

# Specifications



Photo is representative



## Eaton 052302

Eaton Moeller® series DILEM Contactor, 230 V 50/60 Hz, 3 pole, 380 V 400 V, 4 kW, Contacts N/O = Normally open= 1 N/O, Screw terminals, AC operation

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller® series DILEM Mini contactor
<b>CATALOG NUMBER</b>	052302
<b>MODEL CODE</b>	DILEM-10(230V50/60HZ)
<b>EAN</b>	4015080523024
<b>PRODUCT LENGTH/DEPTH</b>	51 mm
<b>PRODUCT HEIGHT</b>	58 mm
<b>PRODUCT WIDTH</b>	45 mm
<b>PRODUCT WEIGHT</b>	0.17 kg
<b>CERTIFICATIONS</b>	CE CSA IEC/EN 60947-4-1 CSA Class No.: 3211-04 VDE 0660 UL UL File No.: E29096 UL Category Control No.: NLDX UL 508 CSA File No.: 012528 CSA-C22.2 No. 14-05 IEC/EN 60947
<b>CATALOG NOTES</b>	Also tested according to AC-3e.
<b>GLOBAL CATALOG</b>	052302

## Product specifications

<b>NUMBER OF POLES</b>	Three-pole
<b>TYPE</b>	Full voltage non-reversing
<b>VOLTAGE RATING</b>	400 V
<b>FEATURES</b>	Positive operating contacts to EN 60947-5-1 appendix L, including auxiliary contact module
<b>10.10 TEMPERATURE RISE</b>	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
<b>10.11 SHORT-CIRCUIT RATING</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.12 ELECTROMAGNETIC COMPATIBILITY</b>	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
<b>10.13 MECHANICAL FUNCTION</b>	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
<b>10.2.2 CORROSION RESISTANCE</b>	Meets the product standard's requirements.
<b>10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES</b>	Meets the product standard's requirements.
<b>10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT</b>	Meets the product standard's requirements.
<b>10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS</b>	Meets the product standard's requirements.
<b>10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION</b>	Meets the product standard's requirements.
<b>10.2.5 LIFTING</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.2.6 MECHANICAL</b>	Does not apply, since the

## Resources

<b>CATALOGS</b>	<a href="#">eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf</a>  <a href="#">Product Range Catalog Switching and protecting motors</a>  <a href="#">Switching and protecting motors - catalog</a>
<b>CHARACTERISTIC CURVE</b>	<a href="#">eaton-contactors-component-dilm-characteristic-curve-003.eps</a>  <a href="#">eaton-contactors-short-time-loading-dilm-characteristic-curve.eps</a>  <a href="#">eaton-contactors-switch-dilm-characteristic-curve.eps</a>
<b>DECLARATIONS OF CONFORMITY</b>	<a href="#">DA-DC-00004812.pdf</a>  <a href="#">DA-DC-00004788.pdf</a>
<b>DRAWINGS</b>	<a href="#">eaton-contactors-diler-dimensions-005.eps</a>  <a href="#">eaton-contactors-diler-dimensions-004.eps</a>  <a href="#">eaton-contactors-dilem-dimensions.eps</a>  <a href="#">eaton-general-ie-ready-dilm-contactor-standards.eps</a>  <a href="#">eaton-tripping-devices-mounting-diler-contactor-relay-symbol.eps</a>
<b>ECAD MODEL</b>	<a href="#">ETN.052302.edz</a>
<b>INSTALLATION INSTRUCTIONS</b>	<a href="#">IL03407009Z</a>
<b>MCAD MODEL</b>	<a href="#">DA-CS-dil_em</a>  <a href="#">DA-CD-dil_em</a>
<b>SPECIFICATIONS AND DATASHEETS</b>	<a href="#">Eaton Specification Sheet - 052302</a>
<b>SYSTEM OVERVIEW</b>	<a href="#">eaton-contactors-accessory-dilem-system-overview.eps</a>
<b>WIRING DIAGRAMS</b>	<a href="#">eaton-contactors-contact-dilm-wiring-diagram.eps</a>

