

## Eaton 277965

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 18.5 kW, 230 V 50 Hz, 240 V 60 Hz, AC operation, Spring-loaded terminals DILMC40(230V50HZ,240V60HZ)

<b>PRODUCT NAME</b>	Eaton Moeller® series DILM contactor
<b>CATALOG NUMBER</b>	277965
<b>PRODUCT LENGTH/DEPTH</b>	132.1 mm
<b>PRODUCT HEIGHT</b>	115 mm
<b>PRODUCT WIDTH</b>	55 mm
<b>PRODUCT WEIGHT</b>	0.872 kg
<b>CERTIFICATIONS</b>	CSA Class No.: 2411-03, 3211-04 CSA File No.: 012528 CSA-C22.2 No. 60947-4-1-14 IEC/EN 60947-4-1 CE IEC/EN 60947 UL 60947-4-1 UL Category Control No.: NLDX VDE 0660 CSA UL UL File No.: E29096
<b>CATALOG NOTES</b>	Contacts according to EN 50012

**ELECTRICAL  
CONNECTION TYPE FOR  
AUXILIARY- AND  
CONTROL-CURRENT  
CIRCUIT**

Spring clamp connection

**NUMBER OF POLES**

Three-pole

**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.

**CHARACTERISTIC CURVE**

[eaton-contactors-switch-dilm-characteristic-curve-002.eps](#)

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[IL03407033Z](#)

[eaton-contactors-contact-dilm-wiring-diagram-003.eps](#)

[eaton-contactors-dilm-dimensions-002.eps](#)

[eaton-contactors-dilm-3d-drawing-012.eps](#)

<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>OPERATING FREQUENCY</b>	5000 mechanical Operations/h (AC operated)
<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>CONNECTION TO SMARTWIRE-DT</b>	No
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	8000 V AC
<b>UTILIZATION CATEGORY</b>	AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
<b>CONNECTION</b>	Spring-loaded terminals Screw terminals

<b>FRAME SIZE</b>	FS3
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	60 °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>	3 HP
<b>ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE</b>	10 HP
<b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE</b>	7.5 HP
<b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE</b>	15 HP
<b>ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE</b>	30 HP
<b>ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE</b>	40 HP
<b>CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)</b>	112 A
<b>CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)</b>	45 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)</b>	55 A
<b>CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)</b>	125 A
<b>EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID</b>	6.6 W

<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID</b>	2.2 W
<b>APPLICATION</b>	Contactors for Motors
<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>	Spring-cage terminals on auxiliary and control circuit terminals
<b>ARCING TIME</b>	10 ms
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Screw connection
<b>SCREWDRIVER SIZE</b>	2, Terminal screw, Main cables, Pozidriv screwdriver 3.5 mm, Spring-loaded terminals, Control circuit cables 0.8 x 5.5/1 x 6 mm, Terminal screw, Main cables, Standard screwdriver
<b>VOLTAGE TYPE</b>	AC
<b>DEGREE OF PROTECTION</b>	IP00
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	0
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	0
<b>NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT</b>	0
<b>NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)</b>	3
<b>RATED BREAKING CAPACITY AT 220/230 V</b>	400 A
<b>RATED BREAKING CAPACITY AT 380/400 V</b>	400 A
<b>RATED BREAKING CAPACITY AT 500 V</b>	400 A

<b>RATED BREAKING CAPACITY AT 660/690 V</b>	250 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>	240 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>	240 V
<b>DROP-OUT VOLTAGE</b>	AC operated: 0.6 - 0.3 x UC, AC operated
<b>OVERVOLTAGE CATEGORY</b>	III
<b>DUTY FACTOR</b>	100 %
<b>EMITTED INTERFERENCE</b>	According to EN 60947-1
<b>INTERFERENCE IMMUNITY</b>	According to EN 60947-1
<b>LIFESPAN, MECHANICAL</b>	10,000,000 Operations (AC operated)
<b>PICK-UP VOLTAGE</b>	0.8 - 1.1 V AC x Uc
<b>POWER CONSUMPTION, PICK-UP, 50 HZ</b>	149 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
<b>SAFE ISOLATION</b>	440 V AC, Between the contacts, According to EN 61140 440 V AC, Between coil and contacts, According to EN 61140
<b>POWER CONSUMPTION, PICK-UP, 60 HZ</b>	178 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz
<b>SCREW SIZE</b>	M6, Terminal screw, Main cables
<b>POWER CONSUMPTION, SEALING, 50 HZ</b>	4.1 W, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz 16 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 50 Hz
<b>POWER CONSUMPTION, SEALING, 60 HZ</b>	4.1 W, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz 19 VA, Dual-frequency coil in a cold state and 1.0 x

