Specifications



Photo is representative



Eaton 051768

Eaton Moeller® series DILER Contactor relay, 230 V 50 Hz, 240 V 60 Hz, N/O = Normally open: 3 N/O, N/C = Normally closed: 1 NC, Screw terminals, AC operation DILER-31(230V50HZ,240V60HZ)

General specifications

PRODUCT NAME	Eaton Moeller® series DILER Control relay
CATALOG NUMBER	051768
MODEL CODE	DILER-31(230V50HZ,240V60HZ)
EAN	4015080517689
PRODUCT LENGTH/DEPTH	52 mm
PRODUCT HEIGHT	58 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.17 kg
CERTIFICATIONS	CSA UL 508 CSA File No.: 012528 IEC/EN 60947-4-1 CE IEC/EN 60947 UL File No.: E29184 UL CSA-C22.2 No. 14-05 VDE 0660 CSA Class No.: 3211-03 EN 60947-5-1 UL Category Control No.: NKCR

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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, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

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)	2.5 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series) 0.5 A at 220 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) 1.5 A at 110 V, DC L/R ≤ 15 ms (with 3 contacts 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	1.8 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	10,000,000 Operations (AC 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	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 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
VOLTAGE TYPE	AC

Magnet system

DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.85 - 1.1 V AC x Uc (voltage tolerance - dual frequency coil 50/60 Hz) 0.8 - 1.1 V AC x Uc (voltage tolerance - single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz)
POWER CONSUMPTION, PICK-UP, 50 HZ	25 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
POWER CONSUMPTION, PICK-UP, 60 HZ	25 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
POWER CONSUMPTION, SEALING, 50 HZ	1.3 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 4.6 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
POWER CONSUMPTION, SEALING, 60 HZ	1.3 W, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	230 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	240 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	240 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	21 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	14 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	18 ms

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 TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	8 ms
SWITCHING TIME (AC OPERATED, N/O, WITH AUXILIARY CONTACT MODULE, CLOSING DELAY)	45 ms

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

Terminal capacities

SCREW SIZE	M3.5, Terminal screw
SCREWDRIVER SIZE	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
STRIPPING LENGTH (MAIN CABLE)	8 mm
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 1.5) mm^2 2 x (0.75 - 1.5) mm^2
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm^2 1 x (0.75 - 2.5) mm^2
TERMINAL CAPACITY (SOLID/STRANDED AWG)	1 x (18 - 14) 18 - 14 2 x (18 - 14)

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-eu250760en.pdf eaton-control-relay-declaration-of-conformity-uk251243en.pdf
DRAWINGS	eaton-contactors-diler-dimensions-005.eps eaton-contactors-diler-dimensions-004.eps eaton-contactors-diler-dimensions-002.eps eaton-contactors-diler-dimensions-003.eps eaton-contactors-diler-dimensions.eps eaton-tripping-devices-mounting-diler-contactor-relay-symbol.eps
ECAD MODEL	ETN.051768.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-002.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

Eaton Corporation plc Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

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