

Contactor, 3 pole, 380 V 400 V 18.5 kW, 1 N/O, 1 NC, 230 V 50/60 Hz, AC operation, Push in terminals



**Part no.** DILM38-11(230V50/60HZ)-PI  
**Catalog No.** 199672  
**Alternate Catalog No.** XTCEPI038C11G2  
**EL-Nummer (Norway)** 4190456

**Delivery program**

Product range			Contactors
Application			Contactors for Motors
Subrange			Contactors up to 95 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**

<b>AC-3</b>			
Notes			At maximum permissible ambient temperature (open.)
380 V 400 V	$I_e$	A	38
<b>AC-1</b>			
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**

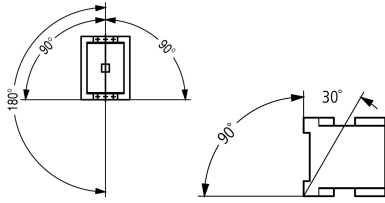
<b>AC-3</b>			
220 V 230 V	P	kW	11
380 V 400 V	P	kW	18.5
660 V 690 V	P	kW	21
<b>AC-4</b>			
220 V 230 V	P	kW	4
380 V 400 V	P	kW	7
660 V 690 V	P	kW	10

**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			230 V 50/60 Hz
Voltage AC/DC			AC operation
Connection to SmartWire-DT			no
<b>Instructions</b>			Contacts to EN 50 012. with mirror contact.
Frame size			2

## Technical data

### General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	$\times 10^6$	10
Operating frequency, mechanical			
AC 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			
AC operated	kg		0.44
Spring-loaded terminal connection			
Tool			
Standard screwdriver			3.0 x 0.5
Push-in terminals			
Terminal capacity main cable			
Solid	mm <sup>2</sup>		1 x (1 - 6) 2 x (1 - 6)
flexible	mm <sup>2</sup>		1 x (1 - 10) 2 x (1 - 6)
flexible with ferrules	mm <sup>2</sup>		1 x (1 - 6) 2 x (1 - 4)
flexible with ultrasonic welded busbar end	mm <sup>2</sup>		1 x (1 - 10) 2 x (1 - 6)
flexible with uninsulated wire end ferrule	mm <sup>2</sup>		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 <sup>2</sup>		1 x (0,5 - 2,5)

			2 x (0,5 - 2,5)
flexible	mm <sup>2</sup>		1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible with ferrules	mm <sup>2</sup>		1 x (0,5 - 1,5) 2 x (0,5 - 1,5)
flexible with ultrasonic welded busbar end	mm <sup>2</sup>		1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible with uninsulated wire end ferrule	mm <sup>2</sup>		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 <sub>imp</sub>	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U <sub>i</sub>	V AC	690
Rated operational voltage	U <sub>e</sub>	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	63
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 <sub>th</sub> = I <sub>e</sub>	A	45
at 50 °C	I <sub>th</sub> = I <sub>e</sub>	A	43
at 55 °C	I <sub>th</sub> = I <sub>e</sub>	A	42
at 60 °C	I <sub>th</sub> = I <sub>e</sub>	A	40
enclosed	I <sub>th</sub>	A	36
Conventional free air thermal current, 1 pole			
open	I <sub>th</sub>	A	100
enclosed	I <sub>th</sub>	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 <sub>e</sub>	A	38
240 V	I <sub>e</sub>	A	38
380 V 400 V	I <sub>e</sub>	A	38

415 V	I <sub>e</sub>	A	38
440V	I <sub>e</sub>	A	38
500 V	I <sub>e</sub>	A	38
660 V 690 V	I <sub>e</sub>	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 <sub>e</sub>	A	15
240 V	I <sub>e</sub>	A	15
380 V 400 V	I <sub>e</sub>	A	15
415 V	I <sub>e</sub>	A	15
440 V	I <sub>e</sub>	A	15
500 V	I <sub>e</sub>	A	15
660 V 690 V	I <sub>e</sub>	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 <sub>th</sub> (60°)		W	10.3
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	9.3
Impedance per pole		mΩ	2.7

### Magnet systems

Voltage tolerance			
AC operated	Pick-up	x U <sub>c</sub>	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	x U <sub>c</sub>	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x U <sub>S</sub>			
50/60 Hz	Pick-up	VA	62 58
50/60 Hz	Sealing	VA	9.1 6.5
50/60 Hz	Sealing	W	2.1
Duty factor		% DF	100
Changeover time at 100 % U <sub>S</sub> (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	16 - 22
Opening delay		ms	8 - 14
Arcing time		ms	10
Lifespan, mechanical; Coil 50/60 Hz		x 10 <sup>6</sup>	Mechanical lifespan at 50 Hz approx. 30% lower than under → Technical data general

### 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	230 - 230
Rated control supply voltage Us at AC 60HZ		V	230 - 230
Rated control supply voltage Us at DC		V	0 - 0
Voltage type for actuating			AC
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	<a href="http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf">http://www.eaton.eu/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_3258146.pdf</a>
Switchgear of Power Factor Correction Systems	<a href="http://www.moeller.net/binary/ver_techpapers/ver934en.pdf">http://www.moeller.net/binary/ver_techpapers/ver934en.pdf</a>
X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	<a href="http://www.moeller.net/binary/ver_techpapers/ver938en.pdf">http://www.moeller.net/binary/ver_techpapers/ver938en.pdf</a>
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	<a href="http://www.moeller.net/binary/ver_techpapers/ver944en.pdf">http://www.moeller.net/binary/ver_techpapers/ver944en.pdf</a>
Effect of the Cable Capacitance of Long Control Cables on the Actuation of Contactors	<a href="http://www.moeller.net/binary/ver_techpapers/ver949en.pdf">http://www.moeller.net/binary/ver_techpapers/ver949en.pdf</a>
Switchgear for Luminaires	<a href="http://www.moeller.net/binary/ver_techpapers/ver955en.pdf">http://www.moeller.net/binary/ver_techpapers/ver955en.pdf</a>
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	<a href="http://www.moeller.net/binary/ver_techpapers/ver956en.pdf">http://www.moeller.net/binary/ver_techpapers/ver956en.pdf</a>
The Interaction of Contactors with PLCs	<a href="http://www.moeller.net/binary/ver_techpapers/ver957en.pdf">http://www.moeller.net/binary/ver_techpapers/ver957en.pdf</a>
Busbar Component Adapters for modern Industrial control panels	<a href="http://www.moeller.net/binary/ver_techpapers/ver960en.pdf">http://www.moeller.net/binary/ver_techpapers/ver960en.pdf</a>