



Contactors for Semiconductor Industries acc. to SEMI F47, 380 V 400 V: 80 A, RAC 24: 24 V 50/60 Hz, Screw terminals



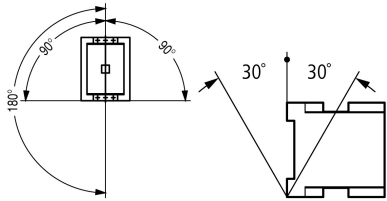
**Part no.** DILMF80(RAC24)  
**Catalog No.** 104470  
**Alternate Catalog No.** XTCE080F00T-F47

**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
<b>Rated operational current</b>				
AC-3				
380 V 400 V	$I_e$	A		80
AC-1				
Conventional free air thermal current, 3 pole, 50 - 60 Hz				
Open				
at 40 °C	$I_{th} = I_e$	A		110
enclosed	$I_{th}$	A		80
Conventional free air thermal current, 1 pole				
open	$I_{th}$	A		225
enclosed	$I_{th}$	A		200
<b>Max. rating for three-phase motors, 50 - 60 Hz</b>				
AC-3				
220 V 230 V	P	kW		25
380 V 400 V	P	kW		37
660 V 690 V	P	kW		63
AC-4				
220 V 230 V	P	kW		11.5
380 V 400 V	P	kW		20
660 V 690 V	P	kW		26
Contact sequence				
Actuating voltage				RAC 24: 24 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

<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	110
at 50 °C	$I_{th} = I_e$	A	98
at 60 °C	$I_{th} = I_e$	A	90
enclosed	$I_{th}$	A	80
Conventional free air thermal current, 1 pole			
open	$I_{th}$	A	225
enclosed	$I_{th}$	A	200
<b>AC-3</b>			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.)
220 V 230 V	$I_e$	A	80
240 V	$I_e$	A	80
380 V 400 V	$I_e$	A	80
415 V	$I_e$	A	80
440V	$I_e$	A	80
500 V	$I_e$	A	80
660 V 690 V	$I_e$	A	65
Motor rating	P	kWh	
220 V 230 V	P	kW	25
240V	P	kW	27.5
380 V 400 V	P	kW	37
415 V	P	kW	48
440 V	P	kW	51
500 V	P	kW	58
660 V 690 V	P	kW	63
<b>AC-4</b>			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	$I_e$	A	40
240 V	$I_e$	A	40
380 V 400 V	$I_e$	A	40
415 V	$I_e$	A	40
440 V	$I_e$	A	40
500 V	$I_e$	A	40
660 V 690 V	$I_e$	A	27
Motor rating	P	kWh	
220 V 230 V	P	kW	11.5
240 V	P	kW	13
380 V 400 V	P	kW	20
415 V	P	kW	24

440 V	P	kW	25
500 V	P	kW	29
660 V 690 V	P	kW	26

### Current heat loss

3 pole, at $I_{th}$ (60°)		W	14.6
Current heat loss at $I_e$ to AC-3/400 V		W	9

### 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	75
Electronic actuation	Sealing	VA	2
Electronic actuation	Sealing	W	2
Duty factor		% DF	100
Operating times			
Closing delay		ms	55
Opening delay		ms	40
-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		M80
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### Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	25
230 V 240 V		HP	30
460 V 480 V		HP	60
575 V 600 V		HP	75
Single-phase			
115 V 120 V		HP	7.5
230 V 240 V		HP	15
General use		A	125
Short Circuit Current Rating			
Basic Rating			
SCCR		kA	10
max. Fuse		A	600
max. CB		A	600
480 V High Fault			
SCCR (fuse)		kA	30/100
max. Fuse		A	300/300 Class J
SCCR (CB)		kA	65
max. CB		A	250
600 V High Fault			
SCCR (fuse)		kA	30/100
max. Fuse		A	300/300 Class J
SCCR (CB)		kA	30
max. CB		A	350
Special Purpose Ratings			

