


Contactor, 3p, 37kW/400V/AC3

Part no. DILM80(230V50HZ,240V60HZ)
Catalog No. 239402
Eaton Catalog No. XTCE080F00F
EL-Nummer 0004134048
(Norway)



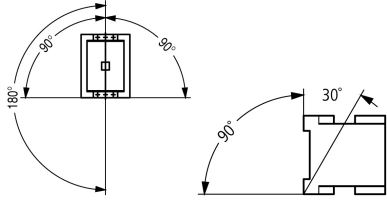
Delivery program

Product range			Contactors
Application			Contactors for Motors
Subrange			Contactors up to 170 A, 3 pole
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
Number of poles			3 pole
Rated operational current			
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
Max. rating for three-phase motors, 50 - 60 Hz			
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			
Instructions			Contacts to EN 50 012.
Can be combined with auxiliary contact			DILM150-XHI(V).. DILM1000-XHI(V)..
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
Voltage AC/DC			AC operation
Connection to SmartWire-DT			no

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
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Lifespan, mechanical			
AC operated	Operations	$\times 10^6$	10
Operating frequency, mechanical			
AC operated	Operations/h		3600
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	10
Auxiliary contacts			
N/O contact		g	7
N/C contact		g	5
Degree of Protection			IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Weight			
AC operated		kg	2.18
Screw connector terminals			
Terminal capacity main cable			
Flexible with ferrule		mm ²	1 x (10 - 70) 2 x (10 - 50)
Stranded		mm ²	1 x (16 - 70) 2 x (16 - 50)
Solid or stranded		AWG	single 8...3/0, double 8...2/0
Flat conductor	Lamellenzahl x Breite x Dicke	mm	2 x (6 x 16 x 0.8)
Stripping length		mm	24
Terminal screw			M10
Tightening torque		Nm	14
Tool			
Hexagon socket-head spanner	SW	mm	5
Terminal capacity control circuit cables			
Solid		mm ²	1 x (0.75 - 4) 2 x (0.75 - 2.5)
Flexible with ferrule		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 14
Stripping length		mm	10
Terminal screw			M3.5
Tightening torque		Nm	1.2

Tool		
Pozidriv screwdriver	Size	2
Standard screwdriver	mm	0.8 x 5.5 1 x 6

Main conducting paths

Rated impulse withstand voltage	U _{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	U _i	V AC	690
Rated operational voltage	U _e	V AC	690
Safe isolation to EN 61140			
between coil and contacts		V AC	690
between the contacts		V AC	690
Making capacity (p.f. to IEC/EN 60947)			
	Up to 690 V	A	1120
Breaking capacity			
220 V 230 V		A	800
380 V 400 V		A	800
500 V		A	800
660 V 690 V		A	650
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	160
690 V	gG/gL 690 V	A	160
Type "1" coordination			
400 V	gG/gL 500 V	A	250
690 V	gG/gL 690 V	A	200

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	110
at 50 °C	I _{th} = I _e	A	98
at 55 °C	I _{th} = I _e	A	94
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
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
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
380 V 400 V	I _e	A	80
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
AC-4			
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

DC

Rated operational current, open			
DC-1			
60 V	I _e	A	110
110 V	I _e	A	110
220 V	I _e	A	70

Current heat loss

3 pole, at I _{th} (60°)		W	11.4
Current heat loss at I _e to AC-3/400 V		W	9
Impedance per pole		mΩ	0.6

Magnet systems

Voltage tolerance			
AC operated	Pick-up	x U _c	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	x U _c	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x U _S			
50 Hz	Pick-up	VA	310
50 Hz	Sealing	VA	26
50 Hz	Sealing	W	5.8
60 Hz	Pick-up	VA	345
60 Hz	Sealing	VA	30
60 Hz	Sealing	W	5.8
Duty factor		% DF	100
Changeover time at 100 % U _S (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	14 - 20
Opening delay		ms	9 - 14
Arcing time		ms	15
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).		mA	≤ 1

Electromagnetic compatibility (EMC)

