

# Specifications



## Eaton 199987

Eaton Moeller® series DILM Contactor, 4 pole, DC operation: 45 A, 1 NC, 12 V DC, Screw terminals

### General specifications

<b>PRODUCT NAME</b>	Eaton Moeller® series DILMP 4-pole contactor
<b>CATALOG NUMBER</b>	199987
<b>MODEL CODE</b>	DILMP45-01(RDC12)
<b>EAN</b>	4015081997688
<b>PRODUCT LENGTH/DEPTH</b>	97 mm
<b>PRODUCT HEIGHT</b>	85 mm
<b>PRODUCT WIDTH</b>	58 mm
<b>PRODUCT WEIGHT</b>	0.596 kg
<b>CERTIFICATIONS</b>	CSA Class No.: 2411-03, 3211-04 IEC/EN 60947-4-1 UL File No.: E29096 CE CSA File No.: 012528 CSA UL Category Control No.: NLDX IEC/EN 60947 VDE 0660 UL 60947-4-1 CSA-C22.2 No. 60947-4-1- 14 UL
<b>GLOBAL CATALOG</b>	199987



Powering Business Worldwide

## Product specifications

<b>NUMBER OF POLES</b>	Four-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</b>	Does not apply, since the entire switchgear needs to

## Resources

### CATALOGS

[SmartWire-DT Catalog](#)

[eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf](#)

[Product Range Catalog Switching and protecting motors](#)

### DECLARATIONS OF CONFORMITY

[DA-DC-00004816.pdf](#)

[DA-DC-00004783.pdf](#)

[eaton-contactors-dimensions-2110dim-10.eps](#)

[eaton-contactors-dimensions-2110dim-11.eps](#)

### DRAWINGS

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

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

[eaton-contactors-characteristic-curve-2110dia-3.eps](#)

### ECAD MODEL

[ETN.199987.edz](#)

### INSTALLATION INSTRUCTIONS

[IL03407049Z](#)

### INSTALLATION VIDEOS

[WIN-WIN with push-in technology](#)

### MCAD MODEL

[DA-CS-dil mp32 45](#)

[DA-CD-dil mp32 45](#)

### WIRING DIAGRAMS

[2100SWI-121](#)

<b>ASSEMBLIES</b>	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>	Suppressor circuit in actuating electronics Mirror contact
<b>OPERATING FREQUENCY</b>	5000 mechanical Operations/h (DC operated) 5000 mechanical Operations/h (AC operated)
<b>POLLUTION DEGREE</b>	3
<b>CLIMATIC PROOFING</b>	Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30
<b>CONNECTION TO SMARTWIRE-DT</b>	In conjunction with DIL-SWD SmartWire DT contactor module Yes
<b>RATED IMPULSE WITHSTAND VOLTAGE (UIMP)</b>	8000 V AC
<b>CONNECTION</b>	Screw terminals
<b>AMBIENT OPERATING TEMPERATURE - MAX</b>	60 °C
<b>AMBIENT OPERATING TEMPERATURE - MIN</b>	-25 °C
<b>AMBIENT OPERATING</b>	40 °C

<b>TEMPERATURE (ENCLOSED) - MAX</b>	
<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>	2 HP
<b>ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE</b>	7.5 HP
<b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE</b>	5 HP
<b>ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE</b>	10 HP
<b>ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE</b>	15 HP
<b>ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE</b>	20 HP
<b>CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)</b>	105 A
<b>CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)</b>	36 A
<b>CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)</b>	40 A
<b>CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1- POLE, OPEN)</b>	117 A
<b>EQUIPMENT HEAT DISSIPATION, CURRENT- DEPENDENT PVID</b>	13.2 W
<b>HEAT DISSIPATION CAPACITY PDISS</b>	0 W
<b>HEAT DISSIPATION PER POLE, CURRENT- DEPENDENT PVID</b>	4.4 W
<b>SWITCHING TIME (DC OPERATED, MAKE</b>	47 ms

<b>CONTACTS, CLOSING DELAY) - MAX</b>	
<b>SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX</b>	30 ms
<b>APPLICATION</b>	Contactors for 4 pole electric consumers
<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>	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>	DC
<b>DEGREE OF PROTECTION</b>	IP00
<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 MAIN CONTACTS (NORMALLY OPEN CONTACT)</b>	4
<b>POWER CONSUMPTION (PICK-UP) AT DC</b>	12 W
<b>POWER CONSUMPTION (SEALING) AT DC</b>	0.9 W
<b>RATED BREAKING CAPACITY AT 220/230 V</b>	250 A
<b>RATED BREAKING CAPACITY AT 380/400 V</b>	250 A
<b>RATED BREAKING</b>	250 A

<b>CAPACITY AT 500 V</b>	
<b>RATED BREAKING CAPACITY AT 660/690 V</b>	144 A
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX</b>	0 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN</b>	0 V
<b>DROP-OUT VOLTAGE</b>	0.2 - 0.6 x UC, DC operated
<b>OVERVOLTAGE CATEGORY</b>	III
<b>DUTY FACTOR</b>	100 %
<b>LIFESPAN, MECHANICAL</b>	10,000,000 Operations (AC operated) 10,000,000 Operations (DC operated)
<b>PICK-UP VOLTAGE</b>	0.7 - 1.2 V DC x Uc 0.85 - 1.1 V AC/DC x Us
<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>RESIDUAL CURRENT</b>	1 mA (with actuation of A1 - A2 by the electronics with "0" signal)
<b>SCREW SIZE</b>	M5, Terminal screw, Main cables M3.5, Terminal screw, Control circuit cables
<b>TERMINAL CAPACITY (STRANDED)</b>	1 x 16 mm <sup>2</sup> , Main cables
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)</b>	1 A, 250 V DC, (UL/CSA) 10 A, 600 V AC, (UL/CSA)
<b>SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)</b>	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
<b>TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)</b>	1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 2 x (0.75 - 10) mm <sup>2</sup> , Main

