



Contactor, 3p+2N/O+2N/C, 160kW/400V/AC3



Powering Business Worldwide™

Part no. DILM300A-
Article no. S/22(110-120V50/60HZ)
Catalog No. 139558
 XTCS300L22A

Delivery programme

Product range
 Application
 Subrange
 Utilization category

Contactors
 Contactors for Motors
 Standard devices greater than 170 A
 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
 Screw connection

Connection technique

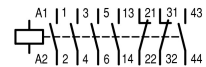
Rated operational current

AC-3	380 V 400 V	I_e	A	300
AC-1	Conventional free air thermal current, 3 pole, 50 - 60 Hz			
	Open at 40 °C	$I_{th} = I_e$	A	490
	enclosed	I_{th}	A	315
	Conventional free air thermal current, 1 pole			
	open	I_{th}	A	875
	enclosed	I_{th}	A	785

Max. rating for three-phase motors, 50 - 60 Hz

AC-3	220 V 230 V	P	kW	90
	380 V 400 V	P	kW	160
	660 V 690 V	P	kW	240
	1000 V	P	kW	132
AC-4	220 V 230 V	P	kW	75
	380 V 400 V	P	kW	132
	660 V 690 V	P	kW	160
	1000 V	P	kW	109

Contact sequence



Can be combined with auxiliary contact

Actuating voltage

Voltage AC/DC

Contacts

N/O = Normally open

N/C = Normally closed

Auxiliary contacts

possible variants at auxiliary

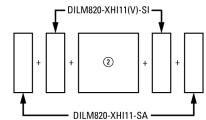
contact module fitting options

Side mounting auxiliary contacts

DILM820-XHI...
 110 - 120 V 50/60 Hz
 AC operation

2 N/O
 2 NC

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



integrated suppressor circuit in actuating electronics
 660 V, 690 V or 1000 V: not directly reversing

Instructions

Notes

DILM...-S contactors are triggered in the conventional manner



Standstill in an emergency (Emergency-Stop)

Approvals

Product Standards

UL File No.

UL Category Control No.

CSA File No.

CSA Class No.

North America Certification

Specially designed for North America

IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking

E29096

NLDX

1017510

3211-04

UL listed, CSA certified

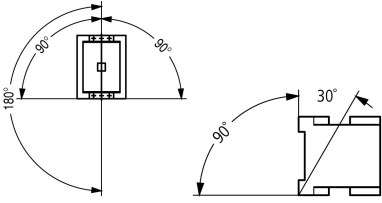
No

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	7.1
DC operated		kg	7.1
Weight		kg	7.1
Terminal capacity main cable			
Flexible with cable lug		mm ²	50 - 240
Stranded with cable lug		mm ²	70 - 240
Solid or stranded		AWG	2/0 - 500 MCM
Flat conductor	Lamellenzahl x Breite x Dicke	mm	Fixing with flat cable terminal or cable terminal blocks See terminal capacity for cable terminal blocks
Busbar	Breite	mm	25
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	3600
Breaking capacity			
220 V 230 V		A	3000
380 V 400 V		A	3000
500 V		A	3000
660 V 690 V		A	3000
1000 V		A	950
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	400
690 V	gG/gL 690 V	A	315
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	400
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	490
at 50 °C	$I_{th} = I_e$	A	438
at 55 °C	$I_{th} = I_e$	A	418
at 60 °C	$I_{th} = I_e$	A	400
enclosed	I_{th}	A	315
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	875
enclosed	I_{th}	A	785
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	300
240 V	I_e	A	300
380 V 400 V	I_e	A	300

