

Specifications

Eaton 107016

Eaton Moeller® series DILM Contactor, 3 pole, 380 V 400 V 90 kW, RDC 24: 24 - 27 V DC, DC operation, Screw terminals DILM170(RDC24)

General specifications

PRODUCT NAME	Eaton Moeller® series DILM contactor
CATALOG NUMBER	107016
MODEL CODE	DILM170(RDC24)
EAN	4015081067848
PRODUCT LENGTH/DEPTH	160 mm
PRODUCT HEIGHT	170 mm
PRODUCT WIDTH	90 mm
PRODUCT WEIGHT	2.25 kg
CERTIFICATIONS	IEC/EN 60947-4-1 UL File No.: E29096 VDE 0660 IEC/EN 60947 UL UL 60947-4-1 CSA CSA File No.: 012528 UL Category Control No.: NLDX CSA-C22.2 No. 60947-4-1- 14 CE CSA Class No.: 2411-03, 3211-04
CATALOG NOTES	Contacts according to EN 50012
GLOBAL CATALOG	107016

Product specifications

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.
10.2.7 INSCRIPTIONS	Meets the product standard's requirements.
10.3 DEGREE OF PROTECTION OF	Does not apply, since the entire switchgear needs to

Resources

CATALOGS	SmartWire-DT Catalog Product Range Catalog Switching and protecting motors eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-switch-dilm-characteristic-curve.eps eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps eaton-contactors-switch-dilm-characteristic-curve-002.eps eaton-contactors-short-time-loading-dilm-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	DA-DC-00004818.pdf DA-DC-00004781.pdf
DRAWINGS	eaton-contactors-dilm-dimensions-003.eps eaton-contactors-dilm-dimensions-011.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-dilm-3d-drawing-013.eps eaton-contactors-dilm-3d-drawing.eps
ECAD MODEL	ETN.107016.edz

ASSEMBLIES	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.
FITTED WITH:	Suppressor circuit in actuating electronics
OPERATING FREQUENCY	3000 mechanical Operations/h (DC operated)
POLLUTION DEGREE	3
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
CONNECTION TO SMARTWIRE-DT	No
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
UTILIZATION CATEGORY	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
CONNECTION	Screw terminals
FRAME SIZE	FS4
AMBIENT OPERATING	60 °C

INSTALLATION INSTRUCTIONS	eaton-dil-contactors-instruction-leaflet-il03407039z.pdf
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	DA-CS-dil_m80_170
SYSTEM OVERVIEW	DA-CD-dil_m80_170
WIRING DIAGRAMS	eaton-contactors-dilm-contactor-system-overview.eps
	eaton-contactors-contact-dilm-wiring-diagram-003.eps

TEMPERATURE - MAX

AMBIENT OPERATING TEMPERATURE - MIN -25 °C

AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX 40 °C

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

AMBIENT STORAGE TEMPERATURE - MAX 80 °C

AMBIENT STORAGE TEMPERATURE - MIN -40 °C

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE 10 HP

ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE 50 HP

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE 30 HP

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE 60 HP

ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE 125 HP

ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE 125 HP

CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED) 415 A

CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED) 166 A

CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN) 190 A

CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN) 460 A

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID 41.1 W

HEAT DISSIPATION CAPACITY PDISS 0 W

HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	13.7 W
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	35 ms
SWITCHING TIME (DC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	30 ms
APPLICATION	Contactors for Motors
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
ARCING TIME	15 ms
ELECTRICAL	
CONNECTION TYPE OF MAIN CIRCUIT	Screw connection
SCREWDRIVER SIZE	2, Terminal screw, Control circuit cables, Pozidriv screwdriver 0.8 x 5.5/1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver
VOLTAGE TYPE	DC
DEGREE OF PROTECTION	IP00
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
NUMBER OF CONTACTS (NORMALLY CLOSED) AS MAIN CONTACT	0
NUMBER OF MAIN CONTACTS (NORMALLY OPEN CONTACT)	3
POWER CONSUMPTION (PICK-UP) AT DC	149 W
POWER CONSUMPTION (SEALING) AT DC	1.9 W
RATED BREAKING CAPACITY AT 220/230 V	1500 A

