
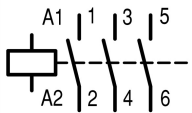




Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 65 A, RAC 120: 100 - 120 V 50/60 Hz, Screw terminals

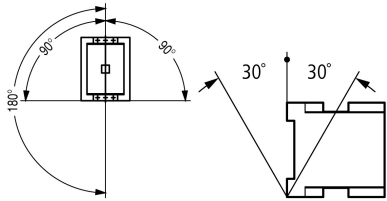
Part no. DILMF65(RAC120)
Catalog No. 104468
Alternate Catalog No. XTCE065D00A-F47

Delivery program

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		65
AC-1				
Conventional free air thermal current, 3 pole, 50 - 60 Hz				
Open				
at 40 °C	$I_{th} = I_e$	A		98
enclosed	I_{th}	A		72
Conventional free air thermal current, 1 pole				
open	I_{th}	A		200
enclosed	I_{th}	A		180
Max. rating for three-phase motors, 50 - 60 Hz				
AC-3				
220 V 230 V	P	kW		20
380 V 400 V	P	kW		30
660 V 690 V	P	kW		35
AC-4				
220 V 230 V	P	kW		7
380 V 400 V	P	kW		12
660 V 690 V	P	kW		17
Contact sequence				
Actuating voltage				RAC 120: 100 - 120 V 50/60 Hz
Instructions				Contacts to EN 50 012. built-in suppressor circuit' integrated suppressor circuit in actuating electronics

Technical data

General

Mounting position			
Altitude	m	Max. 2000	

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	98
at 50 °C	$I_{th} = I_e$	A	88
at 60 °C	$I_{th} = I_e$	A	80
enclosed	I_{th}	A	72
Conventional free air thermal current, 1 pole			
open	I_{th}	A	200
enclosed	I_{th}	A	180
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	65
240 V	I_e	A	65
380 V 400 V	I_e	A	65
415 V	I_e	A	65
440V	I_e	A	65
500 V	I_e	A	65
660 V 690 V	I_e	A	37
Motor rating			
220 V 230 V	P	kWh	20
240V	P	kW	22
380 V 400 V	P	kW	30
415 V	P	kW	39
440 V	P	kW	41
500 V	P	kW	47
660 V 690 V	P	kW	35
AC-4			
Open, 3-pole: 50 – 60 Hz			
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
440 V	I_e	A	25
500 V	I_e	A	25
660 V 690 V	I_e	A	20
Motor rating			
220 V 230 V	P	kW	7
240 V	P	kW	7.5
380 V 400 V	P	kW	12
415 V	P	kW	13

440 V	P	kW	14
500 V	P	kW	16
660 V 690 V	P	kW	17

Current heat loss

3 pole, at I_{th} (60°)		W	28.8
Current heat loss at I_e to AC-3/400 V		W	17.1

Magnet systems

Voltage tolerance			
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 $1.0 \times U_S$			
Electronic actuation	Pick-up	VA	45
Electronic actuation	Sealing	VA	1.5
Electronic actuation	Sealing	W	1.3
Duty factor		% DF	100
Operating times			
Closing delay		ms	50
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		M65
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Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	20
230 V 240 V		HP	25
460 V 480 V		HP	50
575 V 600 V		HP	60
Single-phase			
115 V 120 V		HP	5
230 V 240 V		HP	15
General use		A	88
Short Circuit Current Rating			
Basic Rating			
SCCR		kA	10
max. Fuse		A	250
max. CB		A	250
480 V High Fault			
SCCR (fuse)		kA	30/100
max. Fuse		A	250/150 Class J
SCCR (CB)		kA	65
max. CB		A	100
600 V High Fault			
SCCR (fuse)		kA	30/100
max. Fuse		A	250/150 Class J
SCCR (CB)		kA	30
max. CB		A	250
Special Purpose Ratings			

