## **DATASHEET - DILA-40(110VDC)**



## Contactor relay, 110 V DC, 4 N/O, Screw terminals, DC operation



Part no. DILA-40(110VDC) 276347

General specifications	
Product name	Eaton Moeller® series DILA Control relay
Part no.	DILA-40(110VDC)
EAN	4015082763473
Product Length/Depth	75 millimetre
Product height	68 millimetre
Product width	45 millimetre
Product weight	0.294 kilogram
Certifications	UL File No.: E29184 CSA Class No.: 3211-03 CSA File No.: 012528 UL Category Control No.: NKCR EN 60947-5-1 UL 508 UL CSA-C22.2 No. 14-05 CE CSA VDE 0660 IEC/EN 60947-4-1 IEC/EN 60947
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 Suppressor circuit Built-in suppressor circuit
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 (DC operated)
Mounting method	DIN-rail/screw
Operating frequency	9000 Operations/h
Overvoltage category	111
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)	$1 \times (0.75 - 2.5) \text{ mm}^2$ , Screw terminals $2 \times (0.75 - 2.5) \text{ mm}^2$ , Screw terminals
Terminal capacity (solid)	$2 \times (0.75 - 2.5) \text{ mm}^2$ , Screw terminals $1 \times (0.75 - 4) \text{ mm}^2$ , 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	$0.8\times5.5/1\times6$ 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 (le)	10 A at 60 V, DC L/R $\leq$ 15 ms (with 2 contacts in series) 2 A at 110 V, DC L/R $\leq$ 50 ms (with 3 contacts in series) 4 A at 24 V, DC L/R $\leq$ 50 ms (with 3 contacts in series) 3 A at 110 V, DC L/R $\leq$ 15 ms (with 1 contact in series) 4 A at 60 V, DC L/R $\leq$ 50 ms (with 1 contact in series) 10 A at 24 V, DC L/R $\leq$ 50 ms (with 1 contact in series) 6 A at 110 V, DC L/R $\leq$ 15 ms (with 1 contact in series) 1 A at 220 V, DC L/R $\leq$ 15 ms (with 1 contact in series) 1 A at 220 V, DC L/R $\leq$ 15 ms (with 1 contact in series) 5 A at 220 V, DC L/R $\leq$ 15 ms (with 1 contact in series) 1 A at 220 V, DC L/R $\leq$ 50 ms (with 3 contacts in series) 1 A at 220 V, DC L/R $\leq$ 50 ms (with 3 contacts in series) 16 A
Rated operational current (le) 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 (le) 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 coil and auxiliary contacts, According to EN 61140 400 V AC, Between 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	0.7 - 1.3 V DC x Uc (at 24 V: without auxiliary contact module and at ambient air temperature + 40 °C) 0.8 - 1.1 V DC x Uc
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	110 V
Rated control supply voltage (Us) at DC - max	110 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	No
Contacts	
Code number	40D
Control circuit reliability	$\lambda < 5 \times 107$ (1 failure at 2,000,000 operations for U# = 24 V DC, Umin = 17 V, Imin = 5 mA)
Number of auxiliary contacts (change-over contacts)	0

