




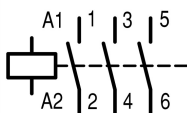
**Contactors, 3p, 50HP/600VAC, SEMI F47**

**Part no. DILMF50(RAC240)**  
**Article no. 104465**  
**Catalog No. XTCE050D00B-F47**



Powering Business Worldwide™

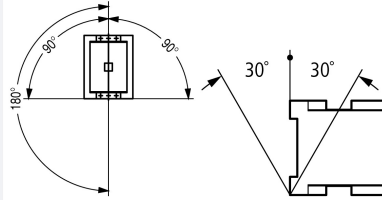
## Delivery programme

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
Description				Contactors suitable for semi-conductor industry according to SEMI F47. Contactors hum-free, suitable for building services automation. Operating mechanism adjustable from 50 Hz to 400 Hz.
Pole				3 pole
<b>Rated operational current</b>				
AC-3				
380 V 400 V	$I_e$	A		50
AC-1				
Conventional free air thermal current, 3 pole, 50 - 60 Hz				
Open				
at 40 °C	$I_{th} = I_e$	A		80
enclosed	$I_{th}$	A		58
Conventional free air thermal current, 1 pole				
open	$I_{th}$	A		162
enclosed	$I_{th}$	A		145
<b>Max. rating for three-phase motors, 50 - 60 Hz</b>				
AC-3				
220 V 230 V	P	kW		15.5
380 V 400 V	P	kW		22
660 V 690 V	P	kW		30
AC-4				
220 V 230 V	P	kW		6
380 V 400 V	P	kW		10
660 V 690 V	P	kW		14
Contact sequence				
<strong>Instructions</strong>				Contacts to EN 50012. built-in suppressor circuit*

# Technical data

## General

Mounting position



## AC

<b>AC-1</b>			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	80
at 50 °C	$I_{th} = I_e$	A	71
at 60 °C	$I_{th} = I_e$	A	65
enclosed			
	$I_{th}$	A	58
Conventional free air thermal current, 1 pole			
open			
	$I_{th}$	A	162
enclosed			
	$I_{th}$	A	145
<b>AC-3</b>			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	$I_e$	A	50
240 V	$I_e$	A	50
380 V 400 V	$I_e$	A	50
415 V	$I_e$	A	50
440V	$I_e$	A	50
500 V	$I_e$	A	50
660 V 690 V	$I_e$	A	32
Motor rating			
220 V 230 V	P	kWh	15.5
240V	P	kW	17
380 V 400 V	P	kW	22
415 V	P	kW	30
440 V	P	kW	32
500 V	P	kW	36
660 V 690 V	P	kW	30
<b>AC-4</b>			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	$I_e$	A	21
240 V	$I_e$	A	21
380 V 400 V	$I_e$	A	21
415 V	$I_e$	A	21
440 V	$I_e$	A	21
500 V	$I_e$	A	21
660 V 690 V	$I_e$	A	17
Motor rating			
220 V 230 V	P	kW	6
240 V	P	kW	6.5
380 V 400 V	P	kW	10
415 V	P	kW	11
440 V	P	kW	12
500 V	P	kW	13

660 V 690 V	P	kW	14
<b>Current heat loss</b>			
3-pole at $I_{th}$		W	19
Current heat loss at $I_e$ to AC-3/400 V		W	11.3
<b>Magnet systems</b>			
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	45
Electronic actuation	Sealing	VA	1.5
Electronic actuation	Sealing	W	1.5
Duty factor		% DF	100
Operating times			
Closing delay		ms	50
Opening delay		ms	45
-suitable according to			SEMI F47
<b>Electromagnetic compatibility (EMC)</b>			
Emitted interference			according to EN 60947-1
Interference immunity			according to EN 60947-1
<b>Additional technical data</b>			
like the contactor	DIL		M50

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	50
Heat dissipation per pole, current-dependent	$P_{vid}$	W	3.3
Equipment heat dissipation, current-dependent	$P_{vid}$	W	9.9
Static heat dissipation, non-current-dependent	$P_{vs}$	W	1.3
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 5.0

Low-voltage industrial components (EG000017) / Magnet contactor, AC-switching (EC000066)

