Equipment heat dissipation, current-dependent P _{vid} | | 0 W |
| Heat dissipation capacity P _{diss} | | 0 W |
| Heat dissipation per pole, current-dependent P _{vid} | | 1 W |
| Rated operational current for specified heat dissipation (I _n) | | 15.5 A |
| Static heat dissipation, non-current-dependent P _{vs} | | 3 W |
| 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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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. |
| 10.9.2 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 9.0

| | | |
|---|---|----------------|
| Low-voltage industrial components (EG000017) / Contactor relay (EC000196) | | |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss13-27-37-10-01 [AAB716019]) | | |
| Rated control supply voltage AC 50 Hz | V | 0 - 0 |
| Rated control supply voltage AC 60 Hz | V | 0 - 0 |
| Rated control supply voltage DC | V | 48 - 48 |
| Voltage type for actuating | | DC |
| Rated operation current | A | 16 |
| Rated operation current I _e , 400 V | A | 4 |
| Mounting method | | DIN-rail/screw |
| With LED indication | | No |
| Suitable for manual operation | | No |
| 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 |
| Number of auxiliary contacts as change-over contact | | 0 |
| Operating voltage AC 50 Hz | V | 17 - 500 |
| Operating voltage AC 60 Hz | V | 17 - 500 |
| Operating voltage DC | V | 24 - 220 |

| | | |
|-----------------------------------|----|------------------|
| Voltage type (operating voltage) | | AC/DC |
| Rated switch current | A | 16 |
| Connection type auxiliary circuit | | Screw connection |
| Width | mm | 45 |
| Height | mm | 68 |
| Depth | mm | 75 |