Electrical Discharge Lamps (Ballast)			
480V 60Hz 3phase, 277V 60Hz 1phase	A		100
600V 60Hz 3phase, 347V 60Hz 1phase	A		100
Incandescent Lamps (Tungsten)			
480V 60Hz 3phase, 277V 60Hz 1phase	A		100
600V 60Hz 3phase, 347V 60Hz 1phase	A		100
Resistance Air Heating			
480V 60Hz 3phase, 277V 60Hz 1phase	A		100
600V 60Hz 3phase, 347V 60Hz 1phase	A		100
Refrigeration Control (CSA only)			
LRA 480V 60Hz 3phase	A		540
FLA 480V 60Hz 3phase	A		90
LRA 600V 60Hz 3phase	A		420
FLA 600V 60Hz 3phase	A		70
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)			
LRA 480V 60Hz 3phase	A		480
FLA 480V 60Hz 3phase	A		80
Elevator Control			
200V 60Hz 3phase	HP		20
200V 60Hz 3phase	A		62.1
240V 60Hz 3phase	HP		25
240V 60Hz 3phase	A		68
480V 60Hz 3phase	HP		50
480V 60Hz 3phase	A		65
600V 60Hz 3phase	HP		60
600V 60Hz 3phase	A		62

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	80
Heat dissipation per pole, current-dependent	$P_{vid}$	W	3
Equipment heat dissipation, current-dependent	$P_{vid}$	W	9
Static heat dissipation, non-current-dependent	$P_{vs}$	W	2
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.

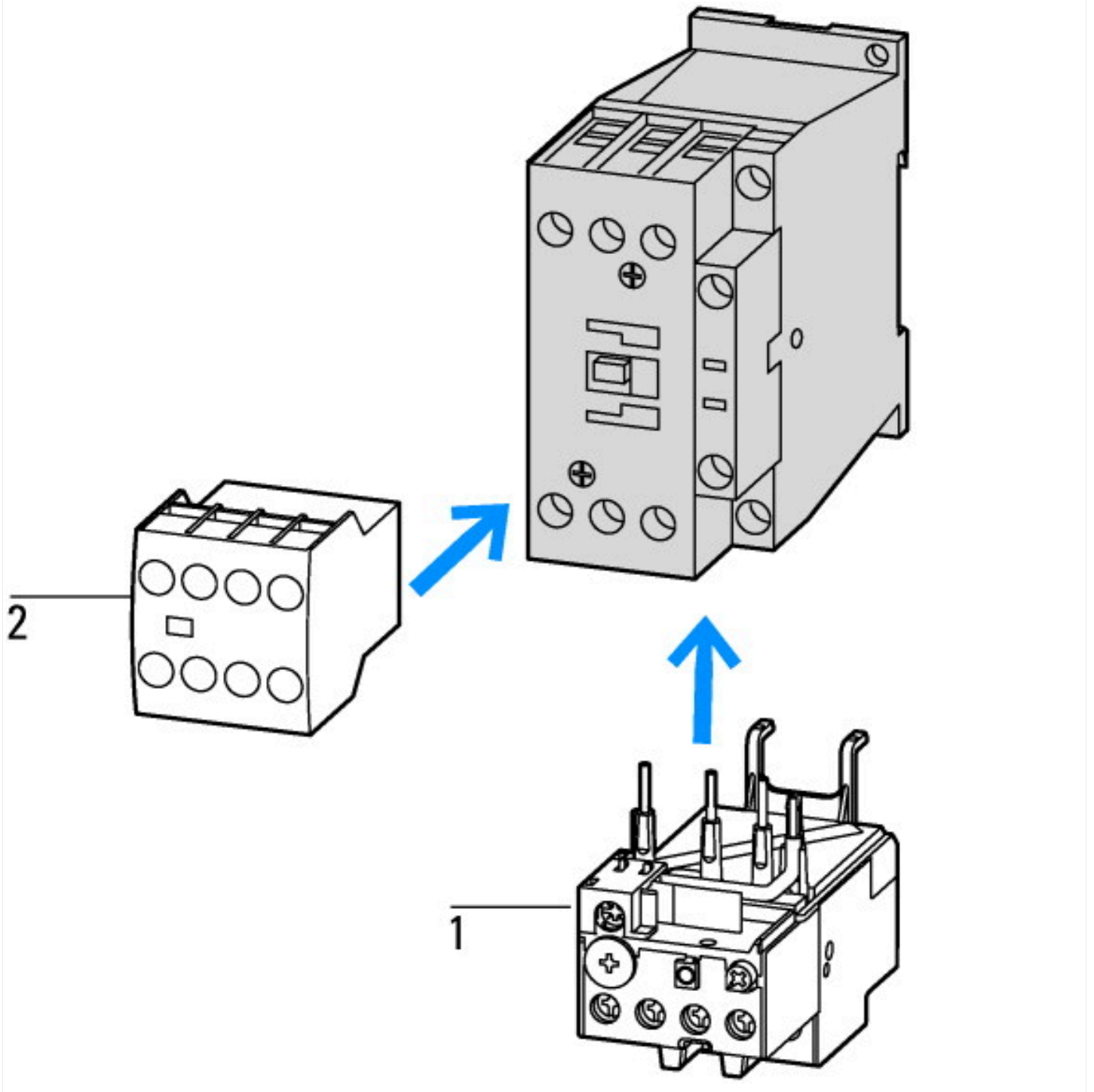
10.9.3 Impulse withstand voltage		Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material		Is the panel builder's responsibility.
10.10 Temperature rise		The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation 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