<b>IMPACT</b>	entire switchgear needs to be evaluated.
<b>10.2.7 INSCRIPTIONS</b>	Meets the product standard's requirements.
<b>10.3 DEGREE OF PROTECTION OF ASSEMBLIES</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.4 CLEARANCES AND CREEPAGE DISTANCES</b>	Meets the product standard's requirements.
<b>10.5 PROTECTION AGAINST ELECTRIC SHOCK</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.6 INCORPORATION OF SWITCHING DEVICES AND COMPONENTS</b>	Does not apply, since the entire switchgear needs to be evaluated.
<b>10.7 INTERNAL ELECTRICAL CIRCUITS AND CONNECTIONS</b>	Is the panel builder's responsibility.
<b>10.8 CONNECTIONS FOR EXTERNAL CONDUCTORS</b>	Is the panel builder's responsibility.
<b>10.9.2 POWER-FREQUENCY ELECTRIC STRENGTH</b>	Is the panel builder's responsibility.
<b>10.9.3 IMPULSE WITHSTAND VOLTAGE</b>	Is the panel builder's responsibility.
<b>10.9.4 TESTING OF ENCLOSURES MADE OF INSULATING MATERIAL</b>	Is the panel builder's responsibility.
<b>FITTED WITH:</b>	Auxiliary contact
<b>OPERATING FREQUENCY</b>	9000 mechanical Operations/h
<b>POLLUTION DEGREE</b>	3
<b>CLIMATIC PROOFING</b>	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	6000 V AC
<b>UTILIZATION CATEGORY</b>	AC-4: Normal AC induction motors: starting, plugging, reversing, inching AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running
<b>CONNECTION</b>	Screw terminals

<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	50 °C
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
<b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX</b>	40 °C
<b>AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN</b>	-25 °C
<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	80 °C
<b>AMBIENT STORAGE TEMPERATURE - MIN</b>	-40 °C
<b>ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE</b>	0.5 HP
<b>ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE</b>	2 HP
<b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE</b>	1.5 HP
<b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE</b>	3 HP
<b>ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE</b>	5 HP
<b>ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE</b>	5 HP
<b>CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)</b>	40 A
<b>CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)</b>	16 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)</b>	19 A
<b>CONVENTIONAL THERMAL CURRENT ITH OF AUXILIARY CONTACTS (1-POLE, OPEN)</b>	10 A
<b>CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)</b>	50 A
<b>EQUIPMENT HEAT</b>	1.2 W

<b>DISSIPATION, CURRENT-DEPENDENT PVID</b>	
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>	0.4 W
<b>SWITCHING TIME (AC OPERATED, N/O, WITH AUXILIARY CONTACT MODULE, CLOSING DELAY)</b>	45 ms
<b>APPLICATION</b>	Mini Contactors for Motors and Resistive Loads
<b>PRODUCT CATEGORY</b>	Contactors
<b>PROTECTION</b>	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
<b>TERMINALS</b>	Screw terminals
<b>ARCING TIME</b>	12 ms at 690 V AC
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Screw connection
<b>SCREWDRIVER SIZE</b>	0.8 x 5.5/1 x 6 mm, Terminal screw, Standard screwdriver 2, Terminal screw, Pozidriv screwdriver
<b>VOLTAGE TYPE</b>	AC
<b>DEGREE OF PROTECTION</b>	IP20
<b>MOUNTING POSITION</b>	As required (except vertical with terminals A1/A2 at the bottom)
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	1
<b>NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT</b>	0
<b>NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)</b>	3
<b>RATED BREAKING</b>	90 A

<b>CAPACITY AT 220/230 V</b>	
<b>RATED BREAKING CAPACITY AT 380/400 V</b>	90 A
<b>RATED BREAKING CAPACITY AT 500 V</b>	64 A
<b>RATED BREAKING CAPACITY AT 660/690 V</b>	42 A
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX</b>	230 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN</b>	230 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX</b>	230 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>	230 V
<b>COIL VOLTAGE</b>	230 Vac, 50-60 Hz
<b>OVERVOLTAGE CATEGORY</b>	III
<b>CONTROL CIRCUIT RELIABILITY</b>	< 2 λ, < 1 failure at 100,000,000 Operations (at U <sub>e</sub> = 24 V DC, U <sub>min</sub> = 17 V, I <sub>min</sub> = 5.4 mA)
<b>DUTY FACTOR</b>	100 %
<b>CHANGEOVER TIME</b>	16 - 21 ms
<b>NUMBER OF CONTACTS</b>	1 NO
<b>LIFESPAN, MECHANICAL</b>	7,000,000 Operations (Coil 50/60 Hz) 200,000 Operations (at 240 V, AC-15) 150,000 Operations (at 240 V, DC, L/R = 50 ms: 2 contacts in series 0.5 A) 10,000,000 Operations
<b>PICK-UP VOLTAGE</b>	0.85 - 1.1 V AC x U <sub>c</sub> (voltage tolerance - dual frequency coil 50/60 Hz)
<b>POWER CONSUMPTION, PICK-UP, 50 HZ</b>	26 W, AC, Dual-frequency coil at 50 Hz 30 VA, AC, Dual-frequency coil at 50 Hz
<b>SAFE ISOLATION</b>	300 V AC, Between auxiliary contacts, According to EN 61140 300 V AC, Between coil and contacts, According to EN 61140