Electrical Discharge Lamps (Ballast)			
480V 60Hz 3phase, 277V 60Hz 1phase	A		88
600V 60Hz 3phase, 347V 60Hz 1phase	A		88
Incandescent Lamps (Tungsten)			
480V 60Hz 3phase, 277V 60Hz 1phase	A		88
600V 60Hz 3phase, 347V 60Hz 1phase	A		88
Resistance Air Heating			
480V 60Hz 3phase, 277V 60Hz 1phase	A		88
600V 60Hz 3phase, 347V 60Hz 1phase	A		88
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)			
LRA 480V 60Hz 3phase	A		390
FLA 480V 60Hz 3phase	A		65
Elevator Control			
200V 60Hz 3phase	HP		10
200V 60Hz 3phase	A		32.2
240V 60Hz 3phase	HP		15
240V 60Hz 3phase	A		42
480V 60Hz 3phase	HP		30
480V 60Hz 3phase	A		40
600V 60Hz 3phase	HP		40
600V 60Hz 3phase	A		41

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	65
Heat dissipation per pole, current-dependent	P_{vid}	W	5.7
Equipment heat dissipation, current-dependent	P_{vid}	W	17.1
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.

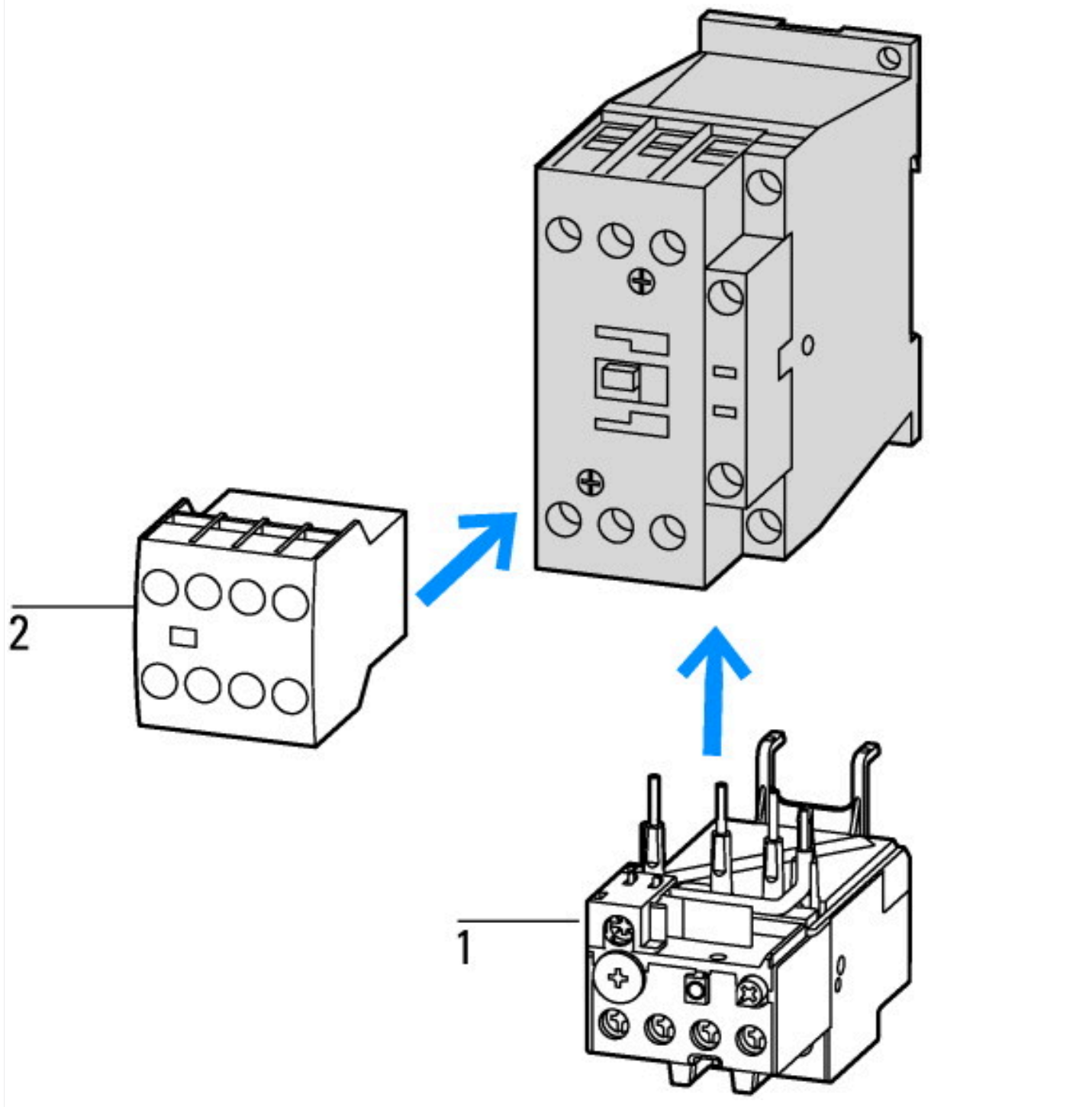
10.12 Electromagnetic compatibility		Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function		The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