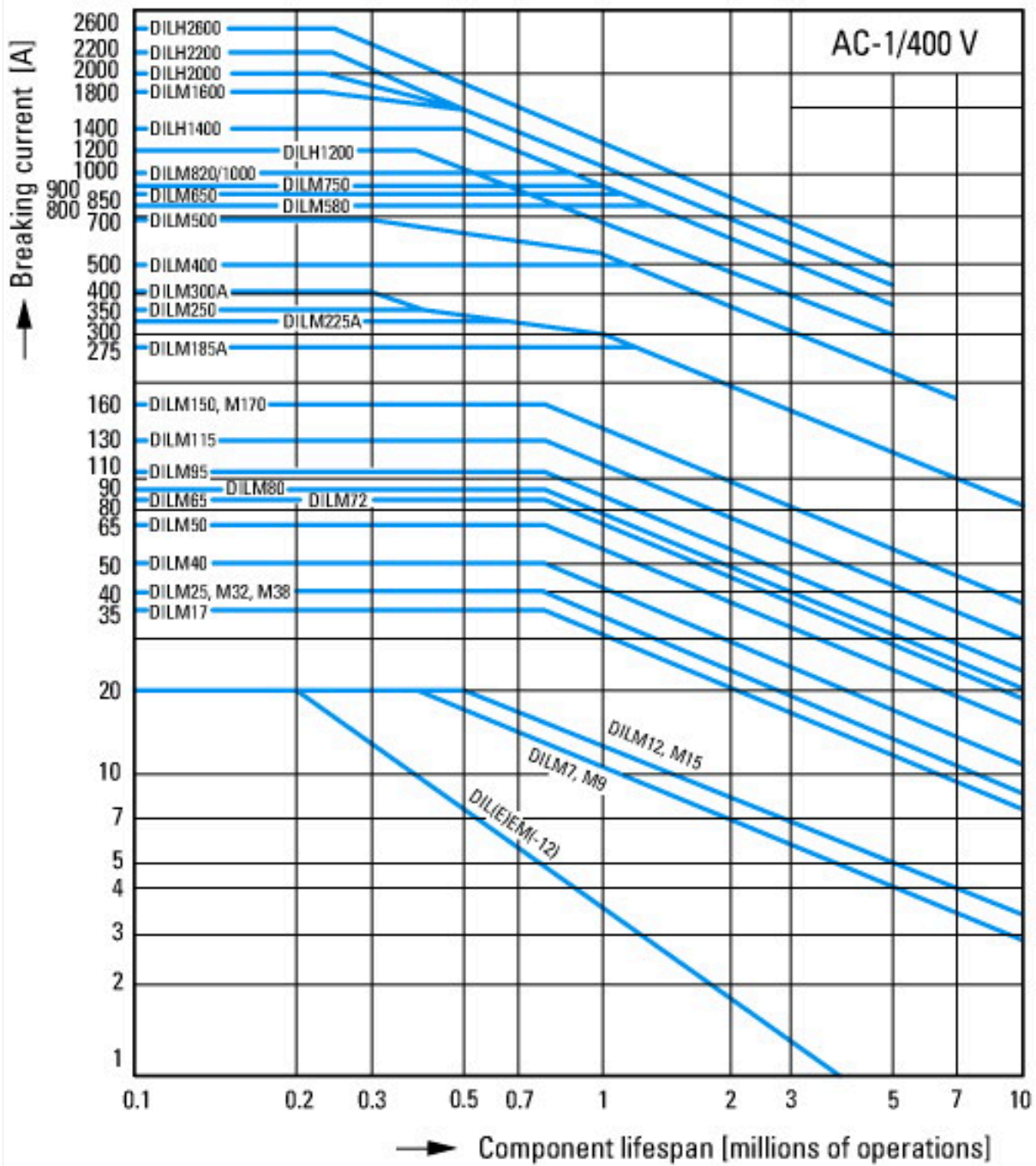
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])		
Rated control supply voltage Us at AC 50HZ	V	24 - 24
Rated control supply voltage Us at AC 60HZ	V	24 - 24
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	90
Rated operation current Ie at AC-3, 400 V	A	80
Rated operation power at AC-3, 400 V	kW	37
Rated operation current Ie at AC-4, 400 V	A	40
Rated operation power at AC-4, 400 V	kW	20
Rated operation power NEMA	kW	44.7
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



