

# Specifications

Photo is representative

## Eaton 276401

Eaton Moeller® series DILA Contactor relay, 400 V 50 Hz, 440 V 60 Hz, 2 N/O, 2 NC, Screw terminals, AC operation

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller® series DILA Control relay
<b>CATALOG NUMBER</b>	276401
<b>MODEL CODE</b>	DILA- 22(400V50HZ,440V60HZ)
<b>EAN</b>	4015082764012
<b>PRODUCT LENGTH/DEPTH</b>	75 mm
<b>PRODUCT HEIGHT</b>	68 mm
<b>PRODUCT WIDTH</b>	45 mm
<b>PRODUCT WEIGHT</b>	0.237 kg
<b>COMPLIANCES</b>	CE Marked
<b>CERTIFICATIONS</b>	UL 508 IEC 60947-4-1 CSA Std. C22.2 No. 14-05 EN 60947-4-1 VDE CSA-C22.2 No. 14-05 EN 60947-5-1 UL File No.: E29184 VDE 0660 CSA IEC/EN 60947 IEC/EN 60947-4-1 UL Category Control No.: NKCR CSA Class No.: 3211-03 CSA File No.: 012528 UL CE

## Features & Functions

<b>FEATURES</b>	Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module
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<b>FITTED WITH:</b>	Positive operation contacts
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## General

<b>APPLICATION</b>	Contactors relays
<b>DEGREE OF PROTECTION</b>	IP20
<b>SHOCK RESISTANCE</b>	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
<b>LIFESPAN, MECHANICAL</b>	20,000,000 Operations (AC operated)
<b>MOUNTING METHOD</b>	DIN rail
<b>CONNECTION</b>	Screw terminals
<b>OPERATING FREQUENCY</b>	9000 Operations/h
<b>OVERVOLTAGE CATEGORY</b>	III
<b>POLLUTION DEGREE</b>	3
<b>PRODUCT CATEGORY</b>	DILA relays
<b>PROTECTION</b>	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	6000 V AC
<b>VOLTAGE TYPE</b>	AC

## Climatic environmental conditions

<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
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<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	60 °C
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<b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN</b>	25 °C
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<b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX</b>	40 °C
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<b>AMBIENT STORAGE TEMPERATURE - MIN</b>	40 °C
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<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	80 °C
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<b>CLIMATIC PROOFING</b>	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
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## Terminal capacities

<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	2 x (0.75 - 2.5) mm <sup>2</sup> , Screw terminals 1 x (0.75 - 2.5) mm <sup>2</sup> , Screw terminals
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<b>TERMINAL CAPACITY (SOLID)</b>	2 x (0.75 - 2.5) mm <sup>2</sup> , Screw terminals 1 x (0.75 - 4) mm <sup>2</sup> , Screw terminals
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<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	18 - 14, Screw terminals
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<b>STRIPPING LENGTH (MAIN CABLE)</b>	10 mm
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<b>SCREW SIZE</b>	M3.5, Terminal screw
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<b>SCREWDRIVER SIZE</b>	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
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<b>TIGHTENING TORQUE</b>	1.2 Nm, Screw terminals
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## Electrical rating

<b>RATED OPERATIONAL CURRENT (IE)</b>	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)
	4 A at 60 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)
	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)
	3 A at 110 V, DC L/R ≤ 15 ms (with 1 contact 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)
	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

## Magnet system

### DUTY FACTOR

100 %

### PICK-UP VOLTAGE

0.8 - 1.1 V AC x U<sub>c</sub> (voltage tolerance - single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz)

### POWER CONSUMPTION, PICK-UP, 50 HZ

24 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz

### POWER CONSUMPTION, PICK-UP, 60 HZ

24 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz

### POWER CONSUMPTION, SEALING, 50 HZ

1.4 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz  
3.4 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz

### POWER CONSUMPTION, SEALING, 60 HZ

1.4 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz

### RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN

400 V

### RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX

400 V

### RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN

440 V

### RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX

440 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

21 ms

	and auxiliary contacts, According to EN 61140
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)</b>	1 A, 250 V DC, (UL/CSA) 15 A, 600 V AC, (UL/CSA)
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)</b>	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)

Communication	
<b>CONNECTION TO SMARTWIRE-DT</b>	No

CONTACTS, CLOSING DELAY) - MAX	
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN</b>	9 ms
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX</b>	18 ms

Contacts	
<b>CODE NUMBER</b>	22D
<b>CONTROL CIRCUIT RELIABILITY</b>	$\lambda < 5 \times 10^{-7}$ (1 failure at 2,000,000 operations for $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA)
<b>NUMBER OF AUXILIARY CONTACTS (CHANGE- OVER CONTACTS)</b>	0
<b>NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)</b>	2
<b>NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)</b>	2
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	2
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	2

## Design verification

<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>	0 W
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>	0.5 W
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	15.5 A
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>	1.4 W
<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL IMPACT</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.

## Resources

<b>CATALOGUES</b>	<a href="#">Product Range Catalog</a> <a href="#">Switching and protecting motors</a> <a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a>
<b>CHARACTERISTIC CURVE</b>	<a href="#">eaton-contactors-component-dila-relay-characteristic-curve.eps</a> <a href="#">eaton-contactors-dila-relay-characteristic-curve.eps</a>
<b>DECLARATIONS OF CONFORMITY</b>	<a href="#">DA-DC-00004792.pdf</a> <a href="#">DA-DC-00004810.pdf</a>
<b>DRAWINGS</b>	<a href="#">eaton-contactors-mounting-dilm-dimensions-002.eps</a> <a href="#">eaton-contactors-mounting-dilm-dimensions.eps</a> <a href="#">eaton-contactors-module-dilm-dimensions.eps</a> <a href="#">eaton-contactors-frame-dilm-dimensions.eps</a> <a href="#">eaton-contactors-dilm-3d-drawing-007.eps</a>
<b>ECAD MODEL</b>	<a href="#">ETN.276401.edz</a>
<b>INSTALLATION INSTRUCTIONS</b>	<a href="#">eaton-contactors-dila-dilm7-15-dilmp20-instruction-leaflet-il03407013z.pdf</a>
<b>INSTALLATION VIDEOS</b>	<a href="#">WIN-WIN with push-in technology</a>
<b>MCAD MODEL</b>	<a href="#">DA-CD-dil_m7_15</a> <a href="#">DA-CS-dil_m7_15</a>
<b>SYSTEM OVERVIEW</b>	<a href="#">eaton-contactors-dila-system-overview.eps</a>
<b>WIRING DIAGRAMS</b>	<a href="#">2100SWI-108</a>

<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>10.10 TEMPERATURE RISE</b>	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
<b>10.11 SHORT-CIRCUIT RATING</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.13 MECHANICAL FUNCTION</b>	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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