RATED BREAKING CAPACITY AT 380/400 V	1500 A
RATED BREAKING CAPACITY AT 500 V	1500 A
RATED BREAKING CAPACITY AT 660/690 V	1320 A
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50	0 V
Hz - MAX	
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50	0 V
Hz - MIN	
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60	0 V
Hz - MAX	
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60	0 V
Hz - MIN	
DROP-OUT VOLTAGE	0.6 - 0.15 x UC, DC operated
OVERVOLTAGE CATEGORY	At least smoothed two-phase bridge rectifier or three-phase rectifier
DUTY FACTOR	III
EMITTED INTERFERENCE	100 %
INTERFERENCE IMMUNITY	According to EN 60947-1
LIFESPAN, MECHANICAL	According to EN 60947-1
PICK-UP VOLTAGE	10,000,000 Operations (DC operated)
SAFE ISOLATION	24 - 27 V DC (RDC 24) 0.7 - 1.2 V DC x Uc
RESIDUAL CURRENT	690 V AC, Between coil and contacts, According to EN 61140 690 V AC, Between the contacts, According to EN 61140
SCREW SIZE	1 mA (with actuation of A1 - A2 by the electronics with "0" signal)
TERMINAL CAPACITY	M3.5, Terminal screw, Control circuit cables 5 mm AF, Hexagon socket-head spanner, Terminal screw, Main cables M10, Terminal screw, Main cables
	2 x (16 - 70) mm ² , Main

(STRANDED)	cables 1 x (16 - 95) mm ² , Main cables
TERMINAL CAPACITY (COPPER BAND)	2 x (6 x 16 x 0.8) mm (Number of segments x width x thickness), Main cables
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (10 - 95) mm ² , Main cables 2 x (0.75 - 2.5) mm ² , Control circuit cables 2 x (10 - 70) mm ² , Main cables 1 x (0.75 - 2.5) mm ² , Control circuit cables
SHOCK RESISTANCE	5 g, N/C 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 10 g, N/O main contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, 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 7 g, N/O auxiliary contact, Mechanical, according to IEC/EN 60068-2-27 when tabletop-mounted, Half-sinusoidal shock 10 ms
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 4) mm ² , Control circuit cables 2 x (0.75 - 2.5) mm ² , Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	Single 8...3/0, double 8...2/0, Main cables 18 - 14, Control circuit cables
SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	225 A, Maximum motor rating (UL/CSA)
TIGHTENING TORQUE	14 Nm, Screw terminals,

	Main cables 1.2 Nm, Screw terminals, Control circuit cables
RATED CONTROL SUPPLY	
VOLTAGE (US) AT DC -	27 V
MAX	
RATED CONTROL SUPPLY	
VOLTAGE (US) AT DC -	24 V
MIN	
RATED INSULATION	
VOLTAGE (UI)	690 V
RATED MAKING	
CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947)	2100 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	225 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	170 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	170 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-3, 440 V	170 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-3, 500 V	170 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-3, 660 V, 690 V	100 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	65 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-4, 400 V	65 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-4, 440 V	65 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-4, 500 V	65 A
RATED OPERATIONAL	
CURRENT (IE) AT AC-4, 660 V, 690 V	50 A
RATED OPERATIONAL	
CURRENT (IE) AT DC-1,	160 A