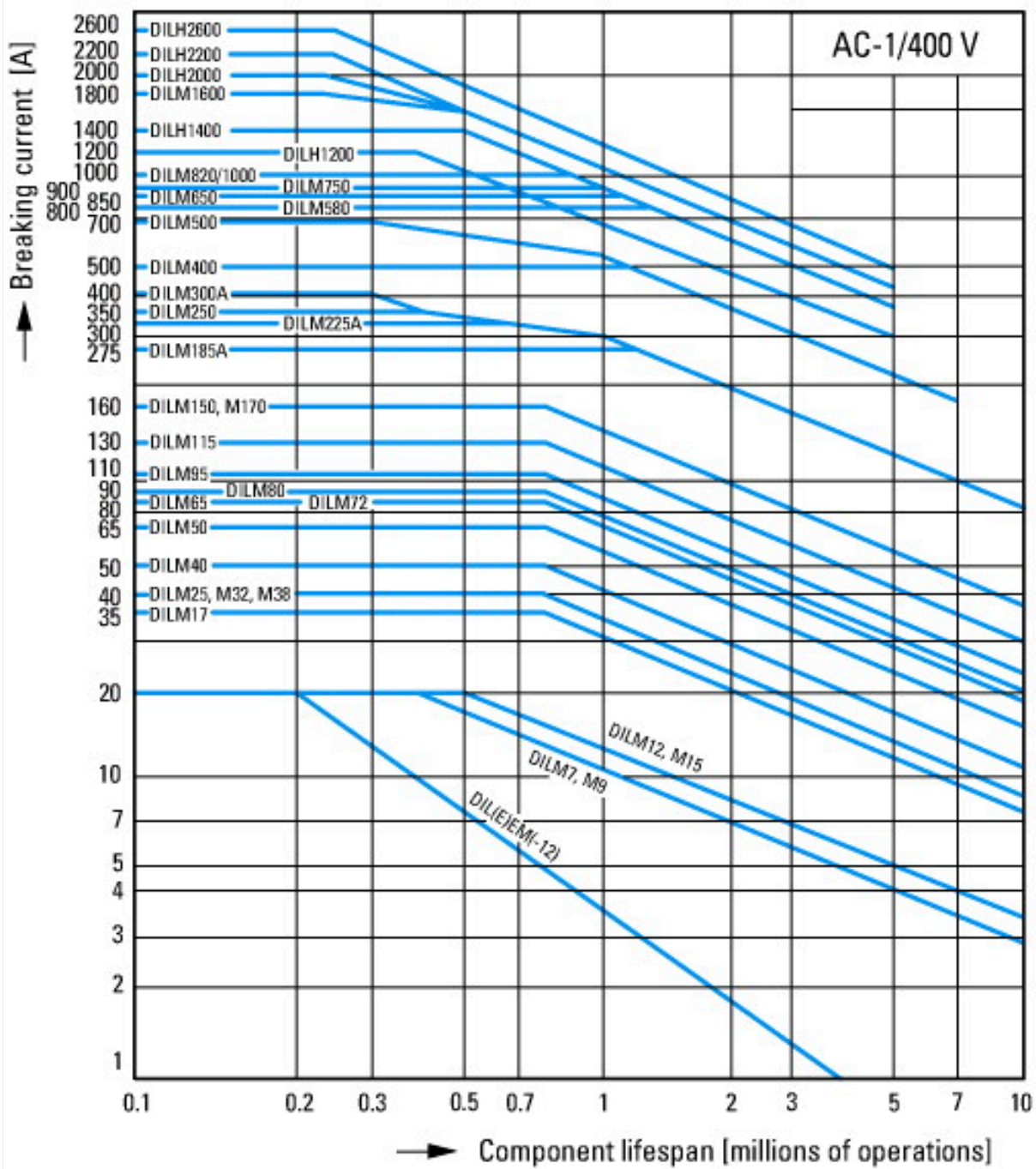
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])		
Rated control supply voltage Us at AC 50HZ	V	100 - 120
Rated control supply voltage Us at AC 60HZ	V	100 - 120
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	85
Rated operation current Ie at AC-3, 400 V	A	65
Rated operation power at AC-3, 400 V	kW	30
Rated operation current Ie at AC-4, 400 V	A	25
Rated operation power at AC-4, 400 V	kW	12
Rated operation power NEMA	kW	37
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
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		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