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

Rating data for approved types

Switching capacity			
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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	SCCR		
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	5.8
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			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 (ecI@ss10.0.1-27-37-10-03 [AAB718015])			
Rated control supply voltage U _s at AC 50HZ		V	230 - 230
Rated control supply voltage U _s at AC 60HZ		V	240 - 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	110
Rated operation current I _e at AC-3, 400 V		A	80
Rated operation power at AC-3, 400 V		kW	37
Rated operation current I _e 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

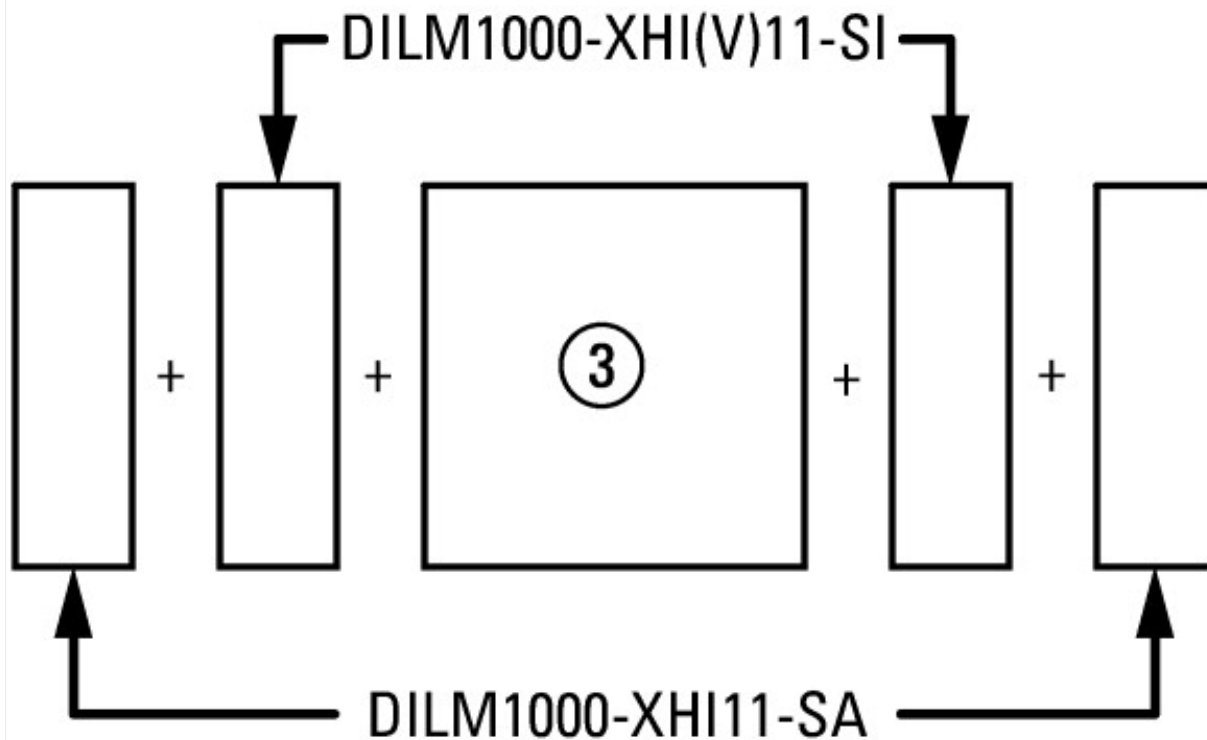
Number of main contacts as normally open contact	3
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Approvals