	300 V AC, Between the contacts, According to EN 61140 300 V AC, Between coil and auxiliary contacts, According to EN 61140
<b>POWER CONSUMPTION, PICK-UP, 60 HZ</b>	24 W, AC, Dual-frequency coil at 60 Hz 29 VA, AC, Dual-frequency coil at 60 Hz
<b>SCREW SIZE</b>	M3.5, Terminal screw
<b>POWER CONSUMPTION, SEALING, 50 HZ</b>	1.8 W, Coil in a cold state and 1.0 x Us 5.4 VA, Coil in a cold state and 1.0 x Us
<b>POWER CONSUMPTION, SEALING, 60 HZ</b>	1.8 W, AC, Dual-frequency coil at 60 Hz 1.8 W, Coil in a cold state and 1.0 x Us 5.4 VA, Coil in a cold state and 1.0 x Us 3.9 VA, AC, Dual-frequency coil at 60 Hz
<b>RATED OPERATIONAL CURRENT (IE)</b>	2.5 A at 24 V, DC L/R ≤ 15 ms (with 1 contact in series) 1.5 A at 100 V, DC L/R ≤ 15 ms (with 3 contacts 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)
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)</b>	0.5 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)</b>	P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	1 x (0.75 - 1.5) mm <sup>2</sup> 2 x (0.75 - 1.5) mm <sup>2</sup>
<b>SHOCK RESISTANCE</b>	10 g, N/O main contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 20 g, N/O 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 main contact, Basic unit without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms 8 g, N/O auxiliary contact, Basic unit without auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms 20 g, N/C auxiliary contact, Basic unit with auxiliary contact module, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms
<b>TERMINAL CAPACITY (SOLID)</b>	2 x (0.75 - 2.5) mm <sup>2</sup> 1 x (0.75 - 2.5) mm <sup>2</sup>
<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	18 - 14
<b>SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)</b>	15 A, Maximum motor rating (UL/CSA)
<b>TIGHTENING TORQUE</b>	1.2 Nm, Screw terminals
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN</b>	0 V
<b>RATED INSULATION VOLTAGE (UI)</b>	690 V
<b>RATED MAKING CAPACITY UP TO 440 V (COS PHI TO IEC/EN 60947)</b>	110 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V</b>	22 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 220 V, 230 V, 240 V</b>	6 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-15, 380 V, 400 V, 415 V</b>	3 A
<b>RATED OPERATIONAL</b>	1.5 A



<b>CURRENT (IE) AT AC-15, 500 V</b>	
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V</b>	9 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V</b>	9 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V</b>	9 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V</b>	6.4 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>	4.8 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V</b>	6.6 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>	6.6 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V</b>	6.6 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V</b>	5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V</b>	3.4 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V</b>	20 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 12 V</b>	20 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V</b>	20 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 24 V</b>	20 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V</b>	20 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	9 A

<b>RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ</b>	2.5 kW
<b>RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ</b>	4 kW
<b>RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ</b>	4.3 kW
<b>RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ</b>	1.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ</b>	1.8 kW
<b>RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ</b>	3 kW
<b>RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ</b>	3.1 kW
<b>RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ</b>	3.3 kW
<b>RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ</b>	3 kW
<b>RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ</b>	3 kW
<b>RATED OPERATIONAL POWER (NEMA)</b>	3.7 kW
<b>RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX</b>	690 V
<b>RESISTANCE PER POLE</b>	9.18 mΩ
<b>STATIC HEAT DISSIPATION, NON- CURRENT-DEPENDENT PVS</b>	1.8 W
<b>STRIPPING LENGTH (MAIN CABLE)</b>	8 mm
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX</b>	21 ms
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN</b>	14 ms

<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX</b>	18 ms
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN</b>	8 ms
<b>SHORT-CIRCUIT CURRENT RATING (BASIC RATING)</b>	5 kA, SCCR (UL/CSA) 45 A, max. Fuse, SCCR (UL/CSA)
<b>SHORT-CIRCUIT PROTECTION</b>	10 A fast, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding PKZM0-4, Maximum overcurrent protective device, Short-circuit protection only, Auxiliary contacts, Short-circuit rating without welding 6 A gG/gL, Max. Fuse 500V, Auxiliary contacts, Short-circuit rating without welding
<b>SUITABLE FOR</b>	Also motors with efficiency class IE3
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 500 V</b>	20 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 500 V</b>	10 A gG/gL
<b>CONVENTIONAL THERMAL CURRENT I<sub>TH</sub> AT 40°C (3-POLE, OPEN)</b>	22 A
<b>CONVENTIONAL THERMAL CURRENT I<sub>TH</sub> AT 50°C (3-POLE, OPEN)</b>	20 A
<b>RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ</b>	4.6 kW
<b>RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ</b>	4 kW
<b>RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ</b>	4 kW
<b>ACTUATING VOLTAGE</b>	230 V 50/60 Hz

ALTITUDE	Max. 2000 m
OPERATING VOLTAGE AT AC, 50 HZ - MIN	24 V
OPERATING VOLTAGE AT AC, 50 HZ - MAX	690 V
OPERATING VOLTAGE AT AC, 60 HZ - MIN	24 V
OPERATING VOLTAGE AT AC, 60 HZ - MAX	690 V

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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