DATASHEET - DILA-31(24VDC)

Contactor relay, 24 V DC, 3 N/O, 1 NC, Screw terminals, DC operation

Part no.	**DILA-31(24VDC)**
	276379
EL Number (Norway)	**4130206**

General specifications

Product name	Eaton Moeller® series DILA Control Relay
Part no.	DILA-31(24VDC)
EAN	4015082763794
Product Length/Depth	75 millimetre
Product height	68 millimetre
Product width	45 millimetre
Product weight	0.296 kilogram
Certifications	EN 60947-5-1 CSA-C22.2 No. 14-05 IEC/EN 60947 UL 508 CSA Class No.: 3211-03 VDE 0660 CE UL File No.: E29184 CSA File No.: 012528 UL CSA UL Category Control No.: NKCR IEC/EN 60947-4-1
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:	Built-in suppressor circuit Positive operation contacts 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)		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)		10 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series) 5 A at 220 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) 1 A at 220 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) 2 A at 110 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) 10 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts 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) 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)		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 Uc 0.7 - 1.3 V DC x Uc (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 (Us) at AC, 50 Hz - min		0 V
Rated control supply voltage (Us) at AC, 50 Hz - max		0 V
Rated control supply voltage (Us) at AC, 60 Hz - min		0 V
Rated control supply voltage (Us) at AC, 60 Hz - max		0 V
Rated control supply voltage (Us) at DC - min		24 V
Rated control supply voltage (Us) at DC - max		24 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		In conjunction with DIL-SWD SmartWire DT contactor module Yes

Contacts

Code number		31E

Control circuit reliability		λ < 5 x 10-7 (1 failure at 2,000,000 operations for 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		1 W
Rated operational current for specified heat dissipation (In)		15.5 A
Static heat dissipation, non-current-dependent Pvs		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	24 - 24
Voltage type for actuating		DC
Rated operation current	A	16
Rated operation current Ie, 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