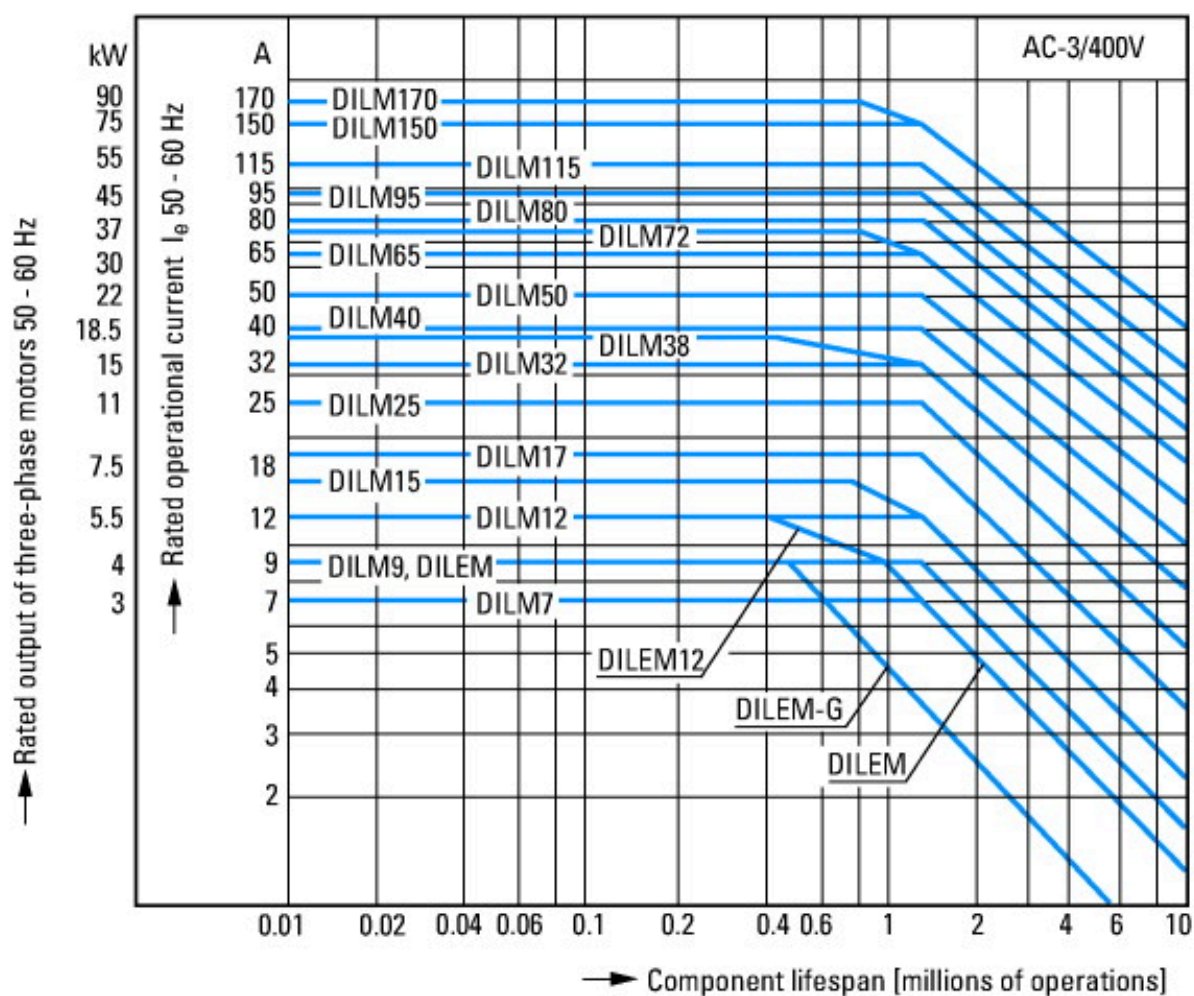
Product Standards	IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.	E29096
UL Category Control No.	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
North America Certification	UL listed, CSA certified
Specially designed for North America	No