Number of contacts (normally open contacts)  Number of auxiliary contacts (normally open contacts)  Number of auxiliary contacts (normally open contacts)  Pasign verification  Equipment heat dissipation, current-dependent Pvid  Heat dissipation parapole, current-dependent Pvid  Rated operational current for specified heat dissipation (in)  Rests the product standard's requirements.  Rests the product standard's requir		
Number of auxiliary contacts (normally closed contacts)  Number of auxiliary contacts (normally open contacts)  2	Number of contacts (normally closed contacts)	0
Number of auxiliary contacts (normally open contacts)  Design verification  Equipment heat dissipation, current-dependent Pvid  Heat dissipation capacity Pdiss  Design verification  Equipment heat dissipation, capacity Pdiss  Design verification  Heat dissipation capacity Pdiss  Design verification  Static heat dissipation, propole, current-dependent Pvid  Rated operational current for specified heat dissipation (In)  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  10.2.3.2 Verification of resistance of unitation materials to normal heat  10.2.3 Pesistance to ultra-violet (IV) radiation  Meets the product standard's requirements.  10.2.4 Resistance to ultra-violet (IV) radiation  Meets the product standard's requirements.  10.2.5 Lifting  Does not apply, since the entire switchgear needs to be evaluated.  10.2.1 Inscriptions  Meets the product standard's requirements.  10.3 Degree of product independent of assemblies  Does not apply, since the entire switchgear needs to be evaluated.  10.4 Clearances and creepage distances  Meats the product standard's requirements.  10.5 Protection against electric shock  Does not apply, since the entire switchgear needs to be evaluated.  Meats 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  10.7 Internal electrical circuits and connections  10.8 Comment of switching devices and components  10.9 Protection against electric strength  10.9 Romanical function of switching devices and components  10.9 Protection against electric strength  10.10 Temperature rise  The panel builder's responsibility.  10.10 Temperature rise  The panel builder's responsibility.  10.10 Temperatur	Number of contacts (normally open contacts)	4
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10.3 Degree of protection of assemblies  10.4 Clearances and creepage distances  10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Power-frequency electric strength  10.9.1 Resting of enclosures made of insulating material  10.10 Temperature rise  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  Does not apply, since the entire switchgear needs to be evaluated.  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.  Is the panel builder's responsibility.  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	10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances  10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.12 Electromagnetic compatibility  10.13 Mechanical function  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  10 Short apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.  Is the panel builder's responsibility. The specifications for the switchgear must be observed.	10.2.7 Inscriptions	Meets the product standard's requirements.
10.5 Protection against electric shock 10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 10.8 Connections for external conductors 10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.12 Electromagnetic compatibility 10.13 Mechanical function 10.13 Mechanical function 10.15 Medianical function 10.16 Medianical function 10.17 Internal electrics switchgear needs to be evaluated. 10.18 the panel builder's responsibility. 11.18 Is the panel builder's responsibility. 12.19 Is the panel builder's responsibility. 13.19 Is the panel builder is responsibility. 14.10 Is the panel builder is responsibility. 15.10 Is the panel builder's responsibility. 16.11 Short-circuit rating 17.12 Electromagnetic compatibility 18.14 Is the panel builder's responsibility. The specifications for the switchgear must be observed. 19.12 Electromagnetic compatibility 10.13 Mechanical function 10.14 Mechanical function 10.15 Mechanical function 10.16 The device meets the requirements, provided the information in the instruction	10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  1s the panel builder's responsibility.  10.8 Connections for external conductors  1s the panel builder's responsibility.  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  1s the panel builder's responsibility.  1s the panel builder's responsibility. The specifications for the switchgear must be observed.  1s the panel builder's responsibility. The specifications for the switchgear must be observed.  1s the panel builder's responsibility. The specifications for the switchgear must be observed.  1s the panel builder's responsibility. The specifications for the switchgear must be observed.  1s the panel builder's responsibility. The specifications for the switchgear must be observed.	10.4 Clearances and creepage distances	Meets the product standard's requirements.
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	10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  1 Is the panel builder's responsibility.  1 Is the panel builder's responsibility.  1 Is the panel builder is responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder's responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder is responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder is responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder is responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder is responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder is responsibility. The specifications for the switchgear must be observed.	10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  10.11 Short-circuit rating  10.12 Electromagnetic compatibility  10.13 Mechanical function  1 Is the panel builder's responsibility.  1 Is the panel builder is responsibility.  The panel builder is responsibility for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.  1 Is the panel builder's responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder's responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder's responsibility. The specifications for the switchgear must be observed.  1 Is the panel builder's responsibility. The specifications for the switchgear must be observed.	10.7 Internal electrical circuits and connections	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 is responsibility.  The panel builder is responsibile for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.  10.11 Short-circuit rating  Is the panel builder is 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	10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material  10.10 Temperature rise  The panel builder is responsibile 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	10.9.2 Power-frequency electric strength	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	10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
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	10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
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	10.10 Temperature rise	
observed.  10.13 Mechanical function  The device meets the requirements, provided the information in the instruction	10.11 Short-circuit rating	
	10.12 Electromagnetic compatibility	
	10.13 Mechanical function	

## **Technical data ETIM 9.0**

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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	110 - 110		
Voltage type for actuating			DC		
Rated operation current		Α	16		
Rated operation current le, 400 V		Α	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			0		
Number of auxiliary contacts as normally open contact			4		
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	Α	16
Connection type auxiliary circuit		Screw connection
Width	mm	45
Height	mm	68
Depth	mm	75