

Specifications



Photo is representative



Eaton 276378

Eaton Moeller® series DILA Contactor relay,
12 V DC, 3 N/O, 1 NC, Screw terminals, DC
operation

General specifications

PRODUCT NAME	Eaton Moeller® series DILA Control relay
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CATALOG NUMBER	276378
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MODEL CODE	DILA-31(12VDC)
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EAN	4015082763787
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PRODUCT LENGTH/DEPTH	75 mm
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PRODUCT HEIGHT	68 mm
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PRODUCT WIDTH	45 mm
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PRODUCT WEIGHT	0.296 kg
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CERTIFICATIONS

UL File No.: E29184
CSA-C22.2 No. 14-05
CE
CSA Class No.: 3211-03
UL Category Control No.:
NKCR
IEC/EN 60947-4-1
UL
UL 508
VDE 0660
CSA
EN 60947-5-1
CSA File No.: 012528
IEC/EN 60947



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Features & Functions

FEATURES

Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module

FITTED WITH:

Suppressor circuit
Positive operation contacts

General

APPLICATION

Contactors 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

CONNECTION

Screw terminals

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

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

RATED OPERATIONAL CURRENT (IE)	10 A at 60 V, DC L/R ≤ 15 ms (with 2 contacts in series)
	1 A at 220 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)
	4 A at 60 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)
	1 A at 220 V, DC L/R ≤ 50 ms (with 3 contacts in series)
	6 A at 60 V, DC L/R ≤ 15 ms (with 1 contact in series)
	6 A at 110 V, DC L/R ≤ 15 ms (with 3 contacts in series)
	4 A at 24 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)
	3 A at 110 V, DC L/R ≤ 15 ms (with 1 contact 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

0.7 - 1.3 V DC x U_c (at 24 V:
without auxiliary contact
module and at ambient air
temperature + 40 °C)
0.8 - 1.1 V DC x U_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

0 V

RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX

12 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

	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)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)

Communication	
CONNECTION TO SMARTWIRE-DT	No

Contacts	
CODE NUMBER	31E
CONTROL CIRCUIT RELIABILITY	$\lambda < 5 \times 10^{-7}$ (1 failure at 2,000,000 operations for $U_e = 24 \text{ V DC}$, $U_{min} = 17 \text{ V}$, $I_{min} = 5.4 \text{ mA}$)
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.

Resources

CATALOGUES	Product Range Catalog Switching and protecting motors eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-component-dila-relay-characteristic-curve.eps eaton-contactors-dila-relay-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	DA-DC-00004792.pdf DA-DC-00004810.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-frame-dilm-dimensions.eps eaton-contactors-module-dilm-dimensions.eps eaton-contactors-dilm-3d-drawing-007.eps
ECAD MODEL	ETN.276378.edz
INSTALLATION INSTRUCTIONS	eaton-contactors-dila-dilm7-15-dilmp20-instruction-leaflet-il03407013z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CD-dil_m7_15 DA-CS-dil_m7_15
SYSTEM OVERVIEW	eaton-contactors-dila-system-overview.eps
WIRING DIAGRAMS	2100SWI-111

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.

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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