



**Contactor relay, 110 V 50 Hz, 120 V 60 Hz, N/O = Normally open: 3 N/O, N/C
= Normally closed: 1 NC, Screw terminals, AC operation**

Part no. DILER-31(110V50HZ,120V60HZ)
051765
EL Number 4110182
(Norway)

General specifications		
Product name		Eaton Moeller® series DILER Control relay
Part no.		DILER-31(110V50HZ,120V60HZ)
EAN		4015080517658
Product Length/Depth		52 millimetre
Product height		58 millimetre
Product width		45 millimetre
Product weight		0.17 kilogram
Certifications		CE UL IEC/EN 60947 UL 508 CSA-C22.2 No. 14-05 VDE 0660 UL File No.: E29184 UL Category Control No.: NKCR CSA Class No.: 3211-03 IEC/EN 60947-4-1 CSA CSA File No.: 012528 EN 60947-5-1
Product Tradename		DILER
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:		Interlocked opposing contacts
General information		
Application		Contactor relays
Degree of protection		IP20
Lifespan, mechanical		10,000,000 Operations (AC operated)
Mounting method		DIN-rail/screw
Mounting position		As required (except vertical with terminals A1/A2 at the bottom)
Operating frequency		9000 Operations/h
Overvoltage category		III
Pollution degree		3
Product category		DILER Mini-contactors
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
Shock resistance		10 g, N/O auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 8 g, N/C auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
Voltage type		AC
Climatic environmental conditions		
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		50 °C
Ambient operating temperature (enclosed) - min		25 °C
Ambient operating temperature (enclosed) - max		40 °C

Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Terminal capacities			
Terminal capacity (flexible with ferrule)			2 x (0.75 - 1.5) mm ² 1 x (0.75 - 1.5) mm ²
Terminal capacity (solid)			1 x (0.75 - 2.5) mm ² 2 x (0.75 - 2.5) mm ²
Terminal capacity (solid/stranded AWG)			1 x (18 - 14) 18 - 14 2 x (18 - 14)
Stripping length (main cable)			8 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
Electrical rating			
Rated operational voltage (Ue) at AC - max			600 V
Rated insulation voltage (Ui)			690 V
Rated operational current (Ie)			2.5 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series) 1.5 A at 110 V, DC L/R ≤ 15 ms (with 3 contacts in series) 0.5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series) 2.5 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series) 10 A
Rated operational current (Ie) at AC-15, 220 V, 230 V, 240 V			6 A
Rated operational current (Ie) at AC-15, 380 V, 400 V, 415 V			3 A
Rated operational current (Ie) at AC-15, 500 V			1.5 A
Safe isolation			300 V AC, Between auxiliary contacts, According to EN 61140 300 V AC, Between coil and auxiliary contacts, According to EN 61140
Short-circuit rating			
Short-circuit protection rating			10 A fast, 500V, Maximum fuse, Short-circuit rating without welding, Contacts
Short-circuit protection rating without welding			6 A gG/gL, 500 V, Max. Fuse, Contacts
Switching capacity			
Switching capacity (auxiliary contacts, general use)			10 A, 600 V AC, (UL/CSA) 0.5 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 - single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz) 0.85 - 1.1 V AC x Uc (voltage tolerance - dual frequency coil 50/60 Hz)
Power consumption, pick-up, 50 Hz			25 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Power consumption, pick-up, 60 Hz			25 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Power consumption, sealing, 50 Hz			1.3 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 4.6 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Power consumption, sealing, 60 Hz			1.3 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
Rated control supply voltage (Us) at AC, 50 Hz - min			110 V
Rated control supply voltage (Us) at AC, 50 Hz - max			110 V
Rated control supply voltage (Us) at AC, 60 Hz - min			120 V
Rated control supply voltage (Us) at AC, 60 Hz - max			120 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			14 ms
Switching time (AC operated, make contacts, closing delay) - max			21 ms
Switching time (AC operated, make contacts, opening delay) - min			8 ms
Switching time (AC operated, make contacts, opening delay) - max			18 ms
Switching time (AC operated, N/O, with auxiliary contact module, closing delay)			45 ms
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 auxiliary contacts (normally closed contacts)		1
Number of auxiliary contacts (normally open contacts)		3
Number of contacts (normally closed contacts)		1
Number of 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}		0.4 W
Rated operational current for specified heat dissipation (I _n)		6 A
Static heat dissipation, non-current-dependent P _{vs}		1.8 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	110 - 110
Rated control supply voltage AC 60 Hz	V	120 - 120
Rated control supply voltage DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current	A	10
Rated operation current I _e , 400 V	A	3
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	10
Connection type auxiliary circuit		Screw connection
Width	mm	45
Height	mm	58
Depth	mm	52