



Contactor, 3p+2N/O+2N/C, 110kW/400V/AC3



Powering Business Worldwide™

Part no.
Article no.
Catalog No.

DILM225A/22(RAC240)
139547
XTCE225H22B

Delivery programme

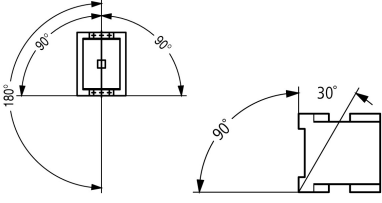
Product range			Contactors
Application			Contactors for Motors
Subrange			Standard devices greater than 170 A
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Squirrel-cage motors: starting, switching off during running AC-4: Squirrel-cage motors: starting, plugging, reversing, inching
Connection technique			Screw connection
Rated operational current			
AC-3			
380 V 400 V	I_e	A	225
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	386
enclosed	I_{th}	A	275
Conventional free air thermal current, 1 pole			
open	I_{th}	A	707
enclosed	I_{th}	A	636
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	70
380 V 400 V	P	kW	110
660 V 690 V	P	kW	150
1000 V	P	kW	108
AC-4			
220 V 230 V	P	kW	51
380 V 400 V	P	kW	90
660 V 690 V	P	kW	110
1000 V	P	kW	77
Contact sequence			
Can be combined with auxiliary contact			DILM1000-XHI...
Actuating voltage			RAC 240: 190 - 240 V 50/60 Hz
Voltage AC/DC			AC operation
Contacts			
N/O = Normally open			2 N/O
N/C = Normally closed			2 NC
Auxiliary contacts			
possible variants at auxiliary contact module fitting options			on the side: 2 x DILM1000-XHI(V)11-SI; 2 x DILM1000-XHI11-SA
Side mounting auxiliary contacts			
Instructions			integrated suppressor circuit in actuating electronics 660 V, 690 V or 1000 V: not directly reversing

Approvals

Product Standards
UL File No.

IEC/EN 60947-4-1; UL508;CSA-C22.2 No.14-05; CE marking
E29096

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	x 10 ⁶	10
DC operated	Operations	x 10 ⁶	10
Operating frequency, mechanical			
AC operated	Operations/h		3000
DC operated	Operations/h		3000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature		°C	
Open		°C	- 40 - + 60
Enclosed		°C	- 40 - + 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	10
N/C contact		g	8
Protection type			IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof with terminal shroud or terminal block
Weight			
AC operated		kg	3.54
DC operated		kg	3.54
Weight		kg	3.54
Terminal capacity main cable			
Flexible with cable lug		mm ²	50 - 185
Stranded with cable lug		mm ²	70 - 185
Solid or stranded		AWG	2/0 - 250 MCM
Flat conductor	Lamellenzah x Breite x Dicke	mm	Fixing with flat cable terminal or cable terminal blocks See terminal capacity for cable terminal blocks
Busbar	Breite	mm	32
Main cable connection screw/bolt			M10
Tightening torque		Nm	24
Terminal capacity control circuit cables			
Solid		mm ²	1 x (0.75 - 2.5) 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	2 x (18 - 12)
Control circuit cable connection screw/bolt			M3.5
Tightening torque		Nm	1.2

Tool			
Main cable			
Open-end spanner		mm	16
Control circuit cables			
Pozidriv screwdriver		Size	2
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	1000
Rated operational voltage	U_e	V AC	1000
Safe isolation to EN 61140			
between coil and contacts		V AC	500
between the contacts		V AC	500
Making capacity (p.f. to IEC/EN 60947)		A	2700
Breaking capacity			
220 V 230 V		A	2250
380 V 400 V		A	2250
500 V		A	2250
660 V 690 V		A	2250
1000 V		A	760
Component lifespan			
			AC1: See -> Engineering, characteristic curves AC3: See -> Engineering, characteristic curves AC4: See -> Engineering, characteristic curves
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	315
690 V	gG/gL 690 V	A	250
1000 V	gG/gL 1000 V	A	160
Type "1" coordination			
400 V	gG/gL 500 V	A	400
690 V	gG/gL 690 V	A	315
1000 V	gG/gL 1000 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	386
at 50 °C	$I_{th} = I_e$	A	345
at 55 °C	$I_{th} = I_e$	A	329
at 60 °C	$I_{th} = I_e$	A	315
enclosed	I_{th}	A	275
Notes			At maximum permissible ambient air temperature.
Conventional free air thermal current, 1 pole			
Note			at maximum permissible ambient air temperature
open	I_{th}	A	707
enclosed	I_{th}	A	636

AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	225
240 V	I_e	A	225
380 V 400 V	I_e	A	225
415 V	I_e	A	225
440V	I_e	A	225
500 V	I_e	A	225
660 V 690 V	I_e	A	160
1000 V	I_e	A	76
Motor rating			
220 V 230 V	P	kWh	
240V	P	kW	70
380 V 400 V	P	kW	110
415 V	P	kW	132
440 V	P	kW	138
500 V	P	kW	160
660 V 690 V	P	kW	150
1000 V	P	kW	108
AC-4			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	164
240 V	I_e	A	164
380 V 400 V	I_e	A	164
415 V	I_e	A	164
440 V	I_e	A	164
500 V	I_e	A	164
660 V 690 V	I_e	A	120
1000 V	I_e	A	55
Motor rating			
220 V 230 V	P	kWh	
240 V	P	kW	51
380 V 400 V	P	kW	90
415 V	P	kW	96
440 V	P	kW	102
500 V	P	kW	116
660 V 690 V	P	kW	110
1000 V	P	kW	77

Condensator operation

Individual compensation, rated operational current I_e of three-phase capacitors			
Open			
up to 525 V		A	220
690 V		A	133
Max. inrush current peak		$x I_e$	30
Component lifespan	Operations	$x 10^6$	0.1
Max. operating frequency		Ops/h	200

DC

Rated operational current, open			
DC-1			
60 V	I_e	A	300

110 V	I _e	A	300
220 V	I _e	A	300
440 V	I _e	A	11
DC-3			
60 V	I _e	A	300
110 V	I _e	A	300
220 V	I _e	A	300
DC-5			
60 V	I _e	A	300
110 V	I _e	A	300
220 V	I _e	A	300

Current heat loss

3-pole at I _{th}		W	45
Current heat loss at I _e to AC-3/400 V		W	23

Magnet systems

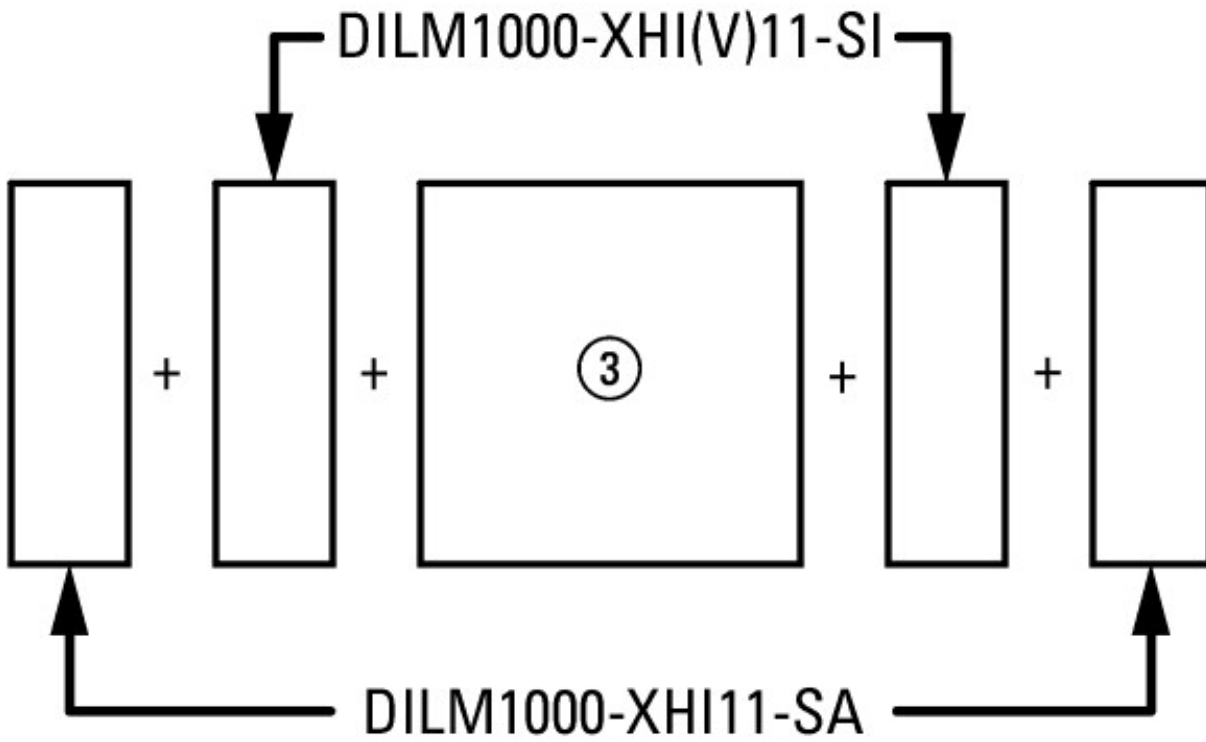
Voltage tolerance		x U _c	
U _c			190 - 240 V 50/60 Hz
AC operated	Pick-up	x U _c	0.8 x U _{c min} - 1.15 x U _{c max}
AC operated	Drop-out	x U _c	0.25 x U _{c min} - 0.6 x U _{c max}
Power consumption of the coil in a cold state and 1.0 x U _c			
Pull-in power	Pick-up	VA	210
Pull-in power	Pick-up	W	180
Sealing power	Sealing	VA	2.6
Sealing power	Sealing	W	2.1
Duty factor		% DF	100
Switching times at 100 % U _c (approximate values)			
Main contacts			
Closing delay		ms	60
Opening delay		ms	40
PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2)			
High		V	15
Low		V	5

