

Specifications



Eaton 199210

Eaton Moeller® series DILA Contactor relay, 110 V 50 Hz, 120 V 60 Hz, 3 N/O, 1 NC, Push in terminals, AC operation

General specifications

PRODUCT NAME	Eaton Moeller® series DILA Control relay
CATALOG NUMBER	199210
MODEL CODE	DILA- 31(110V50HZ,120V60HZ)- PI
EAN	4015081972944
PRODUCT LENGTH/DEPTH	75 mm
PRODUCT HEIGHT	68 mm
PRODUCT WIDTH	45 mm
PRODUCT WEIGHT	0.227 kg
CERTIFICATIONS	IEC/EN 60947 VDE 0660 EN 60947-5-1 CSA File No.: 012528 CSA Class No.: 3211-03 UL File No.: E29184 UL 508 CSA-C22.2 No. 14-05 CE marking UL Category Control No.: NKCR UL CSA



Powering Business Worldwide

Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MAX 60 °C

AMBIENT STORAGE TEMPERATURE - MAX 80 °C

AMBIENT OPERATING TEMPERATURE - MIN -25 °C

AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX 40 °C

AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN -25 °C

AMBIENT STORAGE TEMPERATURE - MIN -40 °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 $\lambda < 5 \times 10^{-7}$ (1 failure at 2,000,000 operations for $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA)
 $\lambda < 5 \times 1/10^7$ (1 failure at 2,000,000 operations for $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ 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

NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS) 1

NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS) 3

Communication

CONNECTION TO SMARTWIRE-DT No

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 AGAINST ELECTRIC SHOCK	Does not apply, since the 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

Electrical rating

RATED INSULATION VOLTAGE (UI)

690 V

RATED OPERATIONAL CURRENT (IE)

6 A at 60 V, DC L/R $\leq$ 15 ms (with 1 contact in series)
10 A at 60 V, DC L/R $\leq$ 15 ms (with 2 contacts in series)
1 A at 220 V, DC L/R $\leq$ 50 ms (with 3 contacts in series)
3 A at 110 V, DC L/R $\leq$ 15 ms (with 1 contact in series)
6 A at 110 V, DC L/R $\leq$ 15 ms (with 3 contacts in series)
10 A at 24 V, DC L/R $\leq$ 15 ms (with 1 contact in series)
5 A at 220 V, DC L/R $\leq$ 15 ms (with 3 contacts in series)
1 A at 220 V, DC L/R $\leq$ 15 ms (with 1 contact in series)
2 A at 110 V, DC L/R $\leq$ 50 ms (with 3 contacts in series)
4 A at 24 V, DC L/R $\leq$ 50 ms (with 3 contacts in series)
4 A at 60 V, DC L/R $\leq$ 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 OPERATIONAL VOLTAGE (UE) AT AC - MAX

690 V

SAFE ISOLATION

400 V AC, Between auxiliary contacts, According to EN 61140
400 V AC, Between coil and auxiliary contacts, According to EN 61140

SHORT-CIRCUIT PROTECTION RATING WITHOUT WELDING

10 A gG/gL, 500 V, Max. Fuse, Contacts

SWITCHING CAPACITY

15 A, 600 V AC, (UL/CSA)

Features & functions

FEATURES

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

FITTED WITH:

Positive operation contacts

(AUXILIARY CONTACTS, GENERAL USE)	1 A, 250 V DC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)

General information	
APPLICATION	Contactors relays
CONNECTION	Push in terminals
DEGREE OF PROTECTION	IP20
LIFESPAN, MECHANICAL	20,000,000 Operations (AC operated)
MOUNTING METHOD	DIN-rail/screw
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
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
VOLTAGE TYPE	AC

Magnet system	
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.8 - 1.1 V AC x U _c (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	3.4 VA, AC, Single-frequency coil 50 Hz and Dual-frequency coil 50/60 Hz 1.4 W, 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 - MAX	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	120 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	120 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	21 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN	15 ms

SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	18 ms
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SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN	9 ms
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Terminal capacities

SCREWDRIVER SIZE	3.0 x 0.5 mm, Terminal screw
STRIPPING LENGTH (MAIN CABLE)	10 mm
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.5 - 1.5) mm ² 1 x (0.5 - 2.5) mm ²
TERMINAL CAPACITY (SOLID)	1 x (0.5 - 2.5) mm ² 2 x (0.5 - 2.5) mm ²
TERMINAL CAPACITY (SOLID/STRANDED AWG)	20 - 14
TERMINAL CAPACITY (FLEXIBLE)	1 x (0.5 - 2.5) mm ² 2 x (0.5 - 2.5) mm ²

Resources

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-control-relay-declaration-of-conformity-uk251205en.pdf eaton-control-relay-declaration-of-conformity-eu250722en.pdf
DRAWINGS	eaton-contactors-dimensions-007.eps
ECAD MODEL	ETN.199210.edz
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	eaton-iec-contactors-mcad-3d-models-dil-m7-15-pi.stp eaton-iec-contactors-mcad-drawings-dil-m7-15-pi.dwg
WIRING DIAGRAMS	eaton-contactors-wiring-diagram-2100swi-110.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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