Characteristics

1: Overload relay
2: Suppressor
3: Auxiliary contact modules

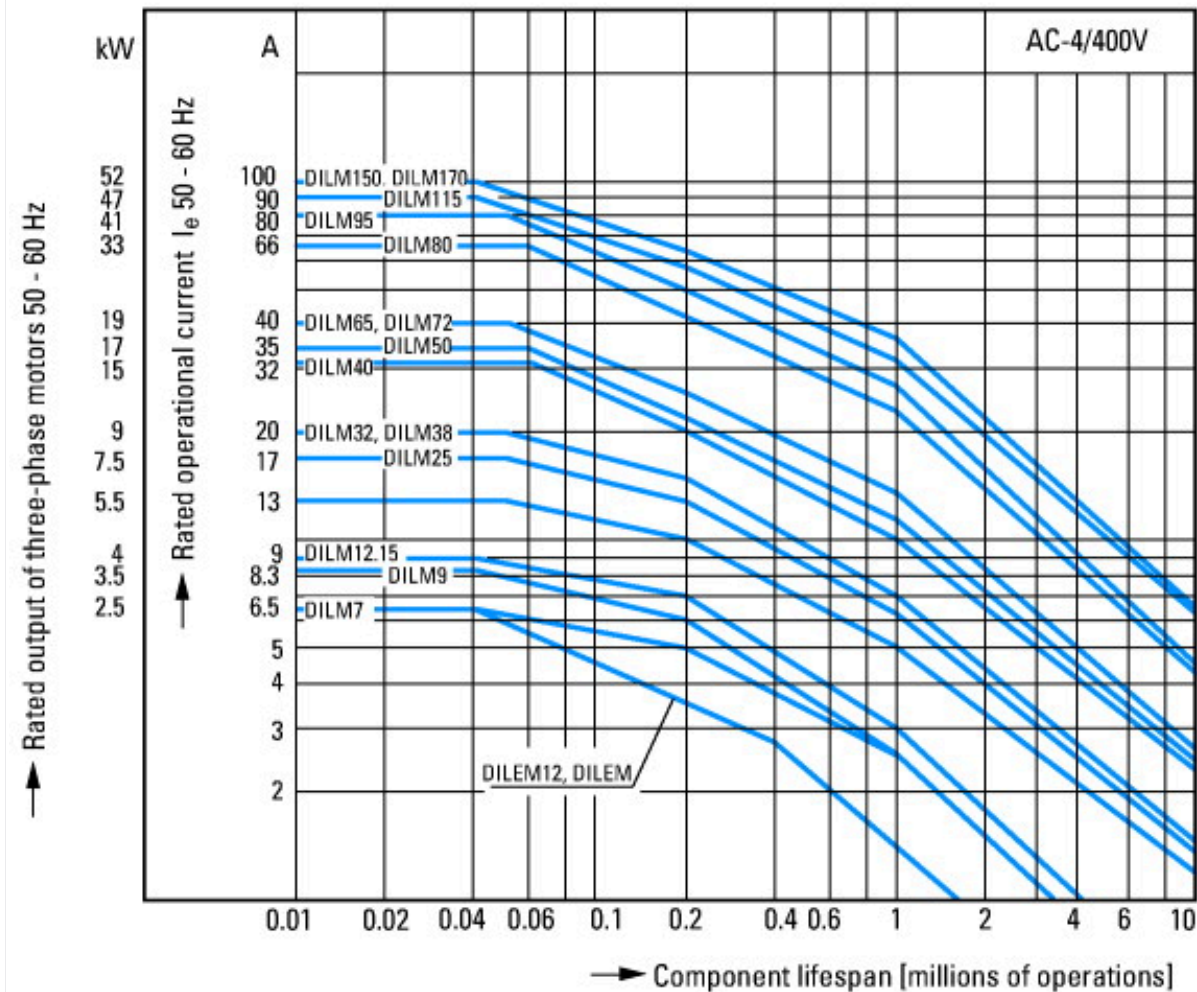


on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA

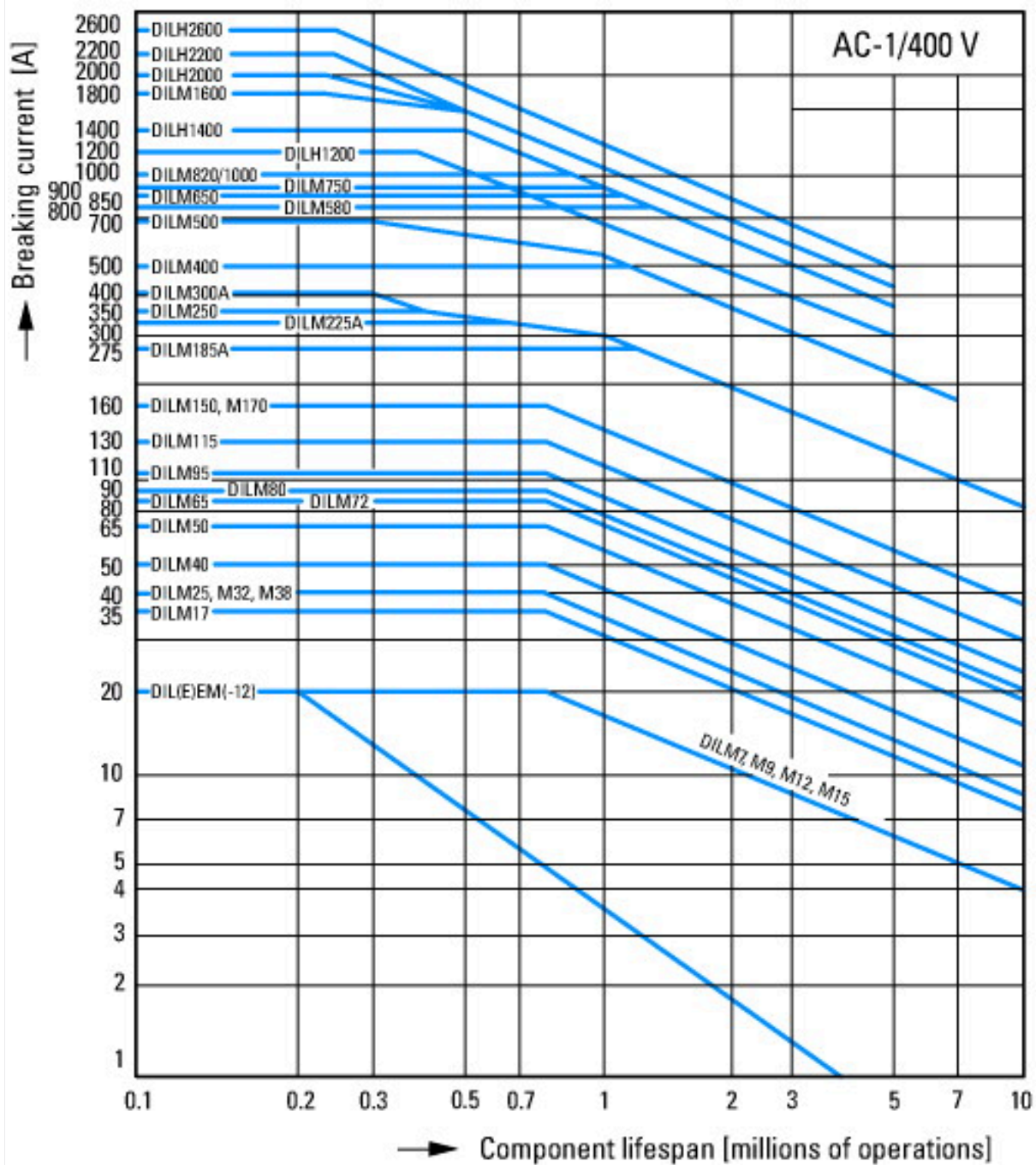


Squirrel-cage motor
 Operating characteristics
 Starting: from rest
 Stopping: after attaining full running speed
 Electrical characteristics
 Make: up to 6 x rated motor current
 Break: up to 1 x rated motor current
 Utilization category
 100 % AC-3
 Typical applications

Compressors
 Lifts
 Mixers
 Pumps
 Escalators
 Agitators
 Fans
 Conveyor belts
 Centrifuges
 Hinged flaps
 Bucket-elevators
 Air conditioning system
 General drives in manufacturing and processing machines