415 V
 440V
 500 V
 660 V 690 V
 1000 V

Motor rating

220 V 230 V
 240V
 380 V 400 V
 415 V
 440 V
 500 V
 660 V 690 V
 1000 V

AC-4

Rated operational current

Open, 3-pole: 50 – 60 Hz

220 V 230 V
 240 V
 380 V 400 V
 415 V
 440 V
 500 V
 660 V 690 V
 1000 V

Motor rating

220 V 230 V
 240 V
 380 V 400 V
 415 V
 440 V
 500 V
 660 V 690 V
 1000 V

Condensor operation

Individual compensation, rated operational current I_e of three-phase capacitors

Open

up to 525 V
 690 V

Max. inrush current peak

Component lifespan

Max. operating frequency

DC

Rated operational current, open

DC-1

60 V
 110 V
 220 V
 440 V

DC-3

60 V
 110 V

I_e	A	300
I_e	A	300
I_e	A	300
I_e	A	250
I_e	A	95
P	kWh	
P	kW	90
P	kW	100
P	kW	160
P	kW	180
P	kW	185
P	kW	215
P	kW	240
P	kW	132
I_e	A	200
I_e	A	200
I_e	A	200
I_e	A	200
I_e	A	200
I_e	A	200
I_e	A	200
I_e	A	76
P	kWh	
P	kW	75
P	kW	82
P	kW	132
P	kW	142
P	kW	150
P	kW	172
P	kW	160
P	kW	109

	A	307
	A	177
	$\times I_e$	30
Operations	$\times 10^6$	0.1
	Ops/h	200

I_e	A	300
I_e	A	300
I_e	A	300
I_e	A	11
I_e	A	300
I_e	A	300

220 V

DC-5

60 V

110 V

220 V

Current heat loss

3-pole at I_{th} Current heat loss at I_e to AC-3/400 V

Magnet systems

Voltage tolerance

 U_c

AC operated

AC operated

Power consumption of the coil in a cold state and $1.0 \times U_c$

Note on power consumption

Pull-in power

Pull-in power

Sealing power

Sealing power

Duty factor

Switching times at 100 % U_c (approximate values)

Main contacts

Closing delay

Opening delay

Behaviour in marginal and transitional conditions

Sealing

Voltage interruptions

 $(0 \dots 0.2 \times U_{c \min}) \approx 10 \text{ ms}$
 $(0 \dots 0.2 \times U_{c \min}) > 10 \text{ ms}$

Voltage drops

 $(0.2 \dots 0.6 \times U_{c \min}) \approx 12 \text{ ms}$
 $(0.2 \dots 0.6 \times U_{c \min}) > 12 \text{ ms}$
 $(0.6 \dots 0.7 \times U_{c \min})$

Excess voltage

 $(1.15 \dots 1.3 \times U_{c \max})$

Pick-up phase

 $(0 \dots 0.7 \times U_{c \min})$
 $(0.7 \times U_{c \min} \dots 1.15 \times U_{c \max})$

Admissible transitional contact resistance (of the external control circuit device when actuating A11)

PLC signal level (A3 - A4) to IEC/EN 61131-2 (type 2)

High

Low

Electromagnetic compatibility (EMC)

Electromagnetic compatibility

I_e	A	300
I_e	A	300
I_e	A	300
I_e	A	300

	W	37
	W	21

	$x U_c$	
		110 - 120 V 50/60 Hz
Pick-up	$x U_c$	$0.85 \times U_{c \min} - 1.1 \times U_{c \max}$
Drop-out	$x U_c$	$0.2 \times U_{c \min} - 0.4 \times U_{c \max}$
		$u_k \approx 10\%$
Pick-up	VA	360
Pick-up	W	325
Sealing	VA	4.3
Sealing	W	3.3
	% DF	100
		Time is bridged successfully
		Drop-out of the contactor
		Time is bridged successfully
		Drop-out of the contactor
		Contactor remains switched on
		Contactor remains switched on
		Contactor does not switch on
		Contactor switches on with certainty
	mΩ	≈ 500
	V	15
	V	5

