DATASHEET - DILDC300/22(RDS250)



DC contactor, 2 N/O, 2 NC, 1000 V: 300 A, RDS 250: 110 - 250 V 40 - 60 Hz/110 - 350 V DC, AC and DC operation



Part no. DILDC300/22(RDS250)

Catalog No. 183314

Alternate Catalog XTCE300DCM22A

No

Delivery program

Delivery program			
Product range			Contactors
Application			DC contactor
Subrange			Comfort devices greater than 170 A
Instructions			DILDC contactors feature an electronic arc suppression system. Because of this, it is important not to exceed any technical data limits in general – especially the making and breaking capacity limits. Opening the device will immediately void the warranty. integrated suppressor circuit in actuating electronics
Connection technique			Screw connection
Rated operational current, open			
DC-1			
Notes			I _e at 60 °C
1000 V	le	Α	300
Can be combined with auxiliary contact			DILM820-XHI
Actuating voltage			RDS 250: 110 - 250 V 40 - 60 Hz/110 - 350 V DC
Voltage AC/DC			AC and DC operation
Contacts			
N/O = Normally open			2 N/O
N/C = Normally closed			2 NC
Auxiliary contacts			
possible variants at auxiliary contact module fitting options			on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA
Side mounting auxiliary contacts			DILM820 XH111(V)-SI

Technical data

General

		EN60947-4-1, EN60947-5-1
Operations	x 10 ⁶	1
Operations	x 10 ⁶	1
Operations/h		1000
Operations/h		1000
Operations/h		100
		Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
	°C	-40 - +70
	°C	- 40 - + 40
	°C	- 40 - + 80
	Operations/h Operations/h	Operations x 10 ⁶ Operations/h Operations/h Operations/h °C °C

