Specifications



Photo is representative



Eaton 208201

Eaton Moeller® series DILM Contactor, 380 V 400 V 132 kW, 2 N/O, 2 NC, RA 250: 110 - 250 V 40 - 60 Hz/110 - 350 V DC, AC and DC operation, Screw connection DILM250/22(RA250)

General specifications	
PRODUCT NAME	Eaton Moeller® series DILM Contactor
CATALOG NUMBER	208201
MODEL CODE	DILM250/22(RA250)
EAN	4015082082017
PRODUCT LENGTH/DEPTH	208 mm
PRODUCT HEIGHT	189 mm
PRODUCT WIDTH	140 mm
PRODUCT WEIGHT	7.065 kg
CERTIFICATIONS	VDE 0660 UL 60947-4-1 IEC/EN 60947-4-1 UL File No.: E29096 UL Category Control No.: NLDX CSA Class No.: 3211-04 UL/CSA CSA File No. 1017510 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. • EN 45545 - Fire

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	protection on railway vehicles: Fire protection class of all plastics according to UL94: V-0 / plastic weight in total: 1.872 kg • Conventional thermal current Ith of main contacts (1-pole, open) at 60°

AC-1/Conventional thermal current Ith

CONVENTIONAL THERMAL CURRENT ITH (1-POLE, ENCLOSED)	750 A
CONVENTIONAL THERMAL CURRENT ITH (3-POLE, ENCLOSED)	300 A
CONVENTIONAL THERMAL CURRENT ITH AT 40°C (3-POLE, OPEN)	430 A
CONVENTIONAL THERMAL CURRENT ITH AT 50°C (3-POLE, OPEN)	380 A
CONVENTIONAL THERMAL CURRENT ITH AT 55°C (3-POLE, OPEN)	365 A
CONVENTIONAL THERMAL CURRENT ITH AT 60°C (3-POLE, OPEN)	350 A
CONVENTIONAL THERMAL CURRENT ITH OF MAIN CONTACTS (1-POLE, OPEN)	875 A

Climatic environmental conditions

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

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

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 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.
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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	28 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	9.33 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	250 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	5.5 W

Electrical rating

INRUSH CURRENT	Max. 30 x Ie (peak)
RATED BREAKING CAPACITY AT 1000 V	760 A
RATED BREAKING CAPACITY AT 220/230 V	2500 A
RATED BREAKING CAPACITY AT 380/400 V	2500 A
RATED BREAKING CAPACITY AT 500 V	2500 A
RATED BREAKING CAPACITY AT 660/690 V	2500 A
RATED INSULATION VOLTAGE (UI)	1000 V
RATED MAKING CAPACITY (COS PHI TO IEC/EN 60947)	3000 A
RATED OPERATIONAL CURRENT (IE)	133 A at 690 V (Individual compensation, three-phase capacitors, open) 220 A at up to 525 V (Individual compensation, three-phase capacitors, open)
RATED OPERATIONAL CURRENT (IE) AT AC-1, 380 V, 400 V, 415 V	430 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 1000 V	76 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	250 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	250 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 440 V	250 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	250 A
RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	185 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 1000 V	76 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 220 V, 230 V, 240 V	200 A

General information

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	10,000,000 Operations (AC operated) 10,000,000 Operations (DC operated)
OPERATING FREQUENCY	200 Operations/h 3000 mechanical Operations/h (AC operated) 3000 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, Mechanical, according to