	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

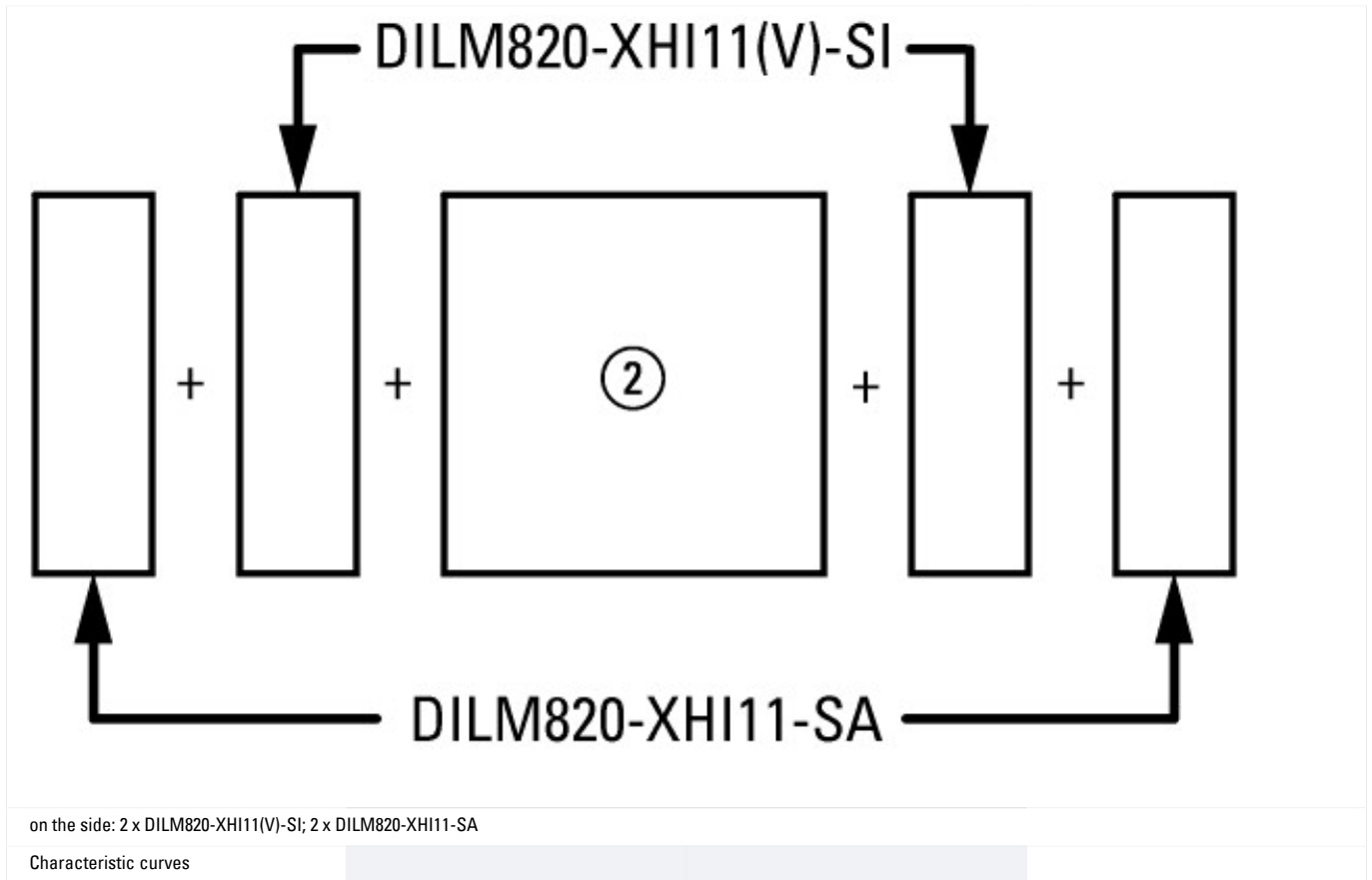
Low-voltage industrial components (EG000017) / Magnet contactor, AC-switching (EC000066)

