

Contactor, 3 pole, 380 V 400 V 18.5 kW, 1 N/O, 1 NC, RDC 24: 24 - 27 V DC, DC operation, Push in terminals



Part no. DILM38-11(RDC24)-PI
Catalog No. 199298
Alternate Catalog No. XTCEPI038C11TD
EL-Nummer (Norway) 4190474

Delivery program

Product range			Contactors
Application			Contactors for Motors
Subrange			Contactors up to 170 A, 3 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces NAC-3: Normal AC induction motors: starting, switch off during running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
Notes			Not suitable for motors with efficiency class IE3.
Connection technique			Push in terminals
Number of poles			3 pole

Rated operational current

AC-3			
Notes			At maximum permissible ambient temperature (open.)
380 V 400 V	I _e	A	38
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	I _{th} = I _e	A	45
enclosed	I _{th}	A	36
Conventional free air thermal current, 1 pole			
open	I _{th}	A	100
enclosed	I _{th}	A	90

Max. rating for three-phase motors, 50 - 60 Hz

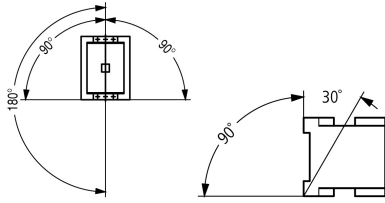
AC-3			
220 V 230 V	P	kW	11
380 V 400 V	P	kW	18.5
660 V 690 V	P	kW	21
AC-4			
220 V 230 V	P	kW	4
380 V 400 V	P	kW	7
660 V 690 V	P	kW	10

Contacts

N/O = Normally open			1 N/O
N/C = Normally closed			1 NC
Contact sequence			
Can be combined with auxiliary contact			DILM32-XHI...-PI DILA-XHI(V)...-PI
Actuating voltage			RDC 24: 24 - 27 V DC
Voltage AC/DC			DC operation
Connection to SmartWire-DT			yes in conjunction with DIL-SWD SmartWire DT contactor module
Instructions			Contacts to EN 50 012. with mirror contact. integrated suppressor circuit in actuating electronics
Frame size			2

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
DC operated	Operations	x 10 ⁶	10
Operating frequency, mechanical			
DC operated	Operations/h		5000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open	°C		-25 - +60
Enclosed	°C		- 25 - 40
Storage	°C		- 40 - 80
Mounting position			
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact	g		10
Auxiliary contacts			
N/O contact	g		7
N/C contact	g		5
Mechanical shock resistance (IEC/EN 60068-2-27) when tabletop-mounted			
Half-sinusoidal shock, 10 ms			
Main contacts			
N/O contact	g		6.9
Auxiliary contacts			
N/O contact	g		5.3
N/C contact	g		3.5
Degree of Protection			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude	m		Max. 2000
Weight			
DC operated	kg		0.55
Spring-loaded terminal connection			
Tool			
Standard screwdriver			3.0 x 0.5
Push-in terminals			
Terminal capacity main cable			
Solid	mm ²		1 x (1 - 6) 2 x (1 - 6)
flexible	mm ²		1 x (1 - 10) 2 x (1 - 6)
flexible with ferrules	mm ²		1 x (1 - 6) 2 x (1 - 4)
flexible with ultrasonic welded busbar end	mm ²		1 x (1 - 10) 2 x (1 - 6)
flexible with uninsulated wire end ferrule	mm ²		1 x (1 - 6) 2 x (1 - 6)
Solid or stranded	AWG		18 - 8
Stripping length	mm		12
Standard screwdriver			3.0 x 0.5
Terminal capacity control circuit cables			
Solid	mm ²		1 x (0,5 - 2,5)

			2 x (0,5 - 2,5)
flexible	mm ²		1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible with ferrules	mm ²		1 x (0,5 - 1,5) 2 x (0,5 - 1,5)
flexible with ultrasonic welded busbar end	mm ²		1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible with uninsulated wire end ferrule	mm ²		1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
Solid or stranded	AWG		20 - 14
Stripping length	mm		10
Tool			
Standard screwdriver	mm		3.0 x 0.5

Main conducting paths

Rated impulse withstand voltage	U _{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U _i	V AC	690
Rated operational voltage	U _e	V AC	690
Safe isolation to EN 61140			
between coil and contacts		V AC	400
between the contacts		V AC	400
Making capacity (p.f. to IEC/EN 60947)			
	Up to 690 V	A	384
Breaking capacity			
220 V 230 V		A	320
380 V 400 V		A	320
500 V		A	320
660 V 690 V		A	180
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	50
690 V	gG/gL 690 V	A	35
Type "1" coordination			
400 V	gG/gL 500 V	A	125
690 V	gG/gL 690 V	A	63