	Us, at 60 Hz
<b>TERMINAL CAPACITY (STRANDED)</b>	2 x (16 - 35) mm <sup>2</sup> , Main cables 1 x (16 - 50) mm <sup>2</sup> , Main cables
<b>TERMINAL CAPACITY (COPPER BAND)</b>	2 x (6 x 9 x 0.8) mm (Number of segments x width x thickness), Main cables
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	2 x (0.75 - 1.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals 2 x (0.75 - 25) mm <sup>2</sup> , Main cables 1 x (0.75 - 1.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 35) mm <sup>2</sup> , Main cables
<b>SHOCK RESISTANCE</b>	5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
<b>TERMINAL CAPACITY (SOLID)</b>	2 x (0.75 - 16) mm <sup>2</sup> , Main cables 1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals 1 x (0.75 - 16) mm <sup>2</sup> , Main

	cables
<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	Single 14 - 1, double 14 - 2, Main cables 18 - 14, Control circuit cables, Spring-loaded terminals
<b>SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)</b>	63 A, Maximum motor rating (UL/CSA)
<b>TIGHTENING TORQUE</b>	3.3 Nm, Screw terminals, Main cables
<b>TERMINAL CAPACITY (FLEXIBLE)</b>	1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded terminals 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables, Spring-loaded 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 690 V (COS PHI TO IEC/EN 60947)</b>	560 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V</b>	60 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V</b>	40 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V</b>	40 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V</b>	40 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V</b>	40 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>	25 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V</b>	18 A

<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>	18 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V</b>	18 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V</b>	18 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V</b>	14 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V</b>	50 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V</b>	45 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V</b>	50 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	40 A
<b>RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ</b>	13.5 kW
<b>RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ</b>	18.5 kW
<b>RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ</b>	24 kW
<b>RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ</b>	5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ</b>	5.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ</b>	9 kW
<b>RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ</b>	9.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ</b>	10 kW
<b>RATED OPERATIONAL POWER AT AC-4, 500 V, 50</b>	11 kW

<b>HZ</b>	
<b>RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ</b>	12 kW
<b>RATED OPERATIONAL POWER (NEMA)</b>	22 kW
<b>RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX</b>	690 V
<b>RESISTANCE PER POLE</b>	1.9 mΩ
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>	4.1 W
<b>STRIPPING LENGTH (CONTROL CIRCUIT CABLE)</b>	10 mm
<b>STRIPPING LENGTH (MAIN CABLE)</b>	14 mm
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX</b>	18 ms
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MIN</b>	12 ms
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX</b>	13 ms
<b>SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MIN</b>	8 ms
<b>SHORT-CIRCUIT CURRENT RATING (BASIC RATING)</b>	250 A, max. CB, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA) 250 A, max. Fuse, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)</b>	30/100 kA, Fuse, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 100 A, max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>	30/100 kA, Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA)

	30 kA, CB, SCCR (UL/CSA) 250/150 A, Class J, max. Fuse, SCCR (UL/CSA)
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V</b>	125 A gG/gL
<b>SUITABLE FOR</b>	Also motors with efficiency class IE3
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V</b>	80 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V</b>	63 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V</b>	50 A gG/gL
<b>SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS</b>	79 A (480V 60Hz 3phase, 277V 60Hz 1phase) 79 A (600V 60Hz 3phase, 347V 60Hz 1phase)
<b>SPECIAL PURPOSE RATING OF ELEVATOR CONTROL</b>	7.5 HP, 200 V 60 Hz 3-ph, (UL/CSA) 25 HP, 480 V 60 Hz 3-ph, (UL/CSA) 28 A, 240 V 60 Hz 3-ph, (UL/CSA) 10 HP, 240 V 60 Hz 3-ph, (UL/CSA) 30 HP, 600 V 60 Hz 3-ph, (UL/CSA) 34 A, 480 V 60 Hz 3-ph, (UL/CSA) 32 A, 600 V 60 Hz 3-ph, (UL/CSA) 25.3 A, 200 V 60 Hz 3-ph, (UL/CSA)
<b>SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING</b>	79 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 79 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
<b>SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS</b>	74 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 74 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)

<b>CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)</b>	60 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN)</b>	57 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN)</b>	50 A
<b>RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ</b>	25 kW
<b>RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ</b>	28 kW
<b>RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ</b>	23 kW
<b>ACTUATING VOLTAGE</b>	230 V 50 Hz, 240 V 60 Hz
<b>ALTITUDE</b>	Max. 2000 m
<b>OPERATING VOLTAGE AT AC, 50 HZ - MIN</b>	230 V
<b>OPERATING VOLTAGE AT AC, 50 HZ - MAX</b>	690 V
<b>OPERATING VOLTAGE AT AC, 60 HZ - MIN</b>	230 V
<b>OPERATING VOLTAGE AT AC, 60 HZ - MAX</b>	690 V

<b>PROJECT NAME:</b>
<b>PROJECT NUMBER:</b>
<b>PREPARED BY:</b>
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