Electromagnetic compatibility (EMC)

Electromagnetic compatibility			This product is designed for operation in industrial environments (environment 2). The use in residential environments (environment 1) could cause electrical interference so that addition suppression must be planned.
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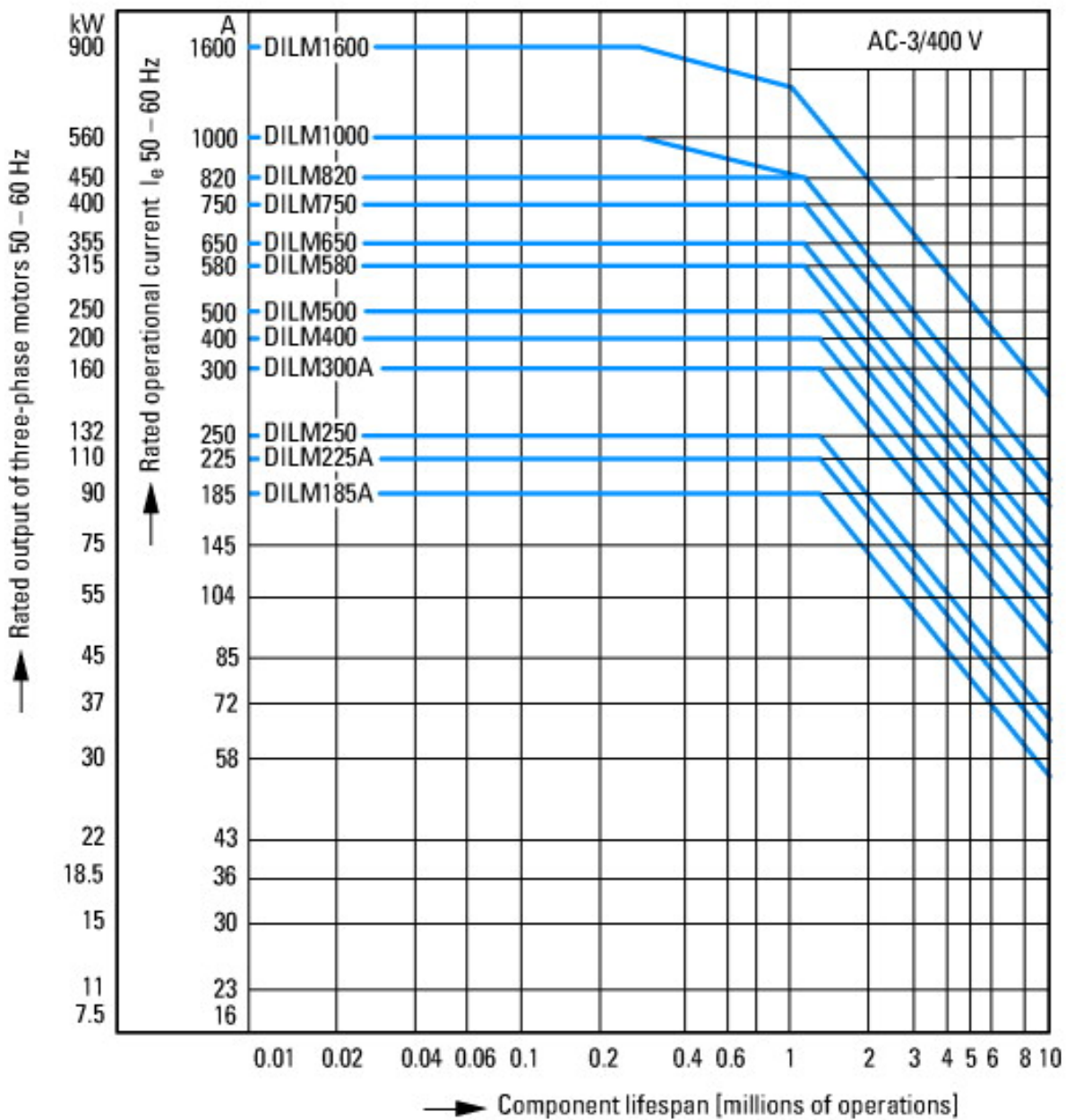
Technical data ETIM 5.0