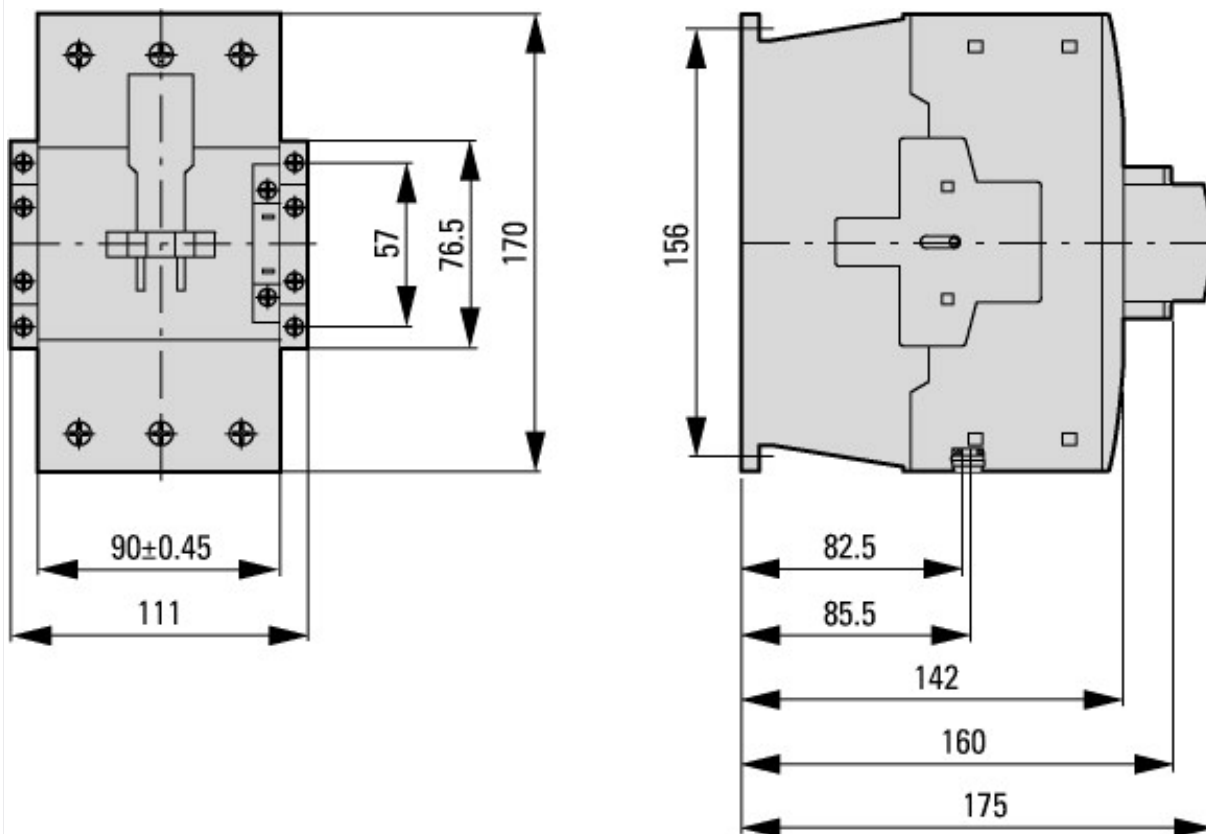
1: Overload relay  
2: Auxiliary contact module