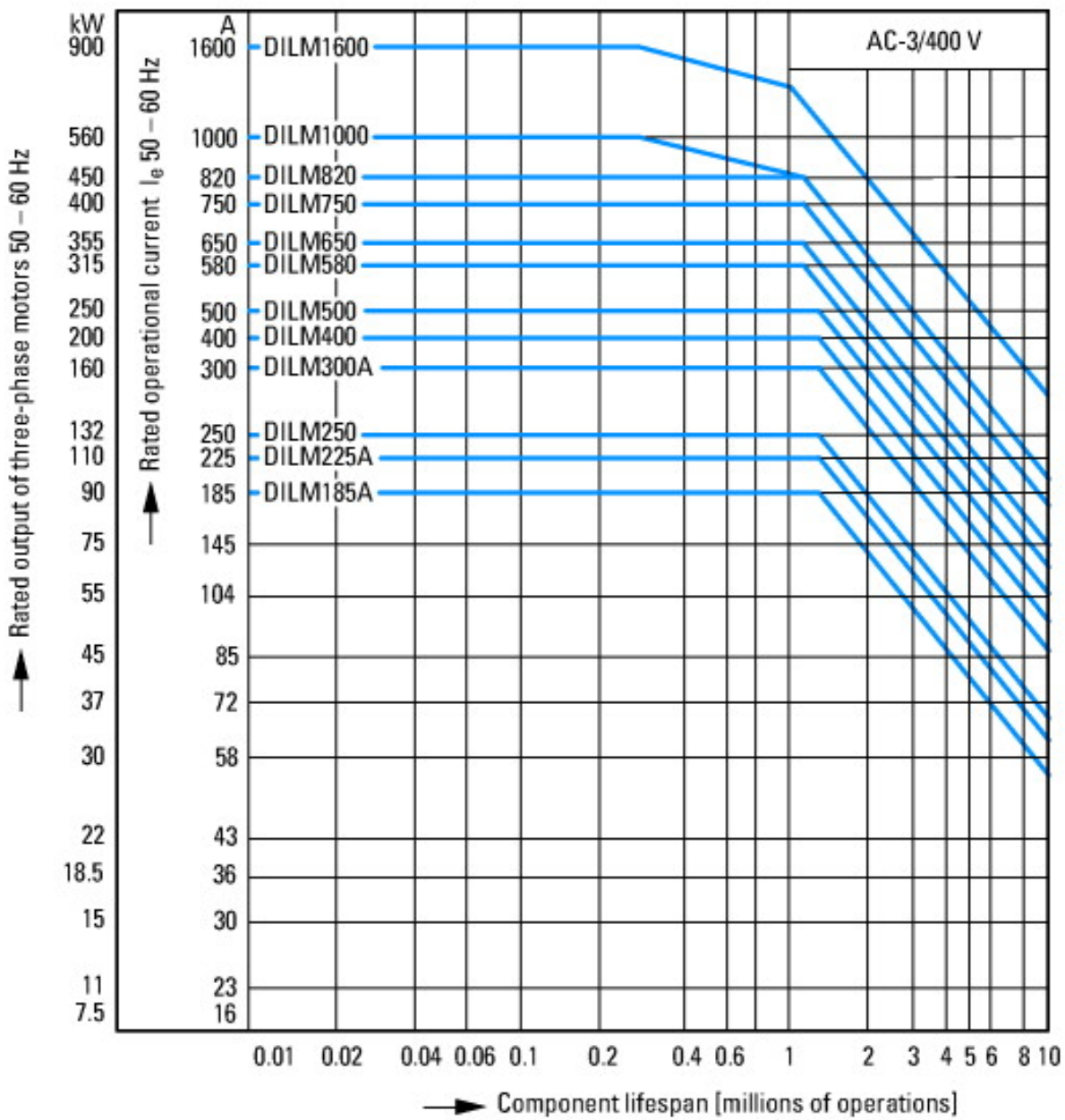
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8-27-37-10-03 [AAB718011])

Rated control supply voltage U_s at AC 50HZ	V	110 - 120
Rated control supply voltage U_s at AC 60HZ	V	110 - 120
Rated control supply voltage U_s at DC	V	0 - 0
Voltage type for actuating		AC

