



Contactor relay, 24 V 50/60 Hz, 3 N/O, 1 NC, Screw terminals, AC operation



Part no. DILA-31(24V50/60HZ)
276368

General specifications		
Product name		Eaton Moeller® series DILA Control relay
Part no.		DILA-31(24V50/60HZ)
EAN		4015082763688
Product Length/Depth		75 millimetre
Product height		68 millimetre
Product width		45 millimetre
Product weight		0.24 kilogram
Certifications		CSA File No.: 012528 UL File No.: E29184 CSA Class No.: 3211-03 EN 60947-5-1 CSA-C22.2 No. 14-05 UL 508 CSA UL Category Control No.: NKCR CE UL IEC/EN 60947 IEC/EN 60947-4-1 VDE 0660
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:		Positive operation contacts
General information		
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)		8000 V AC
Voltage type		AC
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)			2 x (0.75 - 2.5) mm ² , Screw terminals 1 x (0.75 - 2.5) mm ² , Screw terminals
Terminal capacity (solid)			2 x (0.75 - 2.5) mm ² , Screw terminals 1 x (0.75 - 4) 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			0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv 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)			1 A at 220 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) 1 A at 220 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) 6 A at 60 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 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) 3 A at 110 V, DC L/R ≤ 15 ms (with 1 contact in series) 4 A at 60 V, DC L/R ≤ 50 ms (with 3 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 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)
Magnet system			
Duty factor			100 %
Pick-up voltage			0.8 - 1.1 V AC x U_c (voltage tolerance - dual frequency coil 50/60 Hz)
Power consumption, pick-up, 60 Hz			27 VA, AC, Dual-frequency coil at 60 Hz 25 VA, AC, Dual-frequency coil at 60 Hz
Power consumption, sealing, 50 Hz			4.2 VA, Dual-frequency coil in a cold state and 1.0 x U_s 1.4 W, Dual-frequency coil in a cold state and 1.0 x U_s 3.3 VA, Dual-frequency coil in a cold state and 1.0 x U_s
Power consumption, sealing, 60 Hz			4.2 VA, Dual-frequency coil in a cold state and 1.0 x U_s 3.3 VA, Dual-frequency coil in a cold state and 1.0 x U_s 1.4 W, Dual-frequency coil in a cold state and 1.0 x U_s
Rated control supply voltage (U_s) at AC, 50 Hz - min			24 V
Rated control supply voltage (U_s) at AC, 50 Hz - max			24 V
Rated control supply voltage (U_s) at AC, 60 Hz - min			24 V
Rated control supply voltage (U_s) at AC, 60 Hz - max			24 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
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}			0.5 W
Rated operational current for specified heat dissipation (I_n)			15.5 A
Static heat dissipation, non-current-dependent P_{vs}			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 9.0

Low-voltage industrial components (EG000017) / Contactor relay (EC000196)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecI@ss13-27-37-10-01 [AAB716019])			
Rated control supply voltage AC 50 Hz		V	24 - 24
Rated control supply voltage AC 60 Hz		V	24 - 24
Rated control supply voltage DC		V	0 - 0
Voltage type for actuating			AC
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