110 V

RATED OPERATIONAL

CURRENT (IE) AT DC-1, 220 V 90 A

RATED OPERATIONAL

CURRENT (IE) AT DC-1, 60 V 160 A

RATED OPERATIONAL

CURRENT FOR SPECIFIED HEAT DISSIPATION (IN) 170 A

RATED OPERATIONAL

POWER AT AC-3, 240 V, 50 HZ 57 kW

RATED OPERATIONAL

POWER AT AC-3, 380/400 V, 50 HZ 90 kW

RATED OPERATIONAL

POWER AT AC-3, 415 V, 50 HZ 100 kW

RATED OPERATIONAL

POWER AT AC-4, 220/230 V, 50 HZ 20 kW

RATED OPERATIONAL

POWER AT AC-4, 240 V, 50 HZ 22 kW

RATED OPERATIONAL

POWER AT AC-4, 380/400 V, 50 HZ 33 kW

RATED OPERATIONAL

POWER AT AC-4, 415 V, 50 HZ 39 kW

RATED OPERATIONAL

POWER AT AC-4, 440 V, 50 HZ 41 kW

RATED OPERATIONAL

POWER AT AC-4, 500 V, 50 HZ 47 kW

RATED OPERATIONAL

POWER AT AC-4, 660/690 V, 50 HZ 48 kW

RATED OPERATIONAL

POWER (NEMA) 93 kW

RATED OPERATIONAL

VOLTAGE (UE) AT AC - MAX 690 V

RESISTANCE PER POLE

0.6 mΩ

STATIC HEAT

DISSIPATION, NON-CURRENT-DEPENDENT 1.9 W

PVS

STRIPPING LENGTH (CONTROL CIRCUIT CABLE)	10 mm
STRIPPING LENGTH (MAIN CABLE)	24 mm
SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	600 A, max. CB, SCCR (UL/CSA) 600 A, max. Fuse, SCCR (UL/CSA) 10 kA, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	300/300 A, Class J, max. Fuse, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 250 A, max. CB, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA)
SHORT-CIRCUIT RATING (HIGH FAULT AT 600 V)	30/100 kA, Fuse, SCCR (UL/CSA) 30 kA, CB, SCCR (UL/CSA) 300/600 A, Class J, max. Fuse, SCCR (UL/CSA) 350 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	250 A gG/gL
SPECIAL PURPOSE RATING OF BALLAST ELECTRICAL DISCHARGE LAMPS	160 A (600V 60Hz 3phase, 347V 60Hz 1phase) 160 A (480V 60Hz 3phase, 277V 60Hz 1phase)
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	170 A, FLA 480 V 60 Hz 3- ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 1020 A, LRA 480 V 60 Hz 3- ph, 100,000 cycles acc. to UL 1995, (UL/CSA)
SPECIAL PURPOSE RATING OF ELEVATOR	40 HP, 240 V 60 Hz 3-ph, (UL/CSA)

CONTROL	96 A, 480 V 60 Hz 3-ph, (UL/CSA) 104 A, 240 V 60 Hz 3-ph, (UL/CSA) 99 A, 600 V 60 Hz 3-ph, (UL/CSA) 30 HP, 200 V 60 Hz 3-ph, (UL/CSA) 92 A, 200 V 60 Hz 3-ph, (UL/CSA) 75 HP, 480 V 60 Hz 3-ph, (UL/CSA) 100 HP, 600 V 60 Hz 3-ph, (UL/CSA)
SPECIAL PURPOSE RATING OF REFRIGERATION CONTROL (CSA ONLY)	90 A, FLA 480 V 60 Hz 3phase; (CSA) 90 A, FLA 600 V 60 Hz 3phase; (CSA) 540 A, LRA 600 V 60 Hz 3phase; (CSA) 540 A, LRA 480 V 60 Hz 3phase; (CSA)
SPECIAL PURPOSE RATING OF RESISTANCE AIR HEATING	160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
SPECIAL PURPOSE RATING OF TUNGSTEN INCANDESCENT LAMPS	160 A, 600 V 60 Hz 3phase, 347 V 60 Hz 1phase, (UL/CSA) 160 A, 480 V 60 Hz 3phase, 277 V 60 Hz 1phase, (UL/CSA)
CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)	225 A
CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN)	200 A
CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN)	185 A
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	105 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	120 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	96 kW
ACTUATING VOLTAGE	RDC 24: 24 - 27 V DC

ALTITUDE	Max. 2000 m
OPERATING VOLTAGE AT AC, 50 HZ - MIN	230 V
OPERATING VOLTAGE AT AC, 50 HZ - MAX	690 V
OPERATING VOLTAGE AT AC, 60 HZ - MIN	230 V
OPERATING VOLTAGE AT AC, 60 HZ - MAX	690 V
OPERATING VOLTAGE AT DC - MIN	24 V
OPERATING VOLTAGE AT DC - MAX	27 V

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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