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	356
Rated operation current I _e at AC-3, 400 V		A	225
Rated operation power at AC-3, 400 V		kW	110
Rated operation current I _e at AC-4, 400 V		A	164
Rated operation power I _e at AC-4, 400 V		kW	90
Modular version			No
Number of auxiliary contacts as normally open contact			2
Number of auxiliary contacts as normally closed contact			2
Connection type main current circuit			Rail connection
Number of normally closed contacts as main contact			0

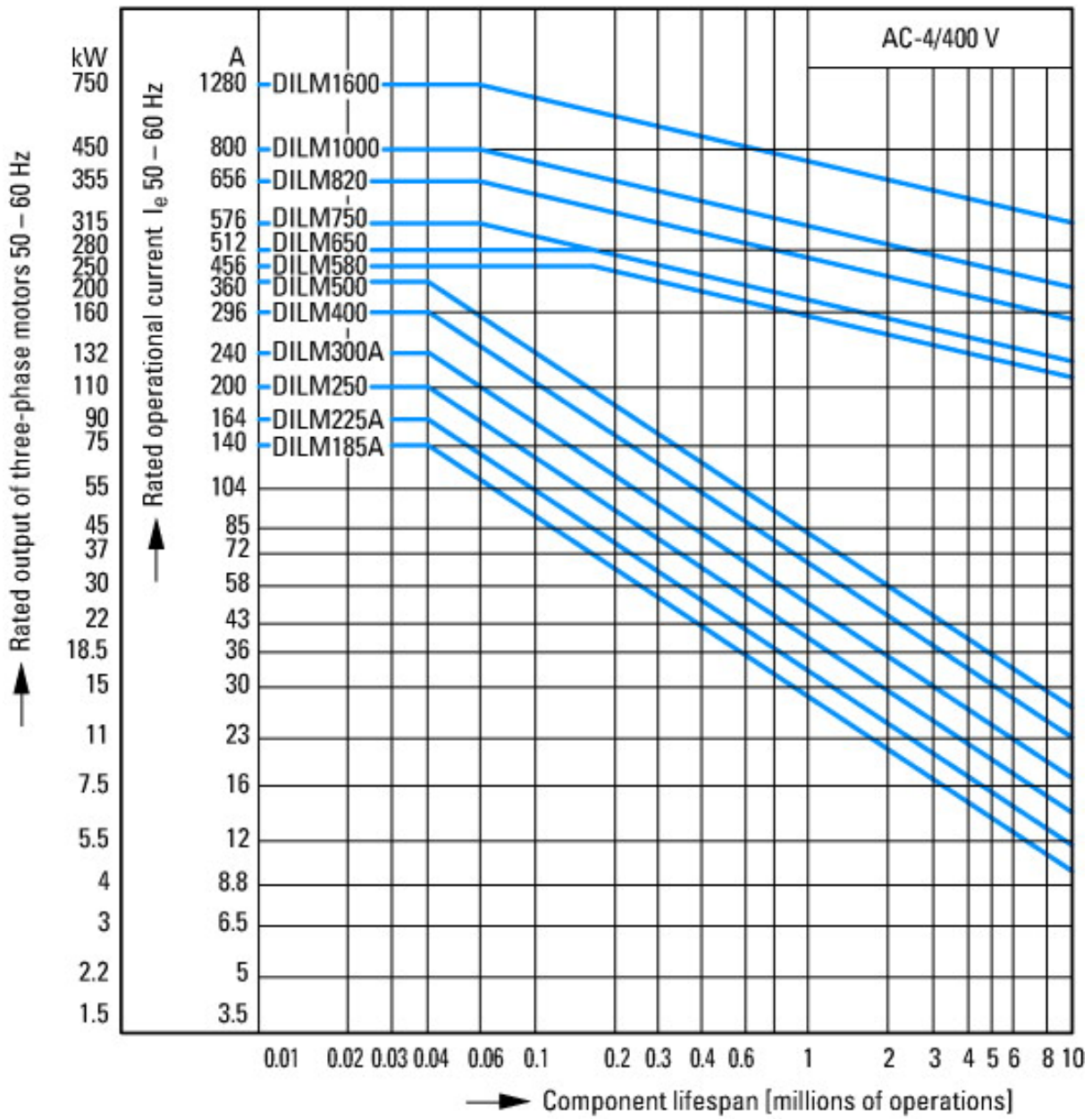
Characteristics

on the side: 2 x DILM1000-XHI(V)11-SI; 2 x DILM1000-XHI11-SA

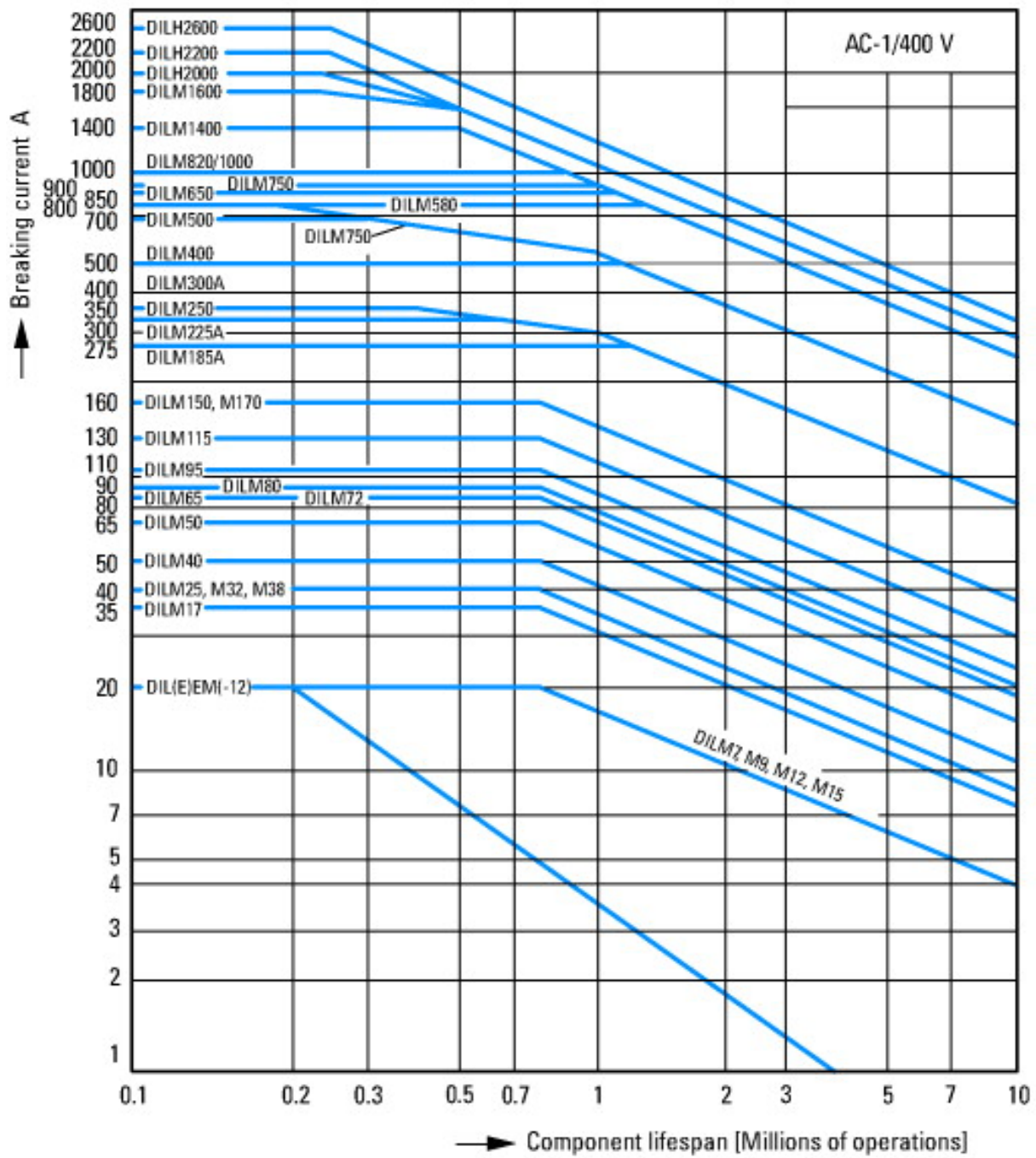
Characteristic curves



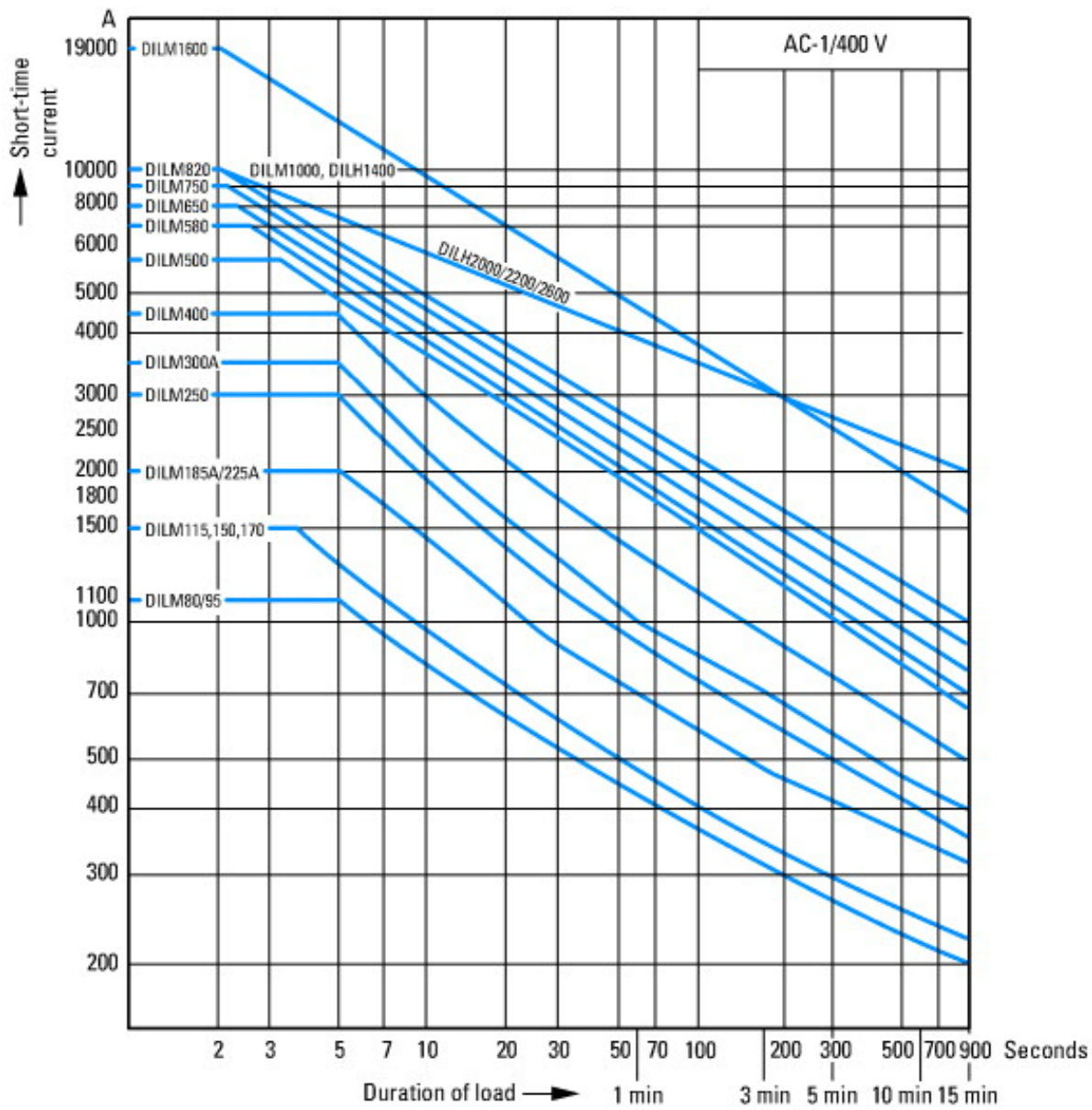
Normal switching duty
 Normal AC induction motor
 Operating characteristics
 Switch on: from stop
 Switch off: during run
 Electrical characteristics:
 Switch on: up to 6 x Rated motor current
 Switch off: up to 1 x Rated motor current
 Utility category
 100 % AC-3
 Typical Applications
 Compressors
 Lifts
 Mixers
 Pumps
 Escalators
 Agitators
 fan
 Conveyor belts
 Centrifuges
 Hinged flaps
 Bucket-elevator
 Air-conditioning systems
 General drives for 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

