DATASHEET - DILA-31(24V50/60HZ)

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

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Powering Business Worldwide™

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) mm², Screw terminals 1 x (0.75 - 2.5) mm², Screw terminals
Terminal capacity (solid)		2 x (0.75 - 2.5) mm², Screw terminals 1 x (0.75 - 4) mm², 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 ith at 60°C (3-pole, open)		16 A
Rated operational current (Ie)		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 (Ie) at AC-15, 220 V, 230 V, 240 V		4 A
Rated operational current (Ie) at AC-15, 380 V, 400 V, 415 V		4 A
Rated operational current (Ie) at AC-15, 500 V		1.5 A
Rated insulation voltage (Ui)		690 V
Rated operational voltage (Ue) 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 Uc (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 Us 1.4 W, Dual-frequency coil in a cold state and 1.0 x Us 3.3 VA, Dual-frequency coil in a cold state and 1.0 x Us
Power consumption, sealing, 60 Hz		4.2 VA, Dual-frequency coil in a cold state and 1.0 x Us 3.3 VA, Dual-frequency coil in a cold state and 1.0 x Us 1.4 W, Dual-frequency coil in a cold state and 1.0 x Us
Rated control supply voltage (Us) at AC, 50 Hz - min		24 V
Rated control supply voltage (Us) at AC, 50 Hz - max		24 V
Rated control supply voltage (Us) at AC, 60 Hz - min		24 V
Rated control supply voltage (Us) at AC, 60 Hz - max		24 V
Rated control supply voltage (Us) at DC - min		0 V
Rated control supply voltage (Us) 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		< 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

Design verification

	Equipment heat dissipation, current-dependent Pvid		0 W
	Heat dissipation capacity Pdiss		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

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	24 - 24
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
Number of auxiliary contacts as change-over contact			0
With LED indication			No
Suitable for manual operation			No