



Contactor, 3p+1N/O, 10HP/600VAC, SEMI F47

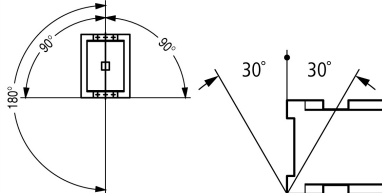
Part no. DILMF11-10(RAC120)
Article no. 104420
Catalog No. XTCE011C10A-F47

Delivery programme

Product range			Contactors
Application			Contactors for Semiconductor Industries acc. to SEMI F47
Subrange			Contactors up to 150 A with electronic actuation
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			 Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
Connection technique			Screw terminals
Rated operational current			
AC-3			
380 V 400 V	I_e	A	9
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	22
enclosed	I_{th}	A	18
Conventional free air thermal current, 1 pole			
open	I_{th}	A	50
enclosed	I_{th}	A	45
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	2.5
380 V 400 V	P	kW	4
660 V 690 V	P	kW	4.5
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
Contacts			
N/O = Normally open			1 N/O
Contact sequence			
Instructions			Contacts to EN 50012. built-in suppressor circuit'

Technical data

General

Mounting position			
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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	22
at 50 °C	$I_{th} = I_e$	A	21
at 60 °C	$I_{th} = I_e$	A	20
enclosed			
	I_{th}	A	18
Conventional free air thermal current, 1 pole			
open			
	I_{th}	A	50
enclosed			
	I_{th}	A	45
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	9
240 V	I_e	A	9
380 V 400 V	I_e	A	9
415 V	I_e	A	9
440V	I_e	A	9
500 V	I_e	A	7
660 V 690 V	I_e	A	5
Motor rating			
220 V 230 V	P	kWh	
	P	kW	2.5
240V	P	kW	3
380 V 400 V	P	kW	4
415 V	P	kW	5.5
440 V	P	kW	5.5
500 V	P	kW	4.5
660 V 690 V	P	kW	4.5
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	6
240 V	I_e	A	6
380 V 400 V	I_e	A	6
415 V	I_e	A	6
440 V	I_e	A	6
500 V	I_e	A	5
660 V 690 V	I_e	A	4.5
Motor rating			
220 V 230 V	P	kWh	
	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_{th}	W	2.4
Current heat loss at I_e to AC-3/400 V	W	0.6

Magnet systems

Voltage tolerance	$x U_c$	
AC operated	Pick-up	$x U_c$ 0.8 - 1.15
Drop-out voltage AC operated	Drop-out	$x U_c$ 0.2 - 0.5

Power consumption of the coil in a cold state and $1.0 \times U_c$			
Electronic actuation	Pick-up	VA	14
Electronic actuation	Sealing	VA	0.7
Electronic actuation	Sealing	W	0.7
Duty factor		% DF	100
Operating times			
Closing delay		ms	40
Opening delay		ms	45
-suitable according to			SEMI F47

Electromagnetic compatibility (EMC)

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

Additional technical data

like the contactor	DIL		M9
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Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	9
Heat dissipation per pole, current-dependent	P_{vid}	W	0.2
Equipment heat dissipation, current-dependent	P_{vid}	W	0.6
Static heat dissipation, non-current-dependent	P_{vs}	W	0.8
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			
10.2.2.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.2.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.2.3 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			
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			
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			
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			
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			
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			
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			
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 5.0