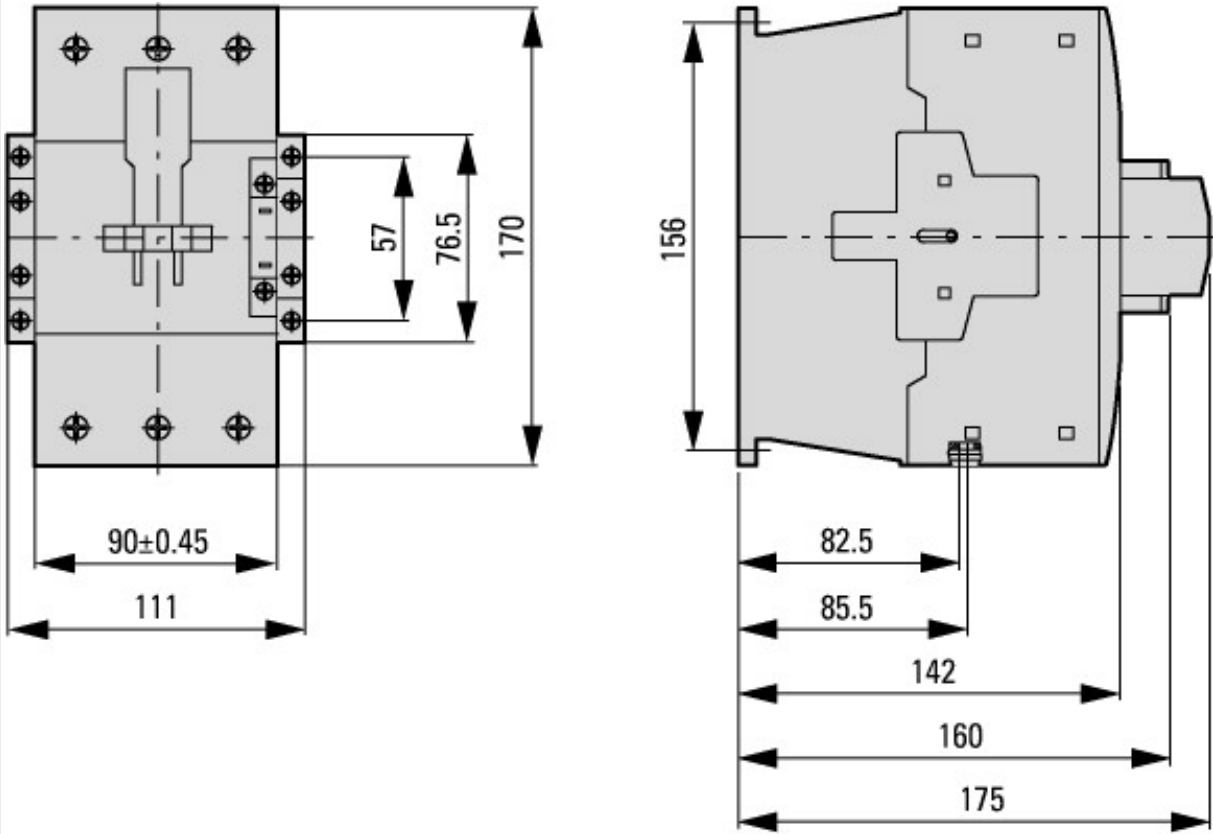


Extreme switching duty
 Squirrel-cage motor
 Operating characteristics
 Inching, plugging, reversing
 Electrical characteristics
 Make: up to 6 x rated motor current
 Break: up to 6 x rated motor current
 Utilization category
 100 % AC-4
 Typical applications
 Printing presses
 Wire-drawing machines
 Centrifuges
 Special drives for manufacturing and processing machines

