Specifications

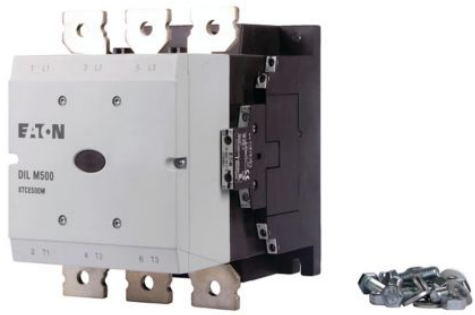

Photo is representative

Eaton 208214

Eaton Moeller® series DILM Contactor, 380 V 400 V 265 kW, 2 N/O, 2 NC, RAC 500: 250 - 500 V 40 - 60 Hz/250 - 700 V DC, AC and DC operation, Screw connection

General specifications

PRODUCT NAME	Eaton Moeller® series DILM Contactor
CATALOG NUMBER	208214
MODEL CODE	DILM500/22(RAC500)
EAN	4015082082147
PRODUCT LENGTH/DEPTH	216 mm
PRODUCT HEIGHT	219 mm
PRODUCT WIDTH	160 mm
PRODUCT WEIGHT	8.662 kg
CERTIFICATIONS	IEC/EN 60947-4-1 VDE 0660 UL Category Control No.: NLDX UL 60947-4-1 UL File No.: E29096 CSA Class No.: 3211-04 UL/CSA CSA file No. 012528 North America (UL listed, CSA certified) EN 45545: Fire protection on railway vehicles IEC 61373: Vibration and shock, tested for category 1 class B CE marking
CATALOG NOTES	• Contacts according to EN 50012 • Also tested according to AC-3e up to 500 V. • Also suitable for motors with efficiency class IE3.

Powering Business Worldwide

	• EN 45545 - Fire protection on railway vehicles: Fire protection class of all plastics according to UL94: V-0 / plastic weight in total: 2.576 kg • Conventional thermal current Ith of main contacts (1-pole, open) at 60°

General

ACCESSORIES	Fitting options auxiliary contacts: on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA
APPLICATION	Contactors for Motors
CONNECTION	Screw terminals
DEGREE OF PROTECTION	IP00
ELECTROMAGNETIC COMPATIBILITY	Designed for operation in industrial environments. Its use in residential environments may cause radio-frequency interference, requiring additional noise suppression.
FITTED WITH:	Suppressor circuit in actuating electronics
LIFESPAN, ELECTRICAL	100,000 Operations (at Condensor operation)
LIFESPAN, MECHANICAL	7,000,000 Operations (AC operated) 7,000,000 Operations (DC operated)
OPERATING FREQUENCY	200 Operations/h 2000 mechanical Operations/h (AC operated) 2000 mechanical Operations/h (DC operated)
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Contactors
PROTECTION	Finger and back-of-hand proof with terminal shroud or terminal block, Protection against direct contact when actuated from front (EN 50274)
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	8000 V AC
RESISTANCE	500 mΩ (Admissible transitional contact resistance - of the external control circuit device when actuating A11)
SHOCK RESISTANCE	8 g, N/C auxiliary contact,

Climatic environmental conditions

ALTITUDE	Max. 2000 m
AMBIENT OPERATING TEMPERATURE - MIN	-40 °C
AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
AMBIENT STORAGE TEMPERATURE - MAX	80 °C
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

	Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms 10 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
SIGNAL LEVEL	5 V - 15 V, PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2), Magnet systems
UTILIZATION CATEGORY	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
VOLTAGE TYPE	AC/DC

Terminal capacities

TERMINAL CAPACITY (BUSBAR)	30 mm width, Main connection
TERMINAL CAPACITY (COPPER BAND)	Fixing with flat cable terminal or cable terminal blocks; See terminal capacity for cable terminal blocks
TERMINAL CAPACITY (FLEXIBLE WITH CABLE LUG)	50 - 240 mm^2
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm^2, Control circuit cables 1 x (0.75 - 2.5) mm^2, Control circuit cables
TERMINAL CAPACITY (SOLID)	1 x (0.75 - 2.5) mm^2, Control circuit cables 2 x (0.75 - 2.5) mm^2, Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 14, Control circuit cables 2/0 - 500 MCM, Main cables
TERMINAL CAPACITY (STRANDED WITH CABLE LUG)	70 - 240 mm^2
WIDTH ACROSS FLATS	16 mm
SCREW SIZE	M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main connections
SCREWDRIVER SIZE	2, Terminal screw, Control circuit cables, Pozidriv screwdriver
TIGHTENING TORQUE	24 Nm, Main cable connection screw/bolt 1.2 Nm, Screw terminals, Control circuit cables

Electrical rating

INRUSH CURRENT	Max. 30 x Ie (peak)
RATED BREAKING CAPACITY AT 220/230 V	5000 A
RATED BREAKING CAPACITY AT 380/400 V	5000 A
RATED BREAKING CAPACITY AT 500 V	5000 A
RATED BREAKING CAPACITY AT 660/690 V	5000 A
RATED BREAKING CAPACITY AT 1000 V	950 A
RATED INSULATION VOLTAGE (UI)	1000 V
RATED MAKING CAPACITY (COS PHI TO IEC/EN 60947)	5500 A
RATED OPERATIONAL CURRENT (IE)	307 A at up to 525 V (Individual compensation, three-phase capacitors, open) 177 A at 690 V (Individual compensation, three-phase capacitors, open)
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	500 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	500 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	500 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	500 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	325 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 1000 V	95 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	360 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	360 A
RATED OPERATIONAL	360 A