RATED OPERATIONAL CURRENT (IE) AT AC-4, 440 V	200 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 500 V	200 A
RATED OPERATIONAL CURRENT (IE) AT AC-4, 660 V, 690 V	150 A
RATED OPERATIONAL POWER AT AC-3, 1000 V, 50 HZ	108 kW
RATED OPERATIONAL POWER AT AC-3, 240 V, 50 HZ	85 kW
RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	132 kW
RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	143 kW
RATED OPERATIONAL POWER AT AC-3, 440 V, 50 HZ	152 kW
RATED OPERATIONAL POWER AT AC-3, 500 V, 50 HZ	173 kW
RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	170 kW
RATED OPERATIONAL POWER AT AC-4, 1000 V, 50 HZ	108 kW
RATED OPERATIONAL POWER AT AC-4, 220/230 V, 50 HZ	62 kW
RATED OPERATIONAL POWER AT AC-4, 240 V, 50 HZ	68 kW
RATED OPERATIONAL POWER AT AC-4, 415 V, 50 HZ	117 kW
RATED OPERATIONAL POWER AT AC-4, 440 V, 50 HZ	125 kW
RATED OPERATIONAL POWER AT AC-4, 500 V, 50 HZ	138 kW
RATED OPERATIONAL POWER AT AC-4, 660/690 V, 50 HZ	137 kW
RATED OPERATIONAL VOLTAGE (UE) AT AC -	1000 V
	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-3: Normal AC induction motors: starting, switch off during running AC-1: Non-inductive or slightly inductive loads, resistance furnaces
VOLTAGE TYPE	AC/DC

MAX	
SAFE ISOLATION	500 V AC, Between the contacts, According to EN 61140 500 V AC, Between coil and contacts, According to EN 61140
SPECIAL PURPOSE RATING OF DEFINITE PURPOSE RATING	1800 A, LRA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 250 A, FLA 600 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 300 A, FLA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA) 2050 A, LRA 480 V 60 Hz 3-ph, 100,000 cycles acc. to UL 1995, (UL/CSA)

Magnet system

BEHAVIOR IN MARGINAL AND TRANSITIONAL CONDITIONS	Sealing - Voltage interruptions (0 - 0.2 x Uc min ≤ 10 ms: Time is bridged successfully Sealing - Pick-up phase (0 - 0.7 x Uc min: Contactor does not switch on Sealing - Voltage drops (0.2 - 0.6 x Uc min) > 12 ms: Drop-out of the contactor Sealing - Pick-up phase (0.7 x Uc min - 1.15 x Uc max): Contactor switches on with certainty Sealing - Voltage drops (0.2 - 0.6 x Uc min ≤12 ms: Time is bridged successfully Sealing - Voltage interruptions 0 - 0.2 x Uc min) > 10 ms: Drop-out of the contactor Sealing - Excess voltage (1.15 - 1.3 x Uc max): Contactor remains switched on Sealing - Voltage drops (0.6 - 0.7 x Uc min: Contactor remains switched on
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 AC x Us 0.7 - 1.15 V DC x Us
POWER CONSUMPTION	Control transformer with uk ≤ 6%
POWER CONSUMPTION, PICK-UP, 50 HZ	240 VA, Pull-in power, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION, PICK-UP, 60 HZ	240 VA, Pull-in power, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 50 HZ	10.5 VA, Coil in a cold state and 1.0 x Us 0 CO, Coil in a cold state and 1.0 x Us 5.5 W, Coil in a cold state and 1.0 x Us
POWER CONSUMPTION, SEALING, 60 HZ	5.5 W, Coil in a cold state and 1.0 x Us 10.5 VA, Coil in a cold state and 1.0 x Us

Motor rating

ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE	75 HP
ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE	100 HP
ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE	200 HP
ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE	250 HP

RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	250 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	250 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	110 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	250 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	110 V
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, CLOSING DELAY) - MAX	100 ms
SWITCHING TIME (AC OPERATED, MAKE CONTACTS, OPENING DELAY) - MAX	110 ms

