Specifications

Photo is representative

Eaton 276416

Eaton Moeller® series DILA Contactor relay, 60 V DC, 2 N/O, 2 NC, Screw terminals, DC operation

General specifications	
PRODUCT NAME	Eaton Moeller® series DILA Control relay
CATALOG NUMBER	276416
MODEL CODE	DILA-22(60VDC)
EAN	4015082764166
PRODUCT LENGTH/DEPTH	75 mm
PRODUCT HEIGHT	68 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.296 kg
COMPLIANCES	CE Marked
CERTIFICATIONS	EN 60947-4-1 CSA Std. C22.2 No. 14-05 IEC 60947-4-1 UL 508 VDE IEC/EN 60947-4-1 CSA-C22.2 No. 14-05 UL UL Category Control No.: NKCR UL File No.: E29184 CSA File No.: 012528 IEC/EN 60947 CSA CE EN 60947-5-1 CSA Class No.: 3211-03 VDE 0660

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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

General

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
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
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, 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 - 2.5) mm^2, Screw terminals 1 x (0.75 - 2.5) mm^2, Screw terminals
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 4) mm^2, Screw terminals 2 x (0.75 - 2.5) 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	2, Terminal screw, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver
TIGHTENING TORQUE	1.2 Nm, Screw terminals

Electrical rating

RATED OPERATIONAL CURRENT (IE)	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) 6 A at 110 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) 5 A at 220 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) 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) 1 A at 220 V, DC L/R ≤ 50 ms (with 3 contacts 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 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	60 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	60 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)	P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)

Communication

CONNECTION TO SMARTWIRE-DT	No

Contacts

CODE NUMBER	22E
CONTROL CIRCUIT RELIABILITY	λ < 5 x 10-7 (1 failure at 2,000,000 operations for U_e = 24 V DC, Umin = 17 V, Imin = 5.4 mA)
NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	2
NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	2
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	2
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	2

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	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf Product Range Catalog Switching and protecting motors
CHARACTERISTIC CURVE	eaton-contactors-dila-relay-characteristic-curve.eps eaton-contactors-component-dila-relay-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	DA-DC-00004792.pdf DA-DC-00004810.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-frame-dilm-dimensions.eps eaton-contactors-module-dilm-dimensions.eps eaton-contactors-dilm-3d-drawing-007.eps
ECAD MODEL	ETN.276416.edz
INSTALLATION INSTRUCTIONS	eaton-contactors-dila-dilm7-15-dilmp20-instruction-leaflet-il03407013z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CS-dil_m7_15 DA-CD-dil_m7_15
SYSTEM OVERVIEW	eaton-contactors-dila-system-overview.eps
WIRING DIAGRAMS	2100SWI-109

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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