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

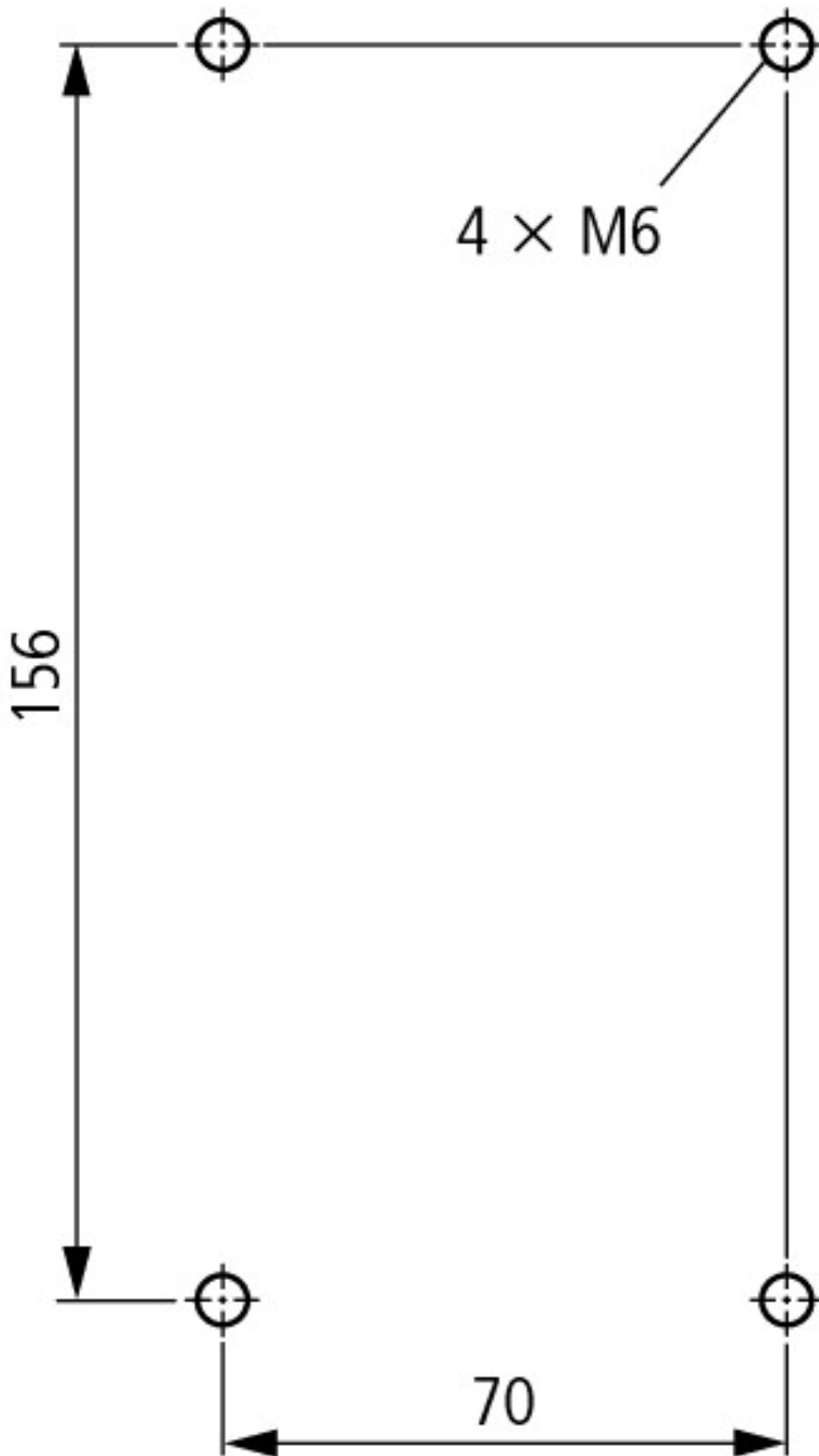


### Dimensions



Contacteur with auxiliary contact module





seitlicher Abstand zu geerdeten Teilen: 10 mm

## Assets (links)

### Declaration of CE Conformity

00003251

### Instruction Leaflets

IL03407039Z2019\_09

## Additional product information (links)

### IL03407039Z (AWA2100-2286) Contactors

IL03407039Z (AWA2100-2286) Contactors	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2019_09.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2019_09.pdf</a>
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 Cabel 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>