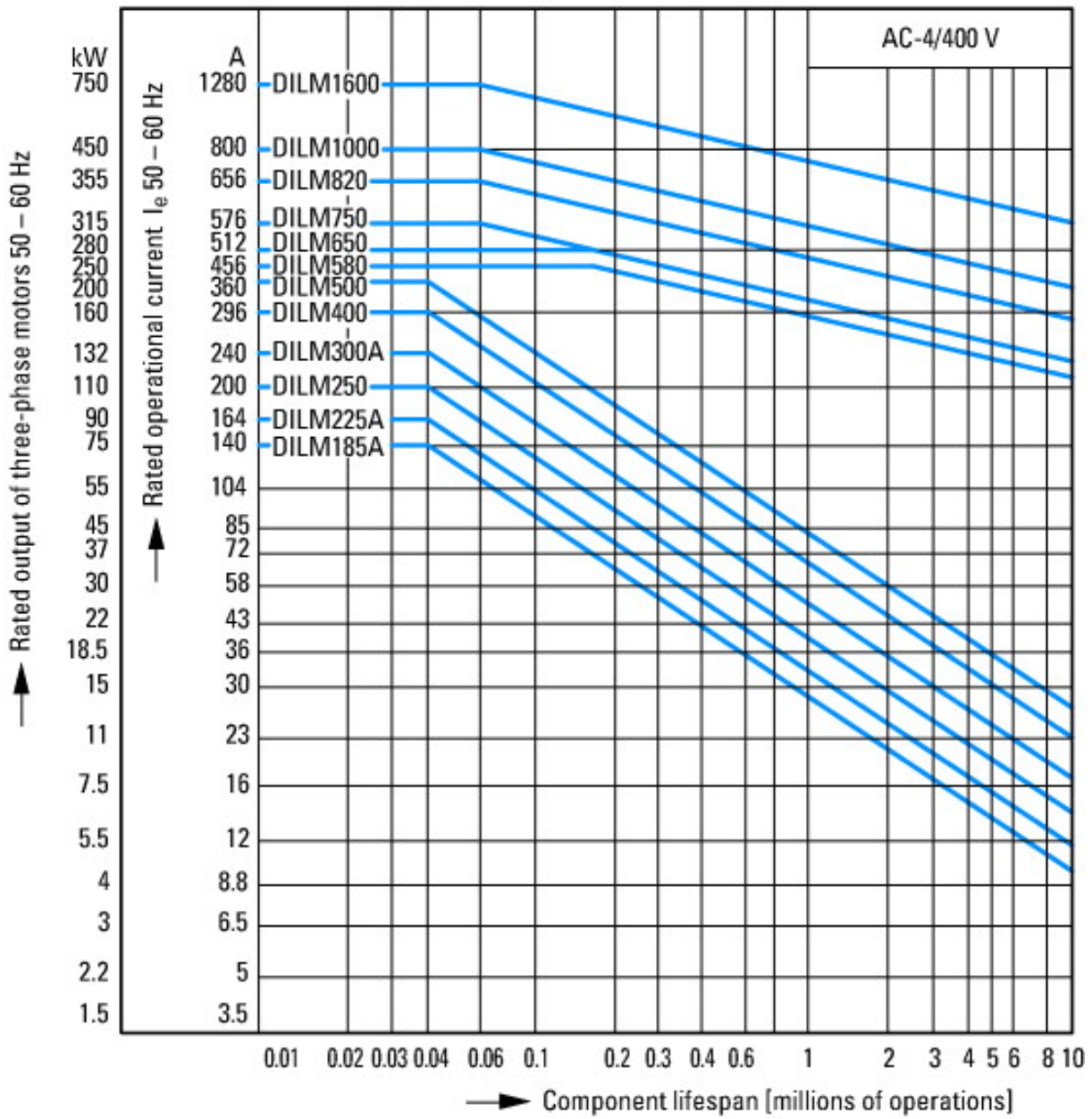
Rated operation current I _e at AC-1, 400 V	A	490
Rated operation current I _e at AC-3, 400 V	A	300
Rated operation power at AC-3, 400 V	kW	160
Rated operation current I _e at AC-4, 400 V	A	240
Rated operation power I _e at AC-4, 400 V	kW	132
Modular version		No
Number of auxiliary contacts as normally 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
Number of main contacts as normally open contact		3