AC

AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	I _{th} = I _e	A	45
at 50 °C	I _{th} = I _e	A	43
at 55 °C	I _{th} = I _e	A	42
at 60 °C	I _{th} = I _e	A	40
enclosed	I _{th}	A	36
Conventional free air thermal current, 1 pole			
open	I _{th}	A	100
enclosed	I _{th}	A	90
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.)
220 V 230 V	I _e	A	38
240 V	I _e	A	38
380 V 400 V	I _e	A	38

415 V	I _e	A	38
440V	I _e	A	38
500 V	I _e	A	38
660 V 690 V	I _e	A	22.5
Motor rating	P	kWh	
220 V 230 V	P	kW	11
240V	P	kW	12
380 V 400 V	P	kW	18.5
415 V	P	kW	20
440 V	P	kW	21
500 V	P	kW	24
660 V 690 V	P	kW	21
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I _e	A	15
240 V	I _e	A	15
380 V 400 V	I _e	A	15
415 V	I _e	A	15
440 V	I _e	A	15
500 V	I _e	A	15
660 V 690 V	I _e	A	12
Motor rating	P	kWh	
220 V 230 V	P	kW	4
240 V	P	kW	4.5
380 V 400 V	P	kW	7
415 V	P	kW	7.5
440 V	P	kW	8
500 V	P	kW	9
660 V 690 V	P	kW	10

Current heat loss

3 pole, at I _{th} (60°)		W	10.3
Current heat loss at I _e to AC-3/400 V		W	9.3
Impedance per pole		mΩ	2.7

Magnet systems

Voltage tolerance			
DC operated	Pick-up	x U _c	0.7 - 1.2
Notes			RDC 24 (U _{min} 24 V DC/U _{max} 27 V DC) Example: U _S = 0.7 x U _{min} - 1.2 x U _{max} / U _S = 0.7 x 24V - 1.2 x 27V DC
DC operated	Drop-out	x U _c	0.15 - 0.6
Notes			at least smoothed two-phase bridge rectifier or three-phase rectifier
Power consumption of the coil in a cold state and 1.0 x U _S			
DC operated	Pick-up	W	12
DC operated	Sealing	W	0,9
Duty factor		% DF	100
Changeover time at 100 % U _S (recommended value)			
Main contacts			
DC operated		ms	
Closing delay		ms	
Closing delay		ms	47
Opening delay		ms	
Opening delay		ms	30
Arcing time		ms	10

Electromagnetic compatibility (EMC)

Emitted interference			According to EN 60947-1
Interference immunity			According to EN 60947-1

Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	10
230 V 240 V		HP	10
460 V 480 V		HP	20
575 V 600 V		HP	30
Single-phase			
115 V 120 V		HP	3
230 V 240 V		HP	5
General use		A	40
Auxiliary contacts			
General Use			
AC		V	600
AC		A	10
DC		V	250
DC		A	1
Short Circuit Current Rating		SCCR	
Basic Rating			
SCCR		kA	5
max. Fuse		A	125
max. CB		A	125

Design verification as per IEC/EN 61439

Technical data for design verification			
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60

Technical data ETIM 8.0

Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])			
Rated control supply voltage Us at AC 50HZ		V	0 - 0
Rated control supply voltage Us at AC 60HZ		V	0 - 0
Rated control supply voltage Us at DC		V	27 - 27
Voltage type for actuating			DC
Rated operation current Ie at AC-1, 400 V		A	45
Rated operation current Ie at AC-3, 400 V		A	38
Rated operation power at AC-3, 400 V		kW	18.5
Rated operation current Ie at AC-4, 400 V		A	15
Rated operation power at AC-4, 400 V		kW	7
Rated operation power NEMA		kW	0
Modular version			No
Number of auxiliary contacts as normally open contact			1
Number of auxiliary contacts as normally closed contact			1
Type of electrical connection of main circuit			Spring clamp connection
Number of normally closed contacts as main contact			0
Number of normally open contacts as main contact			3

Approvals

Product Standards		IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.		E29096

UL Category Control No.		NLDX
CSA File No.		012528
CSA Class No.		2411-03, 3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No

Characteristics

- 1: Overload relay
- 2: Suppressor
- 3: Auxiliary contact modules

Switching conditions for non-motor consumers, 3 pole, 4 pole

Operating characteristics

Non inductive and slightly inductive loads

Electrical characteristics

Switch on: 1 x rated operational current

Switch off: 1 x rated operational current

Utilization category

100 % AC-1

Typical examples of application

Electric heat

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 Cable 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