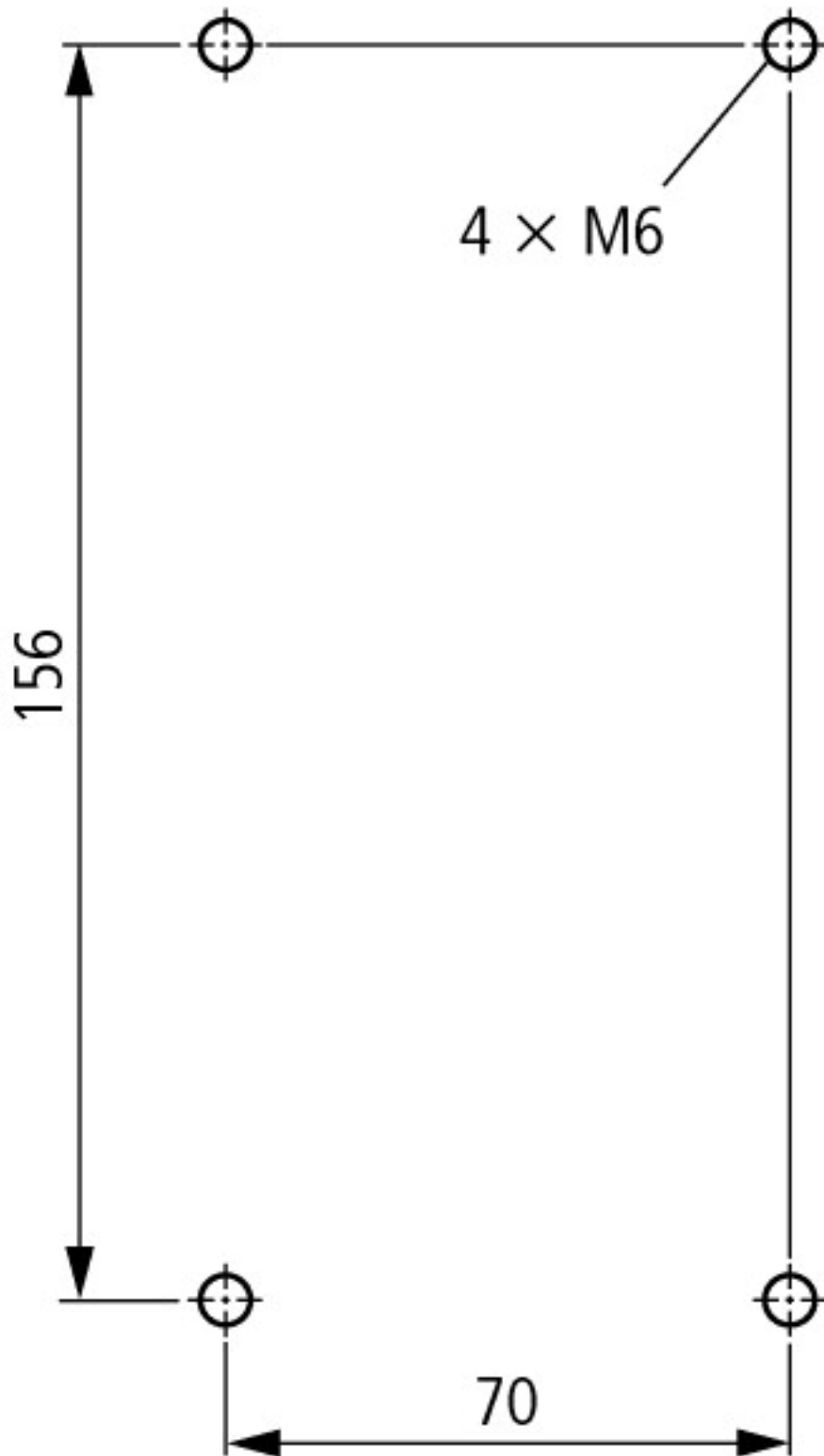


Switching conditions for non-motor consumers, 3 pole, 4 pole
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application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

Dimensions



Contactor with auxiliary contact module



distance at side to earthed parts: 10 mm

DILM80...DILM170
DILMC80...DILMC150
DILMF80...DILMF150

Additional product information (links)

IL03407039Z (AWA2100-2286) Contactors

IL03407039Z (AWA2100-2286) Contactors	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2018_05.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 Cable 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