Man contacts Man				
Man contacts Man	Mounting position			
Main contacts	Mechanical shock resistance (IEC/EN 60068-2-27)			
Main contacts				
No carried				
Autoliary contacts NC contact NC centact Degree of Protection Protection against direct contact when actuated from from (INSIZIVA) Albitude Albitude Weight Weight Weight Remaind capacity main cable Remaind capacity main cable Sandord with cable log Sandord vinith cable log Sandord vinith cable log Sandord with cable log Sandord vinith cab			n	10
No Contact	,		9	
NUC contact Degree of Protection Protection against direct contact when actuated from front (EN SIZEYA) 100 10			a	10
Degree of Pretection Pretection against direct contact when actuated from from IEIN 50274 Althouse Althouse Weight Workpit Workpit Possible William Loads Stranded with cable log Solid or stranded Bushar Connection accounts of creat teaching Solid or stranded Sol				
Protection against direct cantact when actuated from front [EN 93274) Representation and afterwands as a feguarded against a coldental contact with fingers or backs of himst ba			9	
Medical				
Weight Key 7.5 Terminal capacity main cable 7.5 7.5 Bracklik with cable lug mar ² 50-240 Stranded with cable lug Mar ² 50-240 Solid or standed Wolf mar ² 50-280 Bisshar More than the cable connection screw/bot MIO 400 Tightening torque No 10 400 Flexible with ferrule mar ² 1 x 0.75 - 25) 2.5 Solid or standed mar ² 1 x 0.75 - 25) 2.5 Solid or standed mar ² 2 x 118 - 12 2.5 Cortrol circuit cable connection screw/bot mar ² 2 x 118 - 12 2.5 Solid or standed mar ² 2 x 118 - 12 2.5 Cortrol circuit cable connection screw/bot mar ² 2 x 118 - 12 2.5 Width across flats mar ² 2 x 118 - 12 2.5 Solid or standed mar ² 0.8 x 5.5 2.5 Main cable connection screw/bot mar ² 0.8 x 5.5 2.5 Solid or	Trotection against uneer contact when actuated from front (LN 30274)			
Neight	Altitude		m	Max. 2000
Terminal capacity main cable	Weight			
Feekble with cable lug	Weight		kg	7.5
Stranded with cable lug mm² 30 - 240 Suidi or stranded AWG 10 - 500 MCM Busbar Width mm² 40 - 600 MCM Busbar or stranded MID 4 Terminal capacity control circuit cables WID 24 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -	Terminal capacity main cable			
Standed with cable lug mm² 20 - 240 Solid or stranded AWG 10 - 500 MCM Busbar Mich 10 - 200 MCM Minic cable connection screw/holt MIG 40 - 200 MCM Tightening torque New 2 - 4 - 200 MCM Solid 1 × 10 75 - 2.5) 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.5) Solid or stranded New 2 × 10 75 - 2.	Flexible with cable lug		mm ²	50 - 240
Note	Stranded with cable lug		mm ²	50 - 240
Busbar Width Cable connection screw/bolt Width Cable connection screw/bolt MID Torninal capacky control circuit cables Nm 2 4 Solid Solid or stranded 1 x (0.75 - 2.5) 2 x (0.75 - 2.5) 3 x (0.75 - 2.5				1/n - 500 MCM
Main cable connection screw/bolt Nm 24 Tightening torque Nm 24 Terminal capacity control circuit cables xm² x² x² (x75 - 25) Solid xm² x² x² (x75 - 25) Fisible with ferrule xm² x² x² (x75 - 25) Solid or stranded xw x² x² x² (x75 - 25) Control circuit cable connection screw/bolt xw x²		Width		
Tightening torque Nm 24 Terminal capacity control circuit cables 1x (0.75 - 2.5) Solid 1x (0.75 - 2.5) Excible with forrule 2x (0.75 - 2.5) Solid or stranded 4x (0.75 - 2.5) Control circuit cable connection screw/bolt 3x (0.75 - 2.5) Tightening torque 3x (0.75 - 2.5) Tool 3x (0.75 - 2.5) Width across flats 3x (0.75 - 2.5) Control circuit cables 3x (0.75 - 2.5) Control circuit cables 3x (0.75 - 2.5) Control circuit cables 3x (0.75 - 2.5) Pozidiris screwdriver 3x (0.75 - 2.5) Rated insulation voltage 3x (0.75 - 2.5) Main cable 3x (0.75 - 2.5) State dimulse withstand voltage 3x (0.75 - 2.5) Main cable 3x (0.75 - 2.5) State dimulse withstand voltage 3x (0.75 - 2.5) Name actageny/pollution degree 1x (0.75 - 2.5) Rated operational voltage 1x (0.75 - 2.5) Sale toolstion to Eti 61140 1x (0.75 - 2.5) Between control inputs and main contacts 1x (0.75 - 2.5)		vviutii	111111	
Terminal capacity control circuit cables			Nm	
			IVIII	24
Flexible with ferrule			2	1(0.75 - 2.5)
Solid or stranded	50110		mm ²	
Control circuit cable connection screw/bolt Nm 1.2 Tightening torque Nm 1.2 Tool Videnacross flats Mmm 16 Viden across flats mm 16 Control circuit cables Size 2 Pozidriv screwdriver Size 2 Standard screwdriver Winp 0.8 x 5.5 1 x 6 Rated impulse withstand voltage Uinp V 800 Overvoltage category/pollution degree Ui, V DO 1000 Rated operational voltage Ue V DO 1000 Safe isolation to EN 61140 V DO 1000 Between control inputs and main contacts V DO 1000 Between the contacts and main contacts V DO 1000 Making capacity V DO 1000 Breaking capacity A A 450 220 V 230 V A 450 380 V 400 V A 450 660 V 690 V A 450	Flexible with ferrule		mm ²	
Nm 1.2 Tool Main cable ————————————————————————————————————	Solid or stranded		AWG	2 x (18 - 12)