Characteristics

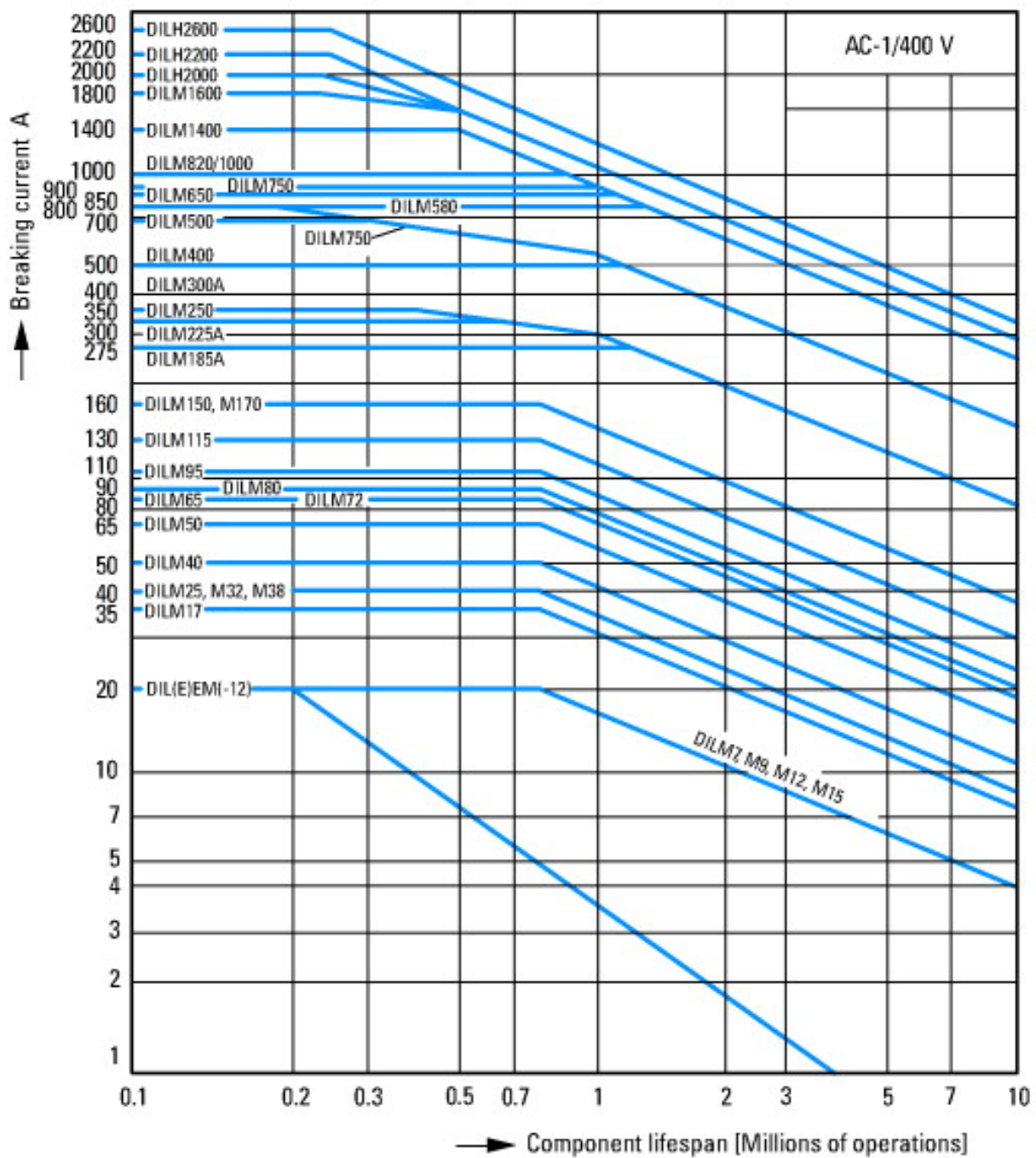