CURRENT (IE) AT AC-4, 500 V	
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	260 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 1000 V	95 A
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	170 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	250 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	290 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	315 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	355 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	300 kW
RATED OPERATIONAL POWER AT AC-3, 1000 V, 50 HZ	132 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	112 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	122 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	216 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	229 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	250 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	240 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	1000 V

RATED OPERATIONAL POWER AT AC-4, 1000 V, 50 HZ	132 kW
SAFE ISOLATION	1000 V AC, Between coil and contacts, According to EN 61140
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	520 A, FLA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 3900 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 3120 A, LRA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 635 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	30 kA, SCCR (UL/CSA) 800 A, max. Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	30/100 kA, Fuse, SCCR (UL/CSA) 100 kA, CB, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 800/600 A, Class J, max. Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	800/600 A, Class J, max. Fuse, SCCR (UL/CSA) 30 kA, CB, SCCR (UL/CSA) 30/100 kA, Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 1000 V	250 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	630 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	630 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 1000 V	200 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	500 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	500 A gG/gL

AC-1/Conventional thermal current Ith

CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)	800 A
CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN)	715 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	682 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	600 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	1625 A
CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	1500 A

Switching capacity

SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	550 A, Maximum motor rating (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	1 A, 250 V DC, (UL/CSA) 15 A, 600 V AC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	P300, DC operated (UL/CSA) A600, AC operated (UL/CSA)

Magnet system

BEHAVIOR IN MARGINAL AND TRANSITIONAL CONDITIONS	Sealing - Pick-up phase (0 - 0.7 x Uc min: Contactor does not switch on Sealing - Excess voltage (1.15 - 1.3 x Uc max): Contactor remains switched on Sealing - Voltage drops (0.2 - 0.6 x Uc min ≤12 ms: Time is bridged successfully Sealing - Voltage drops (0.6 - 0.7 x Uc min: Contactor remains switched on Sealing - Pick-up phase (0.7 x Uc min - 1.15 x Uc max): Contactor switches on with certainty Sealing - Voltage interruptions (0 - 0.2 x Uc min ≤ 10 ms: Time is bridged successfully Sealing - Voltage drops (0.2 - 0.6 x Uc min) > 12 ms: Drop-out of the contactor Sealing - Voltage interruptions 0 - 0.2 x Uc min) > 10 ms: Drop-out of the contactor
DROP-OUT VOLTAGE	AC operated: 0.2 x US max - 0.6 x US min, AC operated 0.2 x US max - 0.6 x US min, DC operated
DUTY FACTOR	100 %
PICK-UP VOLTAGE	0.7 - 1.15 V DC x Us 0.7 - 1.15 V AC x Us
POWER CONSUMPTION	Control transformer with uk ≤ 6%
POWER CONSUMPTION, PICK-UP, 50 HZ	350 W, Pull-in power, Coil in a cold state and 1.0 x Us 450 VA, Pull-in power, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION, PICK-UP, 60 HZ	450 VA, Pull-in power, Coil in a cold state and 1.0 x Us 350 W, Pull-in power, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION,	19.6 VA, Coil in a cold state

SEALING, 50 HZ	and 1.0 x Us 11.7 W, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 60 HZ	11.7 W, Coil in a cold state and 1.0 x Us 19.6 VA, Coil in a cold state and 1.0 x Us
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	250 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	500 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	250 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	500 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	250 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	700 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	80 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	110 ms

Motor rating

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	200 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	400 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	500 HP

Contacts

NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	2
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	2
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	2
NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	2

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	19.33 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	500 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	11.7 W
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 ASSEMBLIES	Does not apply, since the entire switchgear needs to 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.

Resources

BROCHURES	eaton-product-brochure-dilmdilh-power-contactors-brochure-br034010en-en-us.pdf
CATALOGUES	Product Range Catalog Switching and protecting motors
CHARACTERISTIC CURVE	eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve.eps eaton-contactors-component-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve-003.eps
DECLARATIONS OF CONFORMITY	DA-DC-00004796.pdf DA-DC-00004804.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-dilm-dimensions-009.eps eaton-contactors-mounting-dilm-3d-drawing-002.eps eaton-contactors-dilm-3d-drawing-005.eps
ECAD MODEL	DA-CE-ETN.DILM500_22(RAC500)
INSTALLATION INSTRUCTIONS	IL03406002Z
MCAD MODEL	eaton-iec-contactors-drawings-dilm500-570-s22.dwg

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.
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.

	eaton-iec-contactors-3d-models-dilm500-570-s22.stp
PEP ECO-PASSPORT	eaton-contactor-declaration-of-conformity-uk251103en.pdf eaton-contactor-declaration-of-conformity-eu250620en.pdf
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-004.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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