Tool Main cable Width across flats Control circuit cables Pozidriv screwdriver Standard screwdriver Name on the conducting paths Rated impulse withstand voltage Overvoltage category/pollution degree Rated operational voltage Nated operational voltage Between control inputs and main contacts Between auxiliary contacts and main contacts Between auxiliary contacts and main contacts Making capacity Braking capacity Braking capacity Browner 220 V 230 V 380 V 400 V 500 V 400 R 450 R 4	Control circuit cable connection screw/bolt			M3.5
Main cable mm 16 Control circuit cables Size 2 Pozidriv screwdriver Size 2 Standard screwdriver mm 0.8x 5.5 1 x 6 Main conducting paths mm 0.8x 5.5 1 x 6 Rated impulse withstand voltage U _{imp} V 8000 Overvoltage category/pollution degree III/3 III/3 Rated operational voltage U _i V DC 1000 Rated operational voltage U _e V DC 1000 Safe isolation to EN 61140 V 1000 Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 Making capacity A 450 Breaking capacity A 450 220 V 230 V A 450 380 V 400 V A 450 500 V A 450 680 V 690 V A 450	Tightening torque		Nm	1.2
Width across flats mm 16 Control circuit cables Foodidriv screwdriver Size 2 Standard screwdriver Size 2 Standard screwdriver mm 0.8x 5.5 1x 6 Bated insulation voltage V 8000 Overvoltage category/pollution degree III/3 III/3 Rated insulation voltage Ui V DC 1000 Rated operational voltage V 1000 Safe isolation to EN 61140 V 1000 Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 Making capacity A 450 Breaking capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 890 V A 450	Tool			
Control circuit cables Size 2 Pozidriv screwdriver Size 2 Standard screwdriver mm 0.8x 5.5 1x 6 Main conducting paths ***********************************	Main cable			
Pozidriv screwdriver Size 2	Width across flats		mm	16
Standard screwdriver mm 0.8 x 5.5 1 x 6 Main conducting paths Rated impulse withstand voltage U _{imp} V 8000 Overvoltage category/pollution degree III/3 III/3 Rated insulation voltage U _i V DC 1000 Rated operational voltage V DC 1000 Safe isolation to EN 61140 V DC 1000 Between control inputs and main contacts V DC 1000 Between auxiliary contacts and main contacts V DC 1000 Making capacity V DC 1000 Breaking capacity A 450 450 220 V 230 V A 450 450 380 V 400 V A 450 450 500 V A 450 450 660 V 690 V A 450 450	Control circuit cables			
Nation Conducting paths Rated impulse withstand voltage U _{imp} V 8000 Overvoltage category/pollution degree III/3 Rated insulation voltage U _i V DC 1000 Rated operational voltage U _e V DC 1000 Safe isolation to EN 61140 V 1000 Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 Making capacity A 450 Breaking capacity A 450 220 V 230 V A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450	Pozidriv screwdriver		Size	2
Main conducting paths Rated impulse withstand voltage U _{imp} V Down (100) 8000 Overvoltage category/pollution degree III/3 Rated insulation voltage U _i V DC 1000 Rated operational voltage V DC 1000 Safe isolation to EN 61140 V DC 1000 Between control inputs and main contacts V 1000 between auxiliary contacts and main contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 4 50 A 450 4 50 A 450 4 50 A 450 4 50 A 450 500 V A 450 4 50 A 450 4 50 A 450 500 V A 450 660 V 690 V A 450	Standard screwdriver		mm	
Rated impulse withstand voltage Uinp V 8000 Overvoltage category/pollution degree III/3 Rated insulation voltage Ui V DC 1000 Rated operational voltage Ue V DC 1000 Safe isolation to EN 61140 V 1000 Between control inputs and main contacts V 1000 between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 220 V 230 V A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450	Main conducting paths			1x6
Overvoltage category/pollution degree III/3 Rated insulation voltage Ui V DC 1000 Safe isolation to EN 61140 V DO 1000 Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 A 450 A 450 A 450		U:	V	8000
Rated insulation voltage Ui V DC 1000 Safe isolation to EN 61140 V 1000 Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 between the contacts V 1000 Making capacity V 1000 Breaking capacity A 450 380 V 400 V A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450		∼imp		
Rated operational voltage Ue V DC 1000 Safe isolation to EN 61140 V 1000 Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 4 450 4 450 500 V A 450 4 450 4 450 4 450 500 V A 450		H:	V DC	
Safe isolation to EN 61140 Image: Control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 A 450 A 450				
Between control inputs and main contacts V 1000 Between auxiliary contacts and main contacts V 1000 between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450		Ue	V DC	1000
Between auxiliary contacts and main contacts V 1000 between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 A 450 A 450			.,	
between the contacts V 1000 Making capacity A 450 Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 A 450 A 450				
Making capacity A 450 Breaking capacity				
Breaking capacity A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450 A 450 A 450				
220 V 230 V A 450 380 V 400 V A 450 500 V A 450 660 V 690 V A 450			Α	450
380 V 400 V A 450 500 V A 450 660 V 690 V A 450	Breaking capacity			
500 V A 450 660 V 690 V A 450				
660 V 690 V A 450				
	500 V		Α	450
1000 V A 450			Α	
	1000 V		Α	450

Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination	D 4000 1/D0		450/ 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
400 V DC 690 V DC	gR 1000 VDC		450 (max. short-circuit current 6 kA)
	gR 1000 VDC gR 1000 VDC		450 (max. short-circuit current 6 kA) 450 (max. short-circuit current 6 kA)
1000 V DC Type "1" coordination	gh 1000 VDC	A	450 (IIIdx. Short-chicuit current o kA)
400 V DC	gR 1000 VDC	^	450 (max. short-circuit current 30 kA)
690 V DC	gR 1000 VDC		450 (max. short-circuit current 30 kA)
1000 V DC	gR 1000 VDC		450 (max. short-circuit current 30 kA)
DC	gii 1000 VDC	А	430 (max. Short-chicuit current 30 km)
Rated operational current, open			
DC-1			
Notes			I _e at 60 °C
1000 V	I _e	A	300
Current heat loss	Ū		
1 pole, at I _{th}		W	18
Magnet systems			
Voltage tolerance			
U_S			110 - 250 V 40-60 Hz
AC assessed	Dieleum		110 - 350 V DC
AC operated	Pick-up		0.7 x U _{S min} - 1.15 x U _{S max}
DC operated	Pick-up		0.7 x U _{S min} - 1.15 x U _{S max}
AC operated	Drop-out		0.2 x U _{S max} - 0.6 x U _{S min}
DC operated	Drop-out		0.2 x U _{S max} - 0.6 x U _{S min}
Actuation directly from PLC			
U _C			24 V DC
U _C min - max			15 - 31,2 V DC
Power consumption of the coil in a cold state and 1.0 x $\ensuremath{\text{U}_{\text{S}}}$			
Note on power consumption			Control transformer with $u_k \le 6\%$
Pull-in power	Pick-up	VA	600
Pull-in power	Pick-up	W	550
Sealing power	Sealing	VA	18
Sealing power	Sealing	W	9.5
Duty factor		% DF	100
Changeover time at 100 % U_S (recommended value)			
Main contacts			
Closing delay		ms	80
Opening delay		ms	40
PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2)			
High		V	15
Low		V	5
Electromagnetic compatibility (EMC)			
Electromagnetic compatibility			This product is designed for operation in industrial environments (environment A). Its use in residential environments (environment B) may cause radio-frequency interference, requiring additional noise suppression measures.
Rating data for approved types			
Switching capacity			
Maximum motor rating			
Single-phase			
General use		Α	300
Auxiliary contacts			
Pilot Duty			
AC operated			A600
DC operated			P300
General Use			
AC		V	600

