Specifications

Eaton 010157

Eaton Moeller® series DILER Contactor relay, 24 V DC, N/O = Normally open: 3 N/O, N/C = Normally closed: 1 NC, Screw terminals, DC operation DILER-31-G(24VDC)

General specifications	
PRODUCT NAME	Eaton Moeller® series DILER Control relay
CATALOG NUMBER	010157
MODEL CODE	DILER-31-G(24VDC)
EAN	4015080101574
PRODUCT LENGTH/DEPTH	54 mm
PRODUCT HEIGHT	58 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.206 kg
CERTIFICATIONS	UL 508 UL CE VDE 0660 IEC/EN 60947-4-1 CSA CSA-C22.2 No. 14-05 CSA File No.: 012528 EN 60947-5-1 UL File No.: E29184 IEC/EN 60947 UL Category Control No.: NKCR CSA Class No.: 3211-03

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Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MAX	50 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	25 °C
CLIMATIC PROOFING	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30

Contacts

CODE NUMBER	31E
CONTROL CIRCUIT RELIABILITY	< 2 λ, < 1 failure at 100,000,000 Operations (at U_e = 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

Design verification

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.
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	Does not apply, since the

Electrical rating

RATED INSULATION VOLTAGE (UI)	690 V
RATED OPERATIONAL CURRENT (IE)	1.5 A at 110 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) 0.5 A at 220 V, DC L/R ≤ 15 ms (with 3 contacts in series) 2.5 A at 24 V, DC L/R ≤ 15 ms (with 1 contact 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
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	600 V
SAFE ISOLATION	300 V AC, Between coil and auxiliary contacts, According to EN 61140 300 V AC, Between auxiliary contacts, According to EN 61140

AGAINST ELECTRIC SHOCK	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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.4 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	6 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	2.3 W

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	20,000,000 Operations (DC 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	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 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
VOLTAGE TYPE	DC

Magnet system

DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.85 - 1.3 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	2.3 W
POWER CONSUMPTION (SEALING) AT DC	2.3 W
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	24 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	24 V
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	35 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	26 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	25 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	15 ms
SWITCHING TIME (DC OPERATED, N/O, WITH AUXILIARY CONTACT MODULE, CLOSING DELAY)	70 ms
VOLTAGE TOLERANCE	Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification

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)	0.5 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)

Terminal capacities

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
STRIPPING LENGTH	8 mm

(MAIN CABLE)	
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 1.5) mm² 2 x (0.75 - 1.5) mm²
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 2.5) mm² 2 x (0.75 - 2.5) mm²
TERMINAL CAPACITY (SOLID/STRANDED AWG)	1 x (18 - 14) 2 x (18 - 14) 18 - 14
TIGHTENING TORQUE	1.2 Nm, Screw terminals

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-diler-relay-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	eaton-control-relay-declaration-of-conformity-uk251243en.pdf eaton-control-relay-declaration-of-conformity-eu250760en.pdf
DRAWINGS	eaton-contactors-diler-dimensions-003.eps eaton-contactors-diler-dimensions-004.eps eaton-contactors-diler-dimensions-002.eps eaton-contactors-diler-dimensions-005.eps eaton-contactors-diler-dimensions.eps eaton-tripping-devices-mounting-diler-contactor-relay-symbol.eps
ECAD MODEL	eaton-diler-control-relay-eplan-010157.edz
INSTALLATION INSTRUCTIONS	IL03407009Z
MCAD MODEL	eaton-contactor-relays-mcad-drawings-dil-em.dwg DA-CS-dil_em
SYSTEM OVERVIEW	eaton-contactors-accessory-diler-relay-system-overview.eps
WIRING DIAGRAMS	eaton-contactors-contact-diler-relay-wiring-diagram-005.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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