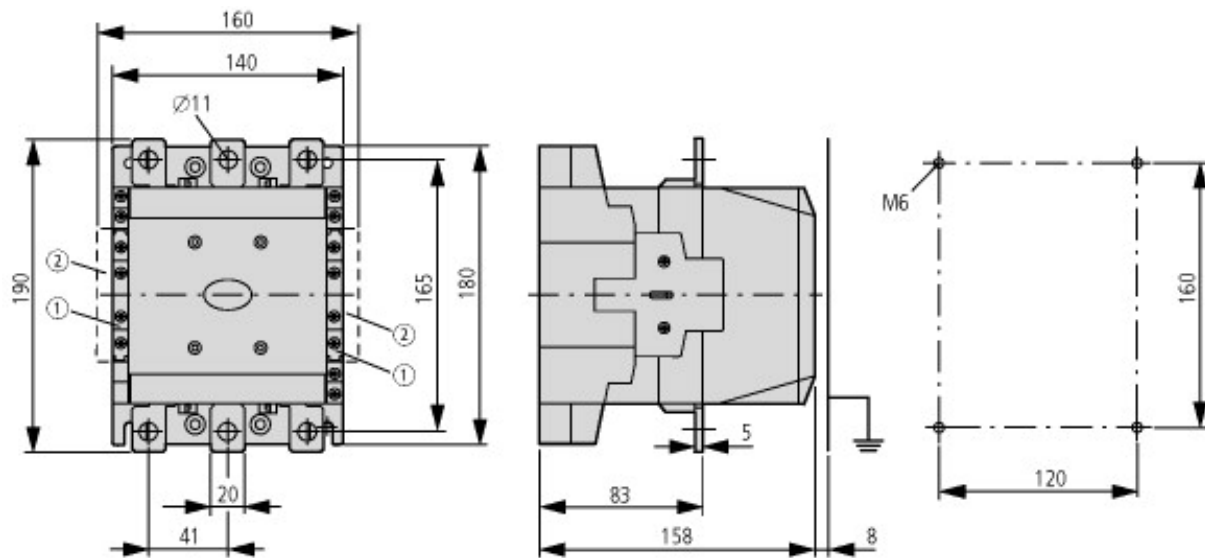


Switching duty for non-motor loads, 3-pole, 4-pole
 Operating characteristics
 Non-inductive or slightly inductive loads
 Electrical characteristics
 Make: 1 x rated current
 Break: 1 x rated current
 Utilization category
 100 % AC-1
 Typical applications
 Electric heat



Short-time loading, 3-pole
 Time interval between two loading cycles: 15 minutes

Dimensions



- ① DILM1000-XHI(V)11-SI
- ② DILM1000-XHI11-SA

Additional product information (links)

IL03406001Z Contactors	
IL03406001Z Contactors	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03406001Z2010_06.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