AC	А	15
DC	V	250
DC	Α	1

Design verification as per IEC/EN 61439

Design vermoation as per 120/214 01755			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	300
Heat dissipation per pole, current-dependent	P _{vid}	W	18
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	9
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-40
Operating ambient temperature max.		°C	70
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			
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.

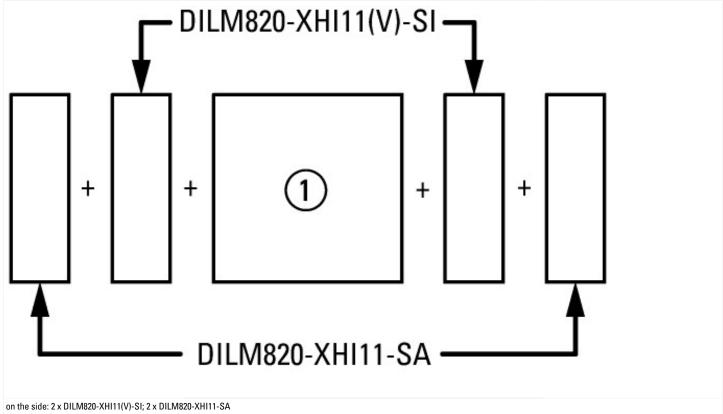
Technical data ETIM 8.0

Low-voltage industrial components (EG000017) / Power contactor, DC switching (EC002552)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, d.c. switching (ecl@ss10.0.1-27-37-10-18 [ACN974011])			
Rated control supply voltage Us at AC 50HZ		V	110 - 250
Rated control supply voltage Us at AC 60HZ		V	110 - 250
Rated control supply voltage Us at DC		V	110 - 350
Voltage type for actuating			AC
Rated operation power at DC-3 / DC-5 at 440 V		kW	0
Rated operation current le at DC-3 / DC-5 at 440 V		Α	0
Modular version			No
Number of auxiliary contacts as normally open contact			2
Number of auxiliary contacts as normally closed contact			2
Type of electrical connection of main circuit			Connection rail
Number of normally closed contacts as main contact			0

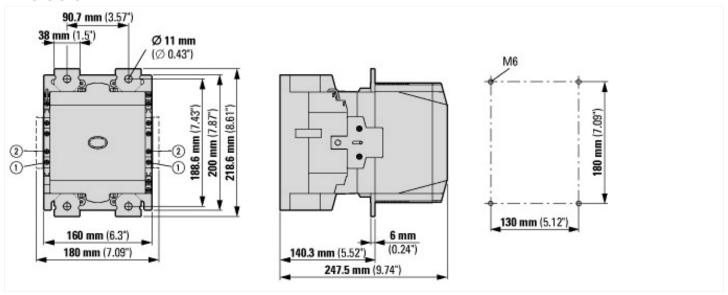
Approvals

Product Standards	IEC/EN 60947-4-1; UL508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E338590
UL Category Control No.	NRNT
CSA File No.	012528
CSA Class No.	C321124
North America Certification	UL listed, CSA certified
Specially designed for North America	No

Characteristics



Dimensions



Additional product information (links)

Motor starters and "Special Purpose Ratings" for the North American market	http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf
Switchgear of Power Factor Correction Systems	http://www.moeller.net/binary/ver_techpapers/ver934en.pdf

X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	http://www.moeller.net/binary/ver_techpapers/ver938en.pdf
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	http://www.moeller.net/binary/ver_techpapers/ver944en.pdf
Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors	http://www.moeller.net/binary/ver_techpapers/ver949en.pdf
Switchgear for Luminaires	http://www.moeller.net/binary/ver_techpapers/ver955en.pdf
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	http://www.moeller.net/binary/ver_techpapers/ver956en.pdf
The Interaction of Contactors with PLCs	http://www.moeller.net/binary/ver_techpapers/ver957en.pdf
Busbar Component Adapters for modern Industrial control panels	http://www.moeller.net/binary/ver_techpapers/ver960en.pdf