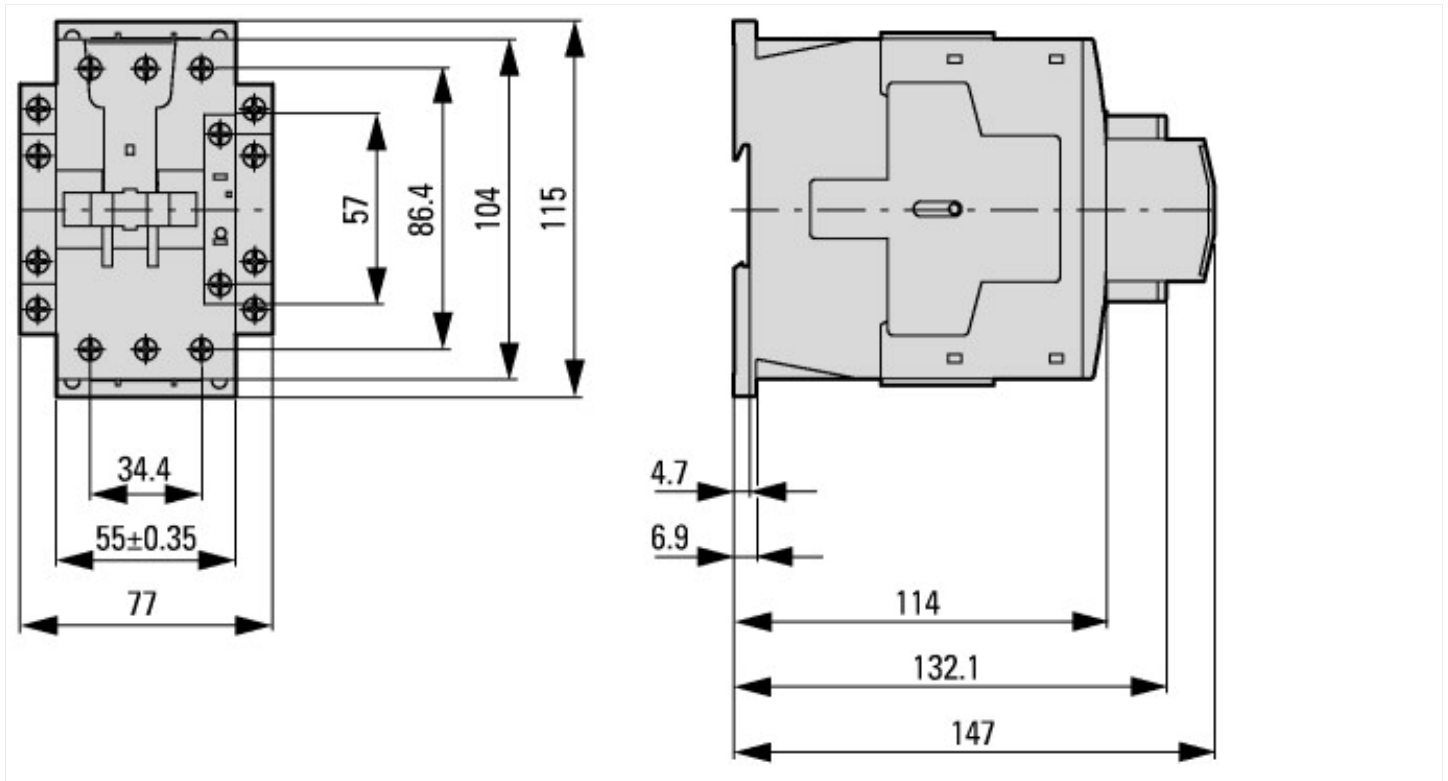
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8-27-37-10-03 [AAB718011])

Rated control supply voltage $U_s$ at AC 50HZ	V	190 - 240
Rated control supply voltage $U_s$ at AC 60HZ	V	190 - 240
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	70
Rated operation current $I_e$ at AC-3, 400 V	A	50
Rated operation power at AC-3, 400 V	kW	22
Rated operation current $I_e$ at AC-4, 400 V	A	21
Rated operation power $I_e$ at AC-4, 400 V	kW	10
Modular version		No
Number of auxiliary contacts as normally open contact		0
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



Contactor with auxiliary contact module



Lateral clearance to earthed parts: 6 mm

### Additional product information (links)

#### IL03407033Z (AWA2100-2247) Contactor DILM, basic unit

IL03407033Z (AWA2100-2247) Contactor DILM, basic unit [ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407033Z2012\\_03.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407033Z2012_03.pdf)

Switchgear of Power Factor Correction Systems [http://www.moeller.net/binary/ver\\_techpapers/ver934en.pdf](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](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](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](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](http://www.moeller.net/binary/ver_techpapers/ver953en.pdf)

Switchgear for Luminaires [http://www.moeller.net/binary/ver\\_techpapers/ver955en.pdf](http://www.moeller.net/binary/ver_techpapers/ver955en.pdf)

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>