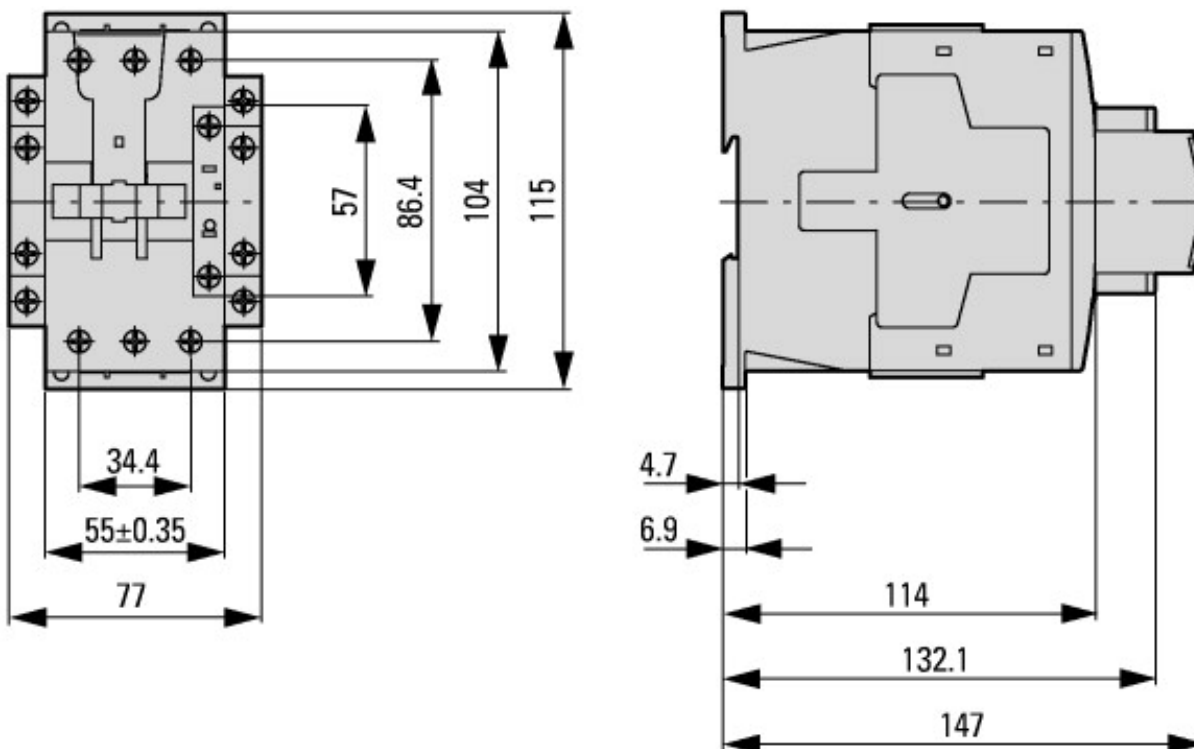
1: Overload relay
2: Auxiliary contact module



