

Contactor relay, 24 V 50 Hz, 3 N/O, 1 NC, Screw terminals, AC operation

**Part no.** DILA-31(24V50HZ)  
276351

**EL Number  
(Norway)** 4130204

| General specifications                 |  |  |
|--|--|--|
| Product name                           |  | Eaton Moeller® series DILA Control Relay   |
| Part no.                               |  | DILA-31(24V50HZ)   |
| EAN                                    |  | 4015082763510  |
| Product Length/Depth                   |  | 75 millimetre  |
| Product height                         |  | 68 millimetre  |
| Product width                          |  | 45 millimetre  |
| Product weight                         |  | 0.24 kilogram  |
| Compliances                            |  | CE Marked  |
| Certifications                         |  | CSA Std. C22.2 No. 14-05<br>IEC 60947-4-1<br>UL 508<br>EN 60947-4-1<br>VDE<br>CSA-C22.2 No. 14-05<br>UL<br>CSA File No.: 012528<br>EN 60947-5-1<br>CSA<br>CSA Class No.: 3211-03<br>UL Category Control No.: NKCR<br>VDE 0660<br>IEC/EN 60947-4-1<br>UL File No.: E29184<br>CE<br>IEC/EN 60947 |
| Product Tradename                      |  | DILA   |
| Product Type                           |  | Control Relay  |
| Product Sub Type                       |  | None   |
| Catalog Notes                          |  | Coil terminal markings according to EN 50005<br>Contact numbers according to EN 50011<br>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:                           |  | Positive operation contacts  |
| 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<br>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 (AC operated)  |
| Mounting method                        |  | 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                           |  | AC   |
| Climatic environmental conditions      |  |  |
| Ambient operating temperature - min    |  | -25 °C   |
| Ambient operating temperature - max    |  | 60 °C  |

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|---|--|---|
| 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<br>Damp heat, constant, to IEC 60068-2-78  |
| <b>Terminal capacities</b>  |  |   |
| Terminal capacity (flexible with ferrule)                                 |  | 2 x (0.75 - 2.5) mm <sup>2</sup> , Screw terminals<br>1 x (0.75 - 2.5) mm <sup>2</sup> , Screw terminals  |
| Terminal capacity (solid)   |  | 1 x (0.75 - 4) mm <sup>2</sup> , Screw terminals<br>2 x (0.75 - 2.5) mm <sup>2</sup> , 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  |  | 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver<br>2, Terminal screw, Pozidriv screwdriver   |
| Tightening torque   |  | 1.2 Nm, Screw terminals   |
| <b>Electrical rating</b>  |  |   |
| Conventional thermal current I <sub>th</sub> at 60°C (3-pole, open)       |  | 16 A  |
| Rated operational current (I <sub>e</sub> )                               |  | 6 A at 60 V, DC L/R ≤ 15 ms (with 1 contact in series)<br>6 A at 110 V, DC L/R ≤ 15 ms (with 3 contacts in series)<br>5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series)<br>10 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series)<br>2 A at 110 V, DC L/R ≤ 50 ms (with 3 contacts in series)<br>10 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series)<br>4 A at 60 V, DC L/R ≤ 50 ms (with 3 contacts in series)<br>3 A at 110 V, DC L/R ≤ 15 ms (with 1 contact in series)<br>1 A at 220 V, DC L/R ≤ 15 ms (with 1 contact in series)<br>4 A at 24 V, DC L/R ≤ 50 ms (with 3 contacts in series)<br>1 A at 220 V, DC L/R ≤ 50 ms (with 3 contacts in series)<br>16 A |
| Rated operational current (I <sub>e</sub> ) at AC-15, 220 V, 230 V, 240 V |  | 4 A   |
| Rated operational current (I <sub>e</sub> ) at AC-15, 380 V, 400 V, 415 V |  | 4 A   |
| Rated operational current (I <sub>e</sub> ) at AC-15, 500 V               |  | 1.5 A   |
| Rated insulation voltage (U <sub>i</sub> )                                |  | 690 V   |
| Rated operational voltage (U <sub>e</sub> ) 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 auxiliary contacts, According to EN 61140<br>400 V AC, Between coil and auxiliary contacts, According to EN 61140   |
| Switching capacity (auxiliary contacts, general use)                      |  | 1 A, 250 V DC, (UL/CSA)<br>15 A, 600 V AC, (UL/CSA)   |
| Switching capacity (auxiliary contacts, pilot duty)                       |  | A600, AC operated (UL/CSA)<br>P300, DC operated (UL/CSA)  |
| <b>Magnet system</b>  |  |   |
| Duty factor   |  | 100 %   |
| Pick-up voltage   |  | 0.8 - 1.1 V AC x U <sub>c</sub> (voltage tolerance - single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz)  |
| Power consumption, pick-up, 50 Hz   |  | 24 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz   |
| Power consumption, pick-up, 60 Hz   |  | 24 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz   |
| Power consumption, sealing, 50 Hz   |  | 1.4 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz<br>3.4 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz   |
| Power consumption, sealing, 60 Hz   |  | 1.4 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz   |
| Rated control supply voltage (U <sub>s</sub> ) at AC, 50 Hz - min         |  | 24 V  |
| Rated control supply voltage (U <sub>s</sub> ) at AC, 50 Hz - max         |  | 24 V  |
| Rated control supply voltage (U <sub>s</sub> ) at AC, 60 Hz - min         |  | 0 V   |
| Rated control supply voltage (U <sub>s</sub> ) at AC, 60 Hz - max         |  | 0 V   |
| Rated control supply voltage (U <sub>s</sub> ) at DC - min                |  | 0 V   |
| Rated control supply voltage (U <sub>s</sub> ) at DC - max                |  | 0 V   |
| Switching time (AC operated, make contacts, closing delay) - min          |  | 15 ms   |
| Switching time (AC operated, make contacts, closing delay) - max          |  | 21 ms   |
| Switching time (AC operated, make contacts, opening delay) - min          |  | 9 ms  |
| Switching time (AC operated, make contacts, opening delay) - max          |  | 18 ms   |
| <b>Communication</b>  |  |   |

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| Connection   |  | Screw terminals  |
| Connection to SmartWire-DT   |  | No   |
| <b>Contacts</b>  |  |  |
| Code number  |  | 31E  |
| Control circuit reliability  |  | < 2 λ, < 1 failure at 100,000,000 Operations (at U# = 24 V DC, Umin = 17 V, Imin = 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  |
| <b>Design verification</b>   |  |  |
| Equipment heat dissipation, current-dependent Pvid                               |  | 0 W  |
| Heat dissipation capacity Pdis   |  | 0 W  |
| Heat dissipation per pole, current-dependent Pvid                                |  | 0.5 W  |
| Rated operational current for specified heat dissipation (In)                    |  | 15.5 A   |
| Static heat dissipation, non-current-dependent Pvs                               |  | 1.4 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 8.0

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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@ss10.0.1-27-37-10-01 [AAB716014]) |   |                  |
| Rated control supply voltage Us at AC 50HZ  | V | 24 - 24          |
| Rated control supply voltage Us at AC 60HZ  | V | 0 - 0            |
| 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   |   | 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                |

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|--|--|--|----|
| Number of auxiliary contacts as normally open contact, leading |  |  | 0  |
| Number of auxiliary contacts as change-over contact            |  |  | 0  |
| With LED indication  |  |  | No |
| Suitable for manual operation                                  |  |  | No |