Short-circuit rating

SHORT-CIRCUIT CURRENT RATING (BASIC RATING)	700 A, max. Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 18 kA, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 480 V)	250 A, max. CB, SCCR (UL/CSA) 18 kA, Fuse, SCCR (UL/CSA) 65 kA, CB, SCCR (UL/CSA) 700 A, Class L, max. Fuse, SCCR (UL/CSA) 700 A, Class L/450 A, Class J, max. Fuse, SCCR (UL/CSA) 18/100 kA, Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT CURRENT RATING (HIGH FAULT AT 600 V)	18 kA, Fuse, SCCR (UL/CSA) 700 A, Class J, max. Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA) 18 kA, CB, SCCR (UL/CSA) 700 A, Class L/450 A, Class J, max. Fuse, SCCR (UL/CSA) 18/100 kA, Fuse, SCCR (UL/CSA)
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 1000 V	200 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 400 V	400 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 1 COORDINATION) AT 690 V	400 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 1000 V	160 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 400 V	315 A gG/gL
SHORT-CIRCUIT PROTECTION RATING (TYPE 2 COORDINATION) AT 690 V	315 A gG/gL

Switching capacity

SWITCHING CAPACITY (AUXILIARY CONTACTS, GENERAL USE)	15 A, 600 V AC, (UL/CSA) 1 A, 250 V DC, (UL/CSA)
SWITCHING CAPACITY (AUXILIARY CONTACTS, PILOT DUTY)	A600, AC operated (UL/CSA) P300, DC operated (UL/CSA)
SWITCHING CAPACITY (MAIN CONTACTS, GENERAL USE)	350 A, Maximum motor rating (UL/CSA)

Terminal capacities

SCREW SIZE	M3.5, Terminal screw, Control circuit cables M10, Terminal screw, Main connections
SCREWDRIVER SIZE	2, Terminal screw, Control circuit cables, Pozidriv screwdriver
TERMINAL CAPACITY (BUSBAR)	25 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 mm²
TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (0.75 - 2.5) mm², Control circuit cables 2 x (0.75 - 2.5) mm², Control circuit cables
TERMINAL CAPACITY (SOLID)	2 x (0.75 - 2.5) mm², Control circuit cables 1 x (0.75 - 2.5) mm², Control circuit cables
TERMINAL CAPACITY (SOLID/STRANDED AWG)	2/0 - 500 MCM, Main cables 18 - 14, Control circuit cables
TERMINAL CAPACITY (STRANDED WITH CABLE LUG)	70 - 240 mm²
TIGHTENING TORQUE	1.2 Nm, Screw terminals, Control circuit cables 24 Nm, Main cable connection screw/bolt
WIDTH ACROSS FLATS	16 mm

Resources

BROCHURES	eaton-product-brochure-dilmdilh-power-contactors-brochure-br034010en-en-us.pdf
CHARACTERISTIC CURVE	eaton-contactors-component-dilm-characteristic-curve-003.eps eaton-contactors-short-time-loading-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve-002.eps eaton-contactors-component-dilm-characteristic-curve.eps
DECLARATIONS OF CONFORMITY	eaton-contactor-declaration-of-conformity-uk251102en.pdf eaton-contactor-declaration-of-conformity-eu250619en.pdf
DRAWINGS	eaton-contactors-mounting-dilm-dimensions.eps eaton-contactors-mounting-dilm-dimensions-002.eps eaton-contactors-dilm-dimensions-007.eps eaton-contactors-dilm-3d-drawing-004.eps eaton-contactors-mounting-dilm-3d-drawing-002.eps
ECAD MODEL	DA-CE-ETN.DILM250_22(RA250)
INSTALLATION INSTRUCTIONS	eaton-contactors-dilm250-to-dilm500-il03406002z.pdf
MCAD MODEL	eaton-iec-contactors-mcad-drawings-dilm250-300-s22.dwg eaton-iec-contactors-mcad-3d-models-dilm250-300-s22.stp

PEP ECO-PASSPORT	eaton-iec-contactors-pep-eato-00135-v0101-en.pdf
SYSTEM OVERVIEW	eaton-contactors-system55-dilm-explosion-drawing.eps
WIRING DIAGRAMS	eaton-contactors-contact-dilm-wiring-diagram-004.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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