



Contactor, 4 pole, 45 A, 1 NC, 24 V DC, DC operation



Part no. **DILMP45-01(RDC24)**
 Catalog No. **118916**
 Alternate Catalog No. **XTCF045C01TD**
 EL-Nummer (Norway) **4110219**

Delivery program

Product range			Contactors
Application			Contactors for 4 pole electric consumers
Subrange			Contactors up to 200 A, 4 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces NAC-3: Normal AC induction motors: starting, switch off during running
Connection technique			Screw terminals
Number of poles			4 pole
Rated operational current			
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
at 40 °C	$I_{th} = I_e$	A	45
at 50 °C	$I_{th} = I_e$	A	41
at 55 °C	$I_{th} = I_e$	A	40
at 60 °C	$I_{th} = I_e$	A	39
Contacts			
N/C = Normally closed			1 NC
Contact sequence			
For use with			DILM32-XHI(C)... DILA-XHI(V)(C)...
Actuating voltage			24 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. integrated suppressor circuit in actuating electronics with mirror contact.

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	$\times 10^6$	10
DC operated	Operations	$\times 10^6$	10
Operating frequency, mechanical			
AC operated	Operations/h		5000
DC operated	Operations/h		5000
Climatic proofing			
Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature			
Open		°C	-25 - +60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			

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
Degree of Protection			IP00
Altitude	m		Max. 2000
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Stripping length	mm		10
Terminal capacity main cable			
Solid	mm ²		1 x (0.75 - 16) 2 x (0.75 - 10)
Flexible with ferrule	mm ²		1 x (0.75 - 16) 2 x (0.75 - 10)
Stranded	mm ²		1 x 16
Solid or stranded	AWG		18 - 6
Terminal screw			M5
Tightening torque	Nm		3
Stripping length	mm		10
Terminal capacity control circuit cables			
Solid	mm ²		1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule	mm ²		1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded	AWG		18 - 14
Stripping length	mm		10
Terminal screw			M3.5
Tightening torque	Nm		1.2
Tool			
Main cable			
Pozidriv screwdriver	Size		2
Standard screwdriver	mm		0.8 x 5.5 1 x 6
Control circuit cables			
Pozidriv screwdriver	Size		2
Standard screwdriver	mm		0.8 x 5.5 1 x 6

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	440
between the contacts		V AC	440
Making capacity (cos φ)	Up to 690 V	A	350 According to IEC/EN 60947
Breaking capacity			
220 V 230 V		A	250
380 V 400 V		A	250

500 V		A	250
660 V 690 V		A	144
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	35
690 V	gG/gL 690 V	A	35
Type "1" coordination			
400 V	gG/gL 500 V	A	100
690 V	gG/gL 690 V	A	50

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	41
at 55 °C	$I_{th} = I_e$	A	40
at 60 °C	$I_{th} = I_e$	A	39
enclosed	I_{th}	A	36
Conventional free air thermal current, 1 pole			
open	I_{th}	A	117
enclosed	I_{th}	A	105
Motor rating			
	P	kWh	
220/230 V	P	kW	16
240 V	P	kW	18
380/400 V	P	kW	28
415 V	P	kW	31
440 V	P	kW	33
500 V	P	kW	37
690 V	P	kW	49

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	25
240 V	I_e	A	25
380 V 400 V	I_e	A	25
415 V	I_e	A	25
440V	I_e	A	25
500 V	I_e	A	25
660 V 690 V	I_e	A	15
Motor rating			
	P	kWh	
220 V 230 V	P	kW	7.5
240V	P	kW	8.5
380 V 400 V	P	kW	11
415 V	P	kW	14.5
440 V	P	kW	15.5
500 V	P	kW	17.5
660 V 690 V	P	kW	14

DC

Rated operational current, open			
DC-1			
60 V	I_e	A	45

110 V	I _e	A	45
220 V	I _e	A	45

Current heat loss

3 pole, at I _{th} (60°)		W	13.2
Impedance per pole		mΩ	2.7

Magnet systems

Voltage tolerance			
AC operated 50/60 Hz		x U _c	0.85 - 1.1
DC operated	Pick-up	x U _c	At least double-pulse bridge rectifier - 0.7 - 1.2
DC operated	Drop-out	x U _c	At least double-pulse bridge rectifier - 0.2 - 0.6
Power consumption of the coil in a cold state and 1.0 x U _S			
Notes on DC actuation			
DC operated	Pick-up	W	12
DC operated	Sealing	W	0.9
Duty factor			
Changeover time at 100 % U _S (recommended value)			
Main contacts			
DC operated		ms	
Notes on DC actuation			
Closing delay		ms	47
Opening delay		ms	30
Arcing time		ms	10
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).		mA	≤ 1

Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	7.5
230 V 240 V		HP	10
460 V 480 V		HP	15
575 V 600 V		HP	20
Single-phase			
115 V 120 V		HP	2
230 V 240 V		HP	5
General use		A	40
Auxiliary contacts			
Pilot Duty			
AC operated			A600
DC operated			P300
General Use			
AC		V	600
AC		A	10
DC		V	250
DC		A	1
Short Circuit Current Rating			
Basic Rating			
SCCR		kA	5
max. Fuse		A	125
max. CB		A	125
480 V High Fault			
SCCR (fuse)		kA	10/100

max. Fuse	A	125/70 Class J
SCCR (CB)	kA	10/65
max. CB	A	50/32
600 V High Fault		
SCCR (fuse)	kA	10/100
max. Fuse	A	125/100 Class J
SCCR (CB)	kA	10/22
max. CB	A	50/32
Special Purpose Ratings		
Electrical Discharge Lamps (Ballast)		
480V 60Hz 3phase, 277V 60Hz 1phase	A	40
600V 60Hz 3phase, 347V 60Hz 1phase	A	40
Incandescent Lamps (Tungsten)		
480V 60Hz 3phase, 277V 60Hz 1phase	A	40
600V 60Hz 3phase, 347V 60Hz 1phase	A	40
Resistance Air Heating		
480V 60Hz 3phase, 277V 60Hz 1phase	A	40
600V 60Hz 3phase, 347V 60Hz 1phase	A	40
Refrigeration Control (CSA only)		
LRA 480V 60Hz 3phase	A	240
FLA 480V 60Hz 3phase	A	40
LRA 600V 60Hz 3phase	A	180
FLA 600V 60Hz 3phase	A	30
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)		
LRA 480V 60Hz 3phase	A	150
FLA 480V 60Hz 3phase	A	25
Elevator Control		
200V 60Hz 3phase	HP	3
200V 60Hz 3phase	A	11
240V 60Hz 3phase	HP	5
240V 60Hz 3phase	A	15.2
480V 60Hz 3phase	HP	10
480V 60Hz 3phase	A	14
600V 60Hz 3phase	HP	15
600V 60Hz 3phase	A	17

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	45
Heat dissipation per pole, current-dependent	P_{vid}	W	4.4
Equipment heat dissipation, current-dependent	P_{vid}	W	13.2
Static heat dissipation, non-current-dependent	P_{vs}	W	0.9
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
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 7.0

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 U_s at AC 50HZ	V	0 - 0
Rated control supply voltage U_s at AC 60HZ	V	0 - 0
Rated control supply voltage U_s at DC	V	24 - 27
Voltage type for actuating		DC
Rated operation current I_e at AC-1, 400 V	A	45
Rated operation current I_e at AC-3, 400 V	A	25
Rated operation power at AC-3, 400 V	kW	11
Rated operation current I_e at AC-4, 400 V	A	15
Rated operation power at AC-4, 400 V	kW	7
Rated operation power NEMA	kW	11
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		1
Type of electrical connection of main circuit		Screw connection
Number of normally closed contacts as main contact		0
Number of main contacts as normally open contact		4

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

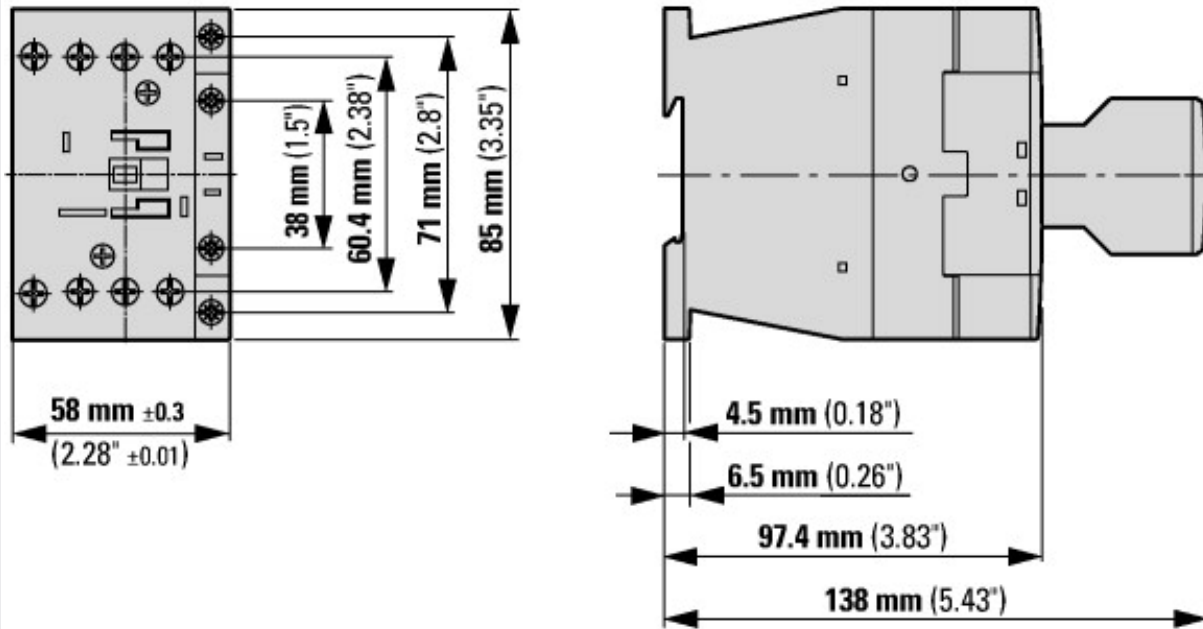
Characteristics





Switching conditions for 4 pole, non-motor loads
 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



Contacteur with auxiliary contact module



distance at side to earthed parts: 6 mm

DILMP32
DILMP45

Assets (links)

Declaration of CE Conformity

00003050

Instruction Leaflets

IL03407049Z2018_05

Additional product information (links)

IL03407049Z (AWA2100-2356) 4 pole contactors

IL03407049Z (AWA2100-2356) 4 pole contactors ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407049Z2018_05.pdf

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