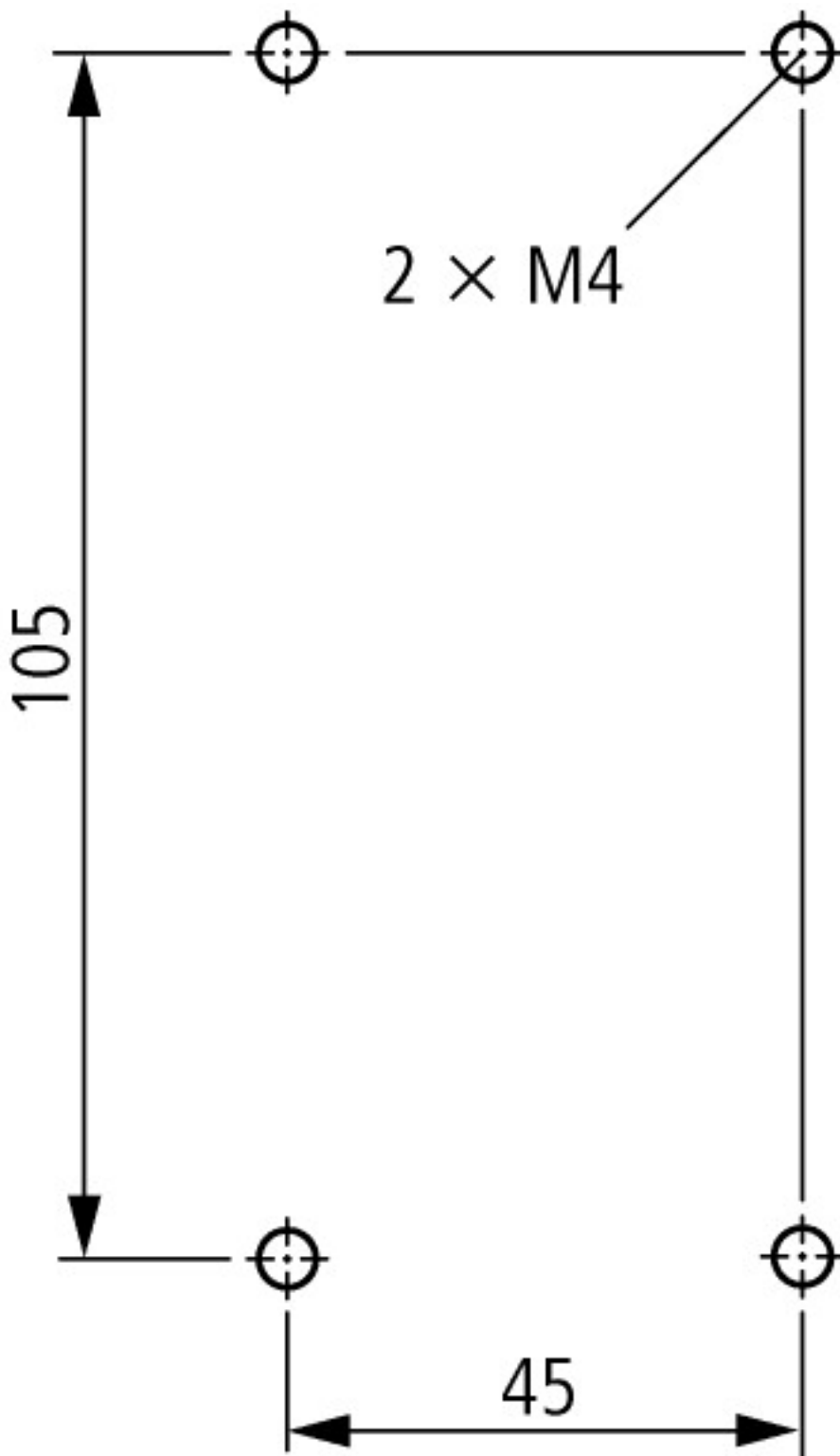
Switching conditions for non-motor consumers, 3 pole, 4 pole
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application
 Electric heat



Dimensions



Contactor with auxiliary contact module



Lateral clearance to earthed parts: 6 mm

Assets (links)

Declaration of CE Conformity

00003252

Instruction Leaflets

IL03407033Z2018_03

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/IL03407033Z2018_03.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