	cables 1 x (0.75 - 16) mm <sup>2</sup> , Main cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit 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, Half- sinusoidal shock 10 ms 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27, Half- sinusoidal shock 10 ms
<b>TERMINAL CAPACITY (SOLID)</b>	2 x (0.75 - 10) mm <sup>2</sup> , Main cables 1 x (0.75 - 16) mm <sup>2</sup> , Main cables 2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables
<b>TERMINAL CAPACITY (SOLID/STRANDED AWG)</b>	18 - 6, Main cables 18 - 14, Control circuit cables
<b>SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)</b>	40 A, Maximum motor rating (UL/CSA)
<b>TIGHTENING TORQUE</b>	1.2 Nm, Screw terminals, Control circuit cables 3 Nm, Screw terminals, Main cables
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX</b>	14 V
<b>RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN</b>	12 V
<b>RATED INSULATION VOLTAGE (UI)</b>	690 V
<b>RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)</b>	350 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V</b>	45 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3,</b>	25 A

<b>220 V, 230 V, 240 V</b>	
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V</b>	25 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V</b>	25 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V</b>	25 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V</b>	15 A
<b>RATED OPERATIONAL CURRENT (IE) AT AC-4, 400 V</b>	15 A
<b>RATED OPERATIONAL CURRENT (IE) AT DC-1, 110 V</b>	45 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>	45 A
<b>RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)</b>	45 A
<b>RATED OPERATIONAL POWER AT AC-1, 220/230 V, 50 HZ</b>	16 kW
<b>RATED OPERATIONAL POWER AT AC-1, 240 V, 50 HZ</b>	18 kW
<b>RATED OPERATIONAL POWER AT AC-1, 380/400 V, 50 HZ</b>	28 kW
<b>RATED OPERATIONAL POWER AT AC-1, 415 V, 50 HZ</b>	31 kW
<b>RATED OPERATIONAL POWER AT AC-1, 440 V, 50 HZ</b>	33 kW
<b>RATED OPERATIONAL POWER AT AC-1, 500 V, 50 HZ</b>	37 kW
<b>RATED OPERATIONAL POWER AT AC-1, 690 V, 50 HZ</b>	49 kW
<b>RATED OPERATIONAL</b>	8.5 kW



<b>POWER AT AC-3, 240 V, 50 HZ</b>	
<b>RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ</b>	11 kW
<b>RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ</b>	14.5 kW
<b>RATED OPERATIONAL POWER AT AC-4, 380/400 V, 50 HZ</b>	7 kW
<b>RATED OPERATIONAL POWER (NEMA)</b>	11 kW
<b>RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX</b>	690 V
<b>RESISTANCE PER POLE</b>	2.7 mΩ
<b>STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS</b>	0.9 W
<b>STRIPPING LENGTH (CONTROL CIRCUIT CABLE)</b>	10 mm
<b>STRIPPING LENGTH (MAIN CABLE)</b>	10 mm
<b>SHORT-CIRCUIT CURRENT RATING (BASIC RATING)</b>	5 kA, SCCR (UL/CSA) 125 A, max. Fuse, SCCR (UL/CSA) 125 A, max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)</b>	125/70 A, Class J, max. Fuse, SCCR (UL/CSA) 10/65 kA, CB, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA) 10/100 kA, Fuse, SCCR (UL/CSA)
<b>SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)</b>	10/100 kA, Fuse, SCCR (UL/CSA) 125/100 A, Class J, max. Fuse, SCCR (UL/CSA) 10/22 kA, CB, SCCR (UL/CSA) 50/32 A, max. CB, SCCR (UL/CSA)
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V</b>	100 A gG/gL

<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V</b>	50 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V</b>	35 A gG/gL
<b>SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V</b>	35 A gG/gL
<b>SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS</b>	40 A (480V 60Hz 3phase, 277V 60Hz 1phase) 40 A (600V 60Hz 3phase, 347V 60Hz 1phase)
<b>SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING</b>	25 A, FLA 480 V 60 Hz 3- ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 150 A, LRA 480 V 60 Hz 3- ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
<b>SPECIAL PURPOSE RATING OF ELEVATOR CONTROL</b>	3 HP, 200 V 60 Hz 3-ph, (UL/CSA) 17 A, 600 V 60 Hz 3-ph, (UL/CSA) 5 HP, 240 V 60 Hz 3-ph, (UL/CSA) 10 HP, 480 V 60 Hz 3-ph, (UL/CSA) 11 A, 200 V 60 Hz 3-ph, (UL/CSA) 15 HP, 600 V 60 Hz 3-ph, (UL/CSA) 15.2 A, 240 V 60 Hz 3-ph, (UL/CSA) 14 A, 480 V 60 Hz 3-ph, (UL/CSA)
<b>SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)</b>	240 A, LRA 480 V 60 Hz 3phase; (CSA) 30 A, FLA 600 V 60 Hz 3phase; (CSA) 40 A, FLA 480 V 60 Hz 3phase; (CSA) 180 A, LRA 600 V 60 Hz 3phase; (CSA)
<b>SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING</b>	40 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA) 40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
<b>SPECIAL PURPOSE</b>	40 A, 480 V 60 Hz 3phase,

<b>RATING OF TUNGSTEN INCANDESCENT LAMPS</b>	277 V 60 Hz 1phase, (UL/CSA) 40 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA)
<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

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



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