



## Eaton 199649

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 4 kW, 1 NC, 220 V 50/60 Hz, AC operation, Push in terminals

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<b>PRODUCT NAME</b>	Eaton Moeller® series DILM contactor
<b>CATALOG NUMBER</b>	199649
<b>PRODUCT LENGTH/DEPTH</b>	75 mm
<b>PRODUCT HEIGHT</b>	68 mm
<b>PRODUCT WIDTH</b>	45 mm
<b>PRODUCT WEIGHT</b>	0.225 kg
<b>CERTIFICATIONS</b>	IEC/EN 60947 VDE 0660

<b>NUMBER OF POLES</b>	Three-pole
<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 IMPACT</b>	Does not apply, since the 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.

DECLARATIONS OF CONFORMITY	<a href="#">eaton-contactor-declaration-of-conformity-uk251209en.pdf</a>
MCAD MODEL	<a href="#">eaton-iec-contactors-mcad-3d-models-dil-m7-15-pi.stp</a> <a href="#">dil_m7_15_pi.dwg</a>
□□	<a href="#">eaton-contactors-dimensions-007.eps</a>

<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>	Mirror contact
<b>OPERATING FREQUENCY</b>	9000 mechanical Operations/h (AC operated)
<b>POLLUTION DEGREE</b>	3
<b>CLIMATIC PROOFING</b>	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
<b>CONNECTION TO SMARTWIRE-DT</b>	No
<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-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces
<b>CONNECTION</b>	Push in terminals
<b>FRAME SIZE</b>	FS1
<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</b>	-25 °C

<b>TEMPERATURE (ENCLOSED) - MIN</b>	
<b>AMBIENT STORAGE TEMPERATURE - MAX</b>	80 °C
<b>AMBIENT STORAGE TEMPERATURE - MIN</b>	-40 °C
<b>CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)</b>	45 A
<b>CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)</b>	18 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)</b>	21 A
<b>CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1- POLE, OPEN)</b>	50 A
<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>ARCING TIME</b>	10 ms
<b>ELECTRICAL CONNECTION TYPE OF MAIN CIRCUIT</b>	Push-in connection
<b>SCREWDRIVER SIZE</b>	3.0 x 0.5 mm, Terminal screw 3 x 0.5 mm, Terminal screw
<b>VOLTAGE TYPE</b>	AC
<b>DEGREE OF PROTECTION</b>	IP20
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)</b>	1
<b>NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)</b>	0
<b>NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)</b>	1
<b>NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT</b>	0
<b>NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)</b>	0

<b>NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)</b>	3
<b>RATED BREAKING CAPACITY AT 220/230 V</b>	90 A
<b>RATED BREAKING CAPACITY AT 380/400 V</b>	90 A
<b>RATED BREAKING CAPACITY AT 500 V</b>	70 A
<b>RATED BREAKING CAPACITY AT 660/690 V</b>	50 A
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX</b>	220 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN</b>	220 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX</b>	220 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>	220 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>	27 VA, Dual-frequency coil in a cold state and 1.0 x Us
<b>SAFE ISOLATION</b>	400 V AC, Between coil and contacts, According to EN 61140 400 V AC, Between the contacts, According to EN 61140
<b>POWER CONSUMPTION, PICK-UP, 60 HZ</b>	25 VA, Dual-frequency coil in a cold state and 1.0 x Us
<b>POWER CONSUMPTION, SEALING, 50 HZ</b>	1.4 W, Dual-frequency coil in a cold state and 1.0 x Us 1.2 W, Dual-frequency coil in a cold state and 1.0 x Us
<b>POWER CONSUMPTION, SEALING, 60 HZ</b>	1.2 W, Dual-frequency coil in a cold state and 1.0 x Us

	<p>4.2 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz</p> <p>1.4 W, Dual-frequency coil in a cold state and 1.0 x Us</p> <p>3.3 VA, Dual-frequency coil in a cold state and 1.0 x Us, at 60 Hz</p>
<b>TERMINAL CAPACITY (FLEXIBLE WITH UNISOLATED FERRULE)</b>	<p>1 x (0.5 - 2.5) mm<sup>2</sup></p> <p>2 x (0.5 - 2.5) mm<sup>2</sup></p>
<b>TERMINAL CAPACITY (FLEXIBLE WITH ULTRASONIC WELDED CABLE END)</b>	<p>1 x (0.5 - 2.5) mm<sup>2</sup></p> <p>2 x (0.5 - 2.5) mm<sup>2</sup></p>
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	<p>1 x (0.5 - 2.5) mm<sup>2</sup></p> <p>2 x (0.5 - 1.5) mm<sup>2</sup></p>
<b>SHOCK RESISTANCE</b>	<p>5.7 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half- sinusoidal shock 10 ms</p> <p>7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms</p> <p>10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms</p> <p>5 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms</p> <p>3.4 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop- mounted, Half-sinusoidal shock 10 ms</p> <p>3.4 g, N/C auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop- mounted, Half-sinusoidal shock 10 ms</p>
<b>TERMINAL CAPACITY (SOLID)</b>	<p>1 x (0.5 - 2.5) mm<sup>2</sup></p> <p>2 x (0.5 - 2.5) mm<sup>2</sup></p>
<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	20 - 14
<b>TERMINAL CAPACITY (FLEXIBLE)</b>	<p>1 x (0.5 - 2.5) mm<sup>2</sup></p> <p>2 x (0.5 - 2.5) mm<sup>2</sup></p>
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC -</b>	0 V

<b>MAX</b>	
<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>	112 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-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>	7 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>	5 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V</b>	6 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>	6 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V</b>	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>	4.5 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V</b>	20 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 220 V</b>	15 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 60 V</b>	20 A

<b>RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ</b>	3 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>	5.5 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>	1.6 kW
<b>RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ</b>	2.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ</b>	2.8 kW
<b>RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ</b>	3 kW
<b>RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ</b>	2.8 kW
<b>RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ</b>	3.6 kW
<b>RATED OPERATIONAL POWER (NEMA)</b>	0 kW
<b>RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX</b>	690 V
<b>STRIPPING LENGTH (MAIN CABLE)</b>	10 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>	15 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>	9 ms



<b>SHORT-CIRCUIT CURRENT RATING (BASIC RATING)</b>	5 kA, 30 A max. fuse, SCCR (UL/CSA) 5 kA, 30 A max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)</b>	100 kA, 20 A CLASS J max. fuse, SCCR (UL/CSA) 30 kA, 25 A CLASS RK5 max. fuse, SCCR (UL/CSA) 65 kA, 16 A max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>	100 kA, 20 A CLASS J max. fuse, SCCR (UL/CSA) 30 kA, 25 A CLASS RK5 max. fuse, SCCR (UL/CSA)
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V</b>	35 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>	20 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V</b>	20 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V</b>	16 A gG/gL
<b>OPERATING VOLTAGE AT AC, 50 HZ - MIN</b>	24 V
<b>OPERATING VOLTAGE AT AC, 50 HZ - MAX</b>	690 V
<b>OPERATING VOLTAGE AT AC, 60 HZ - MIN</b>	24 V
<b>OPERATING VOLTAGE AT AC, 60 HZ - MAX</b>	690 V

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:



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