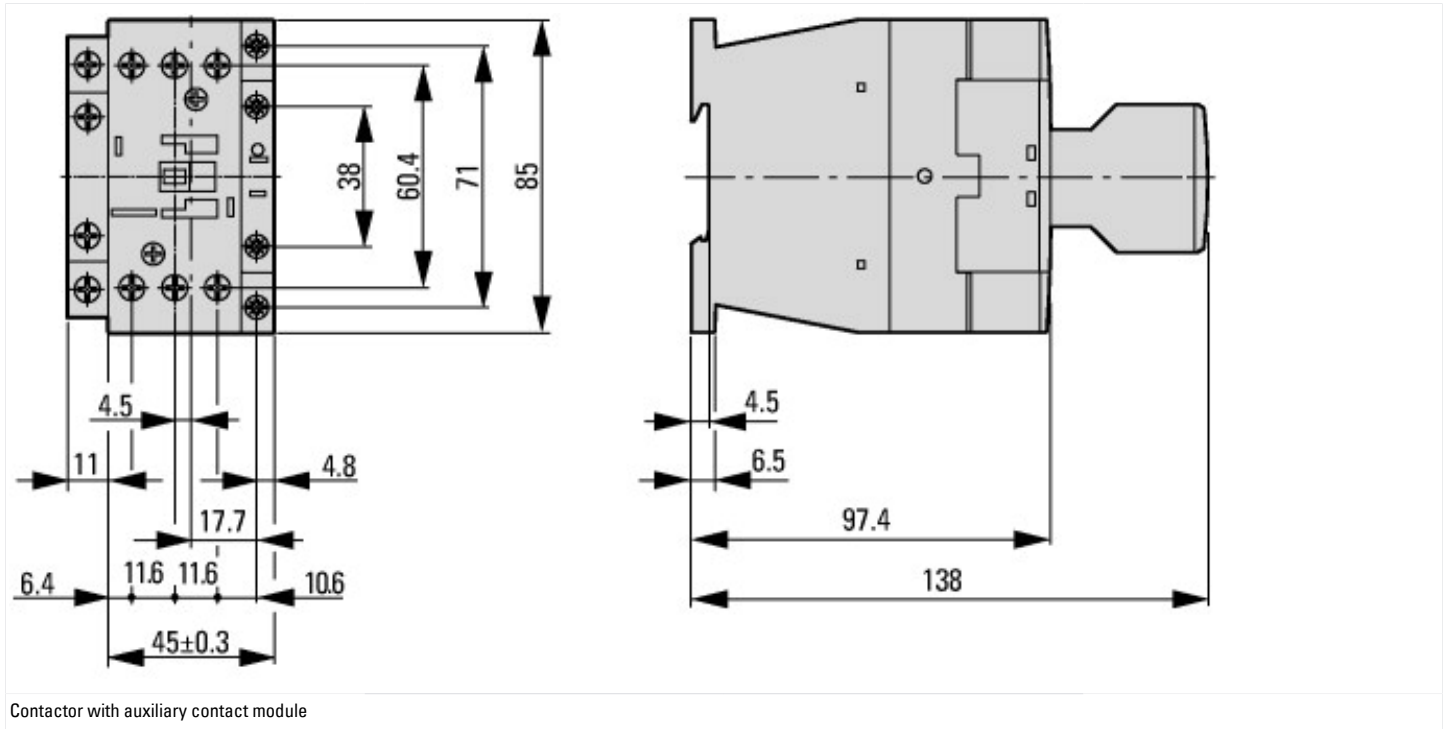
Low-voltage industrial components (EG000017) / Magnet contactor, AC-switching (EC000066)
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8-27-37-10-03 [AAB718011])

Rated control supply voltage U_s at AC 50HZ	V	100 - 120
Rated control supply voltage U_s at AC 60HZ	V	100 - 120
Rated control supply voltage U_s at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current I_e at AC-1, 400 V	A	20
Rated operation current I_e at AC-3, 400 V	A	9
Rated operation power at AC-3, 400 V	kW	4
Rated operation current I_e at AC-4, 400 V	A	7
Rated operation power I_e at AC-4, 400 V	kW	3
Modular version		No
Number of auxiliary contacts as normally open contact		1
Number of auxiliary contacts as normally closed contact		0
Connection type main current circuit		Screw connection
Number of normally closed contacts as main contact		0
Number of main contacts as normally open contact		3

Approvals

Product Standards		IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; 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

Dimensions





Lateral clearance to earthed parts: 6 mm

Additional product information (links)

IL03407014Z (AWA2100-2127) Contactor

IL03407014Z (AWA2100-2127) Contactor ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407014Z2012_03.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

Motor starters and "Special Purpose Ratings" for the North American market http://www.moeller.net/binary/ver_techpapers/ver953en.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