

Contactor, 3 pole, 380 V 400 V 4 kW, 1 N/O, 1 NC, 230 V 50 Hz, 240 V 60 Hz, AC operation, Push in terminals



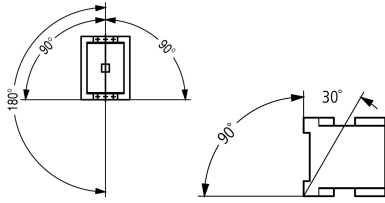
Part no. DILM11-11(230V50HZ,240V60HZ)-PI  
 Catalog No. 199269  
 Alternate Catalog No. XTCEPI011C11F  
 EL-Nummer (Norway) 4190436

**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 AC-3/AC-3e: Normal AC induction motors: Starting, switching off while running AC-4: Normal AC induction motors: starting, plugging, reversing, inching
Notes				Also suitable for motors with efficiency class IE3.
Connection technique				Push in terminals
Number of poles				3 pole
<b>Rated operational current</b>				
AC-3				
Notes				At maximum permissible ambient temperature (open.) Also tested according to AC-3e.
380 V 400 V	I <sub>e</sub>	A		11
AC-1				
Conventional free air thermal current, 3 pole, 50 - 60 Hz				
Open				
at 40 °C	I <sub>th</sub> = I <sub>e</sub>	A		40
enclosed	I <sub>th</sub>	A		32
Conventional free air thermal current, 1 pole				
open	I <sub>th</sub>	A		88
enclosed	I <sub>th</sub>	A		80
<b>Max. rating for three-phase motors, 50 - 60 Hz</b>				
AC-3				
220 V 230 V	P	kW		2.6
380 V 400 V	P	kW		4
660 V 690 V	P	kW		9
AC-4				
220 V 230 V	P	kW		1,5
380 V 400 V	P	kW		2,5
660 V 690 V	P	kW		3,6
<b>Contacts</b>				
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 Hz, 240 V 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	x 10 <sup>6</sup>	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		5.7
Auxiliary contacts			
N/O contact	g		3.4
N/C contact	g		3.4
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	112
Breaking capacity			
220 V 230 V		A	90
380 V 400 V		A	90
500 V		A	70
660 V 690 V		A	50
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	63
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 <sub>th</sub> = I <sub>e</sub>	A	40
at 50 °C	I <sub>th</sub> = I <sub>e</sub>	A	38
at 55 °C	I <sub>th</sub> = I <sub>e</sub>	A	37
at 60 °C	I <sub>th</sub> = I <sub>e</sub>	A	35
enclosed	I <sub>th</sub>	A	32
Conventional free air thermal current, 1 pole			
open	I <sub>th</sub>	A	88
enclosed	I <sub>th</sub>	A	80
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.) Also tested according to AC-3e.
220 V 230 V	I <sub>e</sub>	A	11
240 V	I <sub>e</sub>	A	11
380 V 400 V	I <sub>e</sub>	A	11

415 V	I <sub>e</sub>	A	11
440V	I <sub>e</sub>	A	11
500 V	I <sub>e</sub>	A	11
660 V 690 V	I <sub>e</sub>	A	11
Motor rating	P	kWh	
220 V 230 V	P	kW	2.6
240V	P	kW	2.6
380 V 400 V	P	kW	4
415 V	P	kW	5
440 V	P	kW	5.5
500 V	P	kW	6.7
660 V 690 V	P	kW	9
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I <sub>e</sub>	A	6
240 V	I <sub>e</sub>	A	6
380 V 400 V	I <sub>e</sub>	A	6
415 V	I <sub>e</sub>	A	6
440 V	I <sub>e</sub>	A	6
500 V	I <sub>e</sub>	A	5
660 V 690 V	I <sub>e</sub>	A	4,5
Motor rating	P	kWh	
220 V 230 V	P	kW	1,5
240 V	P	kW	1,6
380 V 400 V	P	kW	2,5
415 V	P	kW	2,8
440 V	P	kW	3
500 V	P	kW	2,8
660 V 690 V	P	kW	3,6

### Current heat loss

3 pole, at I <sub>th</sub> (60°)		W	7.9
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	0.6
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 Hz	Pick-up	VA	52
50 Hz	Sealing	VA	7.1
50 Hz	Sealing	W	2.1
60 Hz	Pick-up	VA	67
60 Hz	Sealing	VA	8.7
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

### 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	3
230 V 240 V		HP	3
460 V 480 V		HP	5
575 V 600 V		HP	7,5
Single-phase			
115 V 120 V		HP	0,5
230 V 240 V		HP	1
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	240 - 240
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	11
Rated operation power at AC-3, 400 V		kW	4
Rated operation current Ie at AC-4, 400 V		A	6
Rated operation power at AC-4, 400 V		kW	2.5
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>