

**Contactor relay, 110 V 50 Hz, 120 V 60 Hz, 3 N/O, 1 NC, Spring-loaded terminals, AC operation**



**Part no. DILAC-31(110V50HZ,120V60HZ)**

**276470**

**EL Number  
(Norway) 4110164**

Product name	Eaton Moeller® series DILA Control Relay
Part no.	DILAC-31(110V50HZ,120V60HZ)
EAN	4015082764708
Product Length/Depth	75 millimetre
Product height	68 millimetre
Product width	45 millimetre
Product weight	0.225 kilogram
Certifications	UL File No.: E29184 CSA-C22.2 No. 14-05 CSA File No.: 012528 UL 508 CSA Class No.: 3211-03 CSA IEC/EN 60947-4-1 VDE 0660 UL CE EN 60947-5-1 IEC/EN 60947 UL Category Control No.: NKCR
Product Tradename	DILA
Product Type	Control Relay
Product Sub Type	None
Catalog Notes	This item can only be ordered until December 31, 2023 with a maximum delivery date of May 31, 2024.
Features	Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module
Fitted with:	Positive operation contacts
Application	Contactor relays
Degree of protection	IP20
Shock resistance	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 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
Lifespan, mechanical	20,000,000 Operations (AC 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	AC
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 capacity (flexible with ferrule)		2 x (0.75 - 1.5) mm <sup>2</sup> , Spring-loaded terminals with or without ferrule DIN 46228 1 x (0.75 - 1.5) mm <sup>2</sup> , Spring-loaded terminals with or without ferrule DIN 46228
Terminal capacity (solid)		1 x (0.75 - 2.5) mm <sup>2</sup> , Spring-loaded terminals 2 x (0.75 - 2.5) mm <sup>2</sup> , Spring-loaded terminals
Terminal capacity (solid/stranded AWG)		18 - 14, Spring-loaded terminals
Stripping length (main cable)		10 mm
Screwdriver size		0.6 x 3.5 mm, Spring-loaded terminals
Conventional thermal current $I_{th}$ at 60°C (3-pole, open)		16 A
Rated operational current ( $I_e$ )		3 A at 110 V, DC L/R ≤ 15 ms (with 1 contact in series) 1 A at 220 V, DC L/R ≤ 15 ms (with 1 contact in series) 10 A at 24 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) 5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series) 2 A at 110 V, DC L/R ≤ 50 ms (with 3 contacts in series) 4 A at 60 V, DC L/R ≤ 50 ms (with 3 contacts in series) 4 A at 24 V, DC L/R ≤ 50 ms (with 3 contacts in series) 1 A at 220 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) 6 A at 60 V, DC L/R ≤ 15 ms (with 1 contact in series)
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 auxiliary contacts, According to EN 61140 400 V AC, Between coil and auxiliary contacts, According to EN 61140
Switching capacity (auxiliary contacts, general use)		15 A, 600 V AC, (UL/CSA) 1 A, 250 V DC, (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)		A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
Duty factor		100 %
Pick-up voltage		0.8 - 1.1 V AC x $U_c$ (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 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 ( $U_s$ ) at AC, 50 Hz - min		110 V
Rated control supply voltage ( $U_s$ ) at AC, 50 Hz - max		110 V
Rated control supply voltage ( $U_s$ ) at AC, 60 Hz - min		120 V
Rated control supply voltage ( $U_s$ ) at AC, 60 Hz - max		120 V
Rated control supply voltage ( $U_s$ ) at DC - min		0 V
Rated control supply voltage ( $U_s$ ) 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
Connection to SmartWire-DT		No
Code number		31E
Control circuit reliability		< 2 λ, < 1 failure at 100,000,000 Operations (at $U_s = 24$ 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
Equipment heat dissipation, current-dependent P <sub>vid</sub>		0 W
Heat dissipation capacity P <sub>diss</sub>		0 W
Heat dissipation per pole, current-dependent P <sub>vid</sub>		0.5 W
Rated operational current for specified heat dissipation (I <sub>n</sub> )		15.5 A
Static heat dissipation, non-current-dependent P <sub>vs</sub>		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

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 U <sub>s</sub> at AC 50HZ	V	110 - 110
Rated control supply voltage U <sub>s</sub> at AC 60HZ	V	120 - 120
Rated control supply voltage U <sub>s</sub> at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current I <sub>e</sub> , 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		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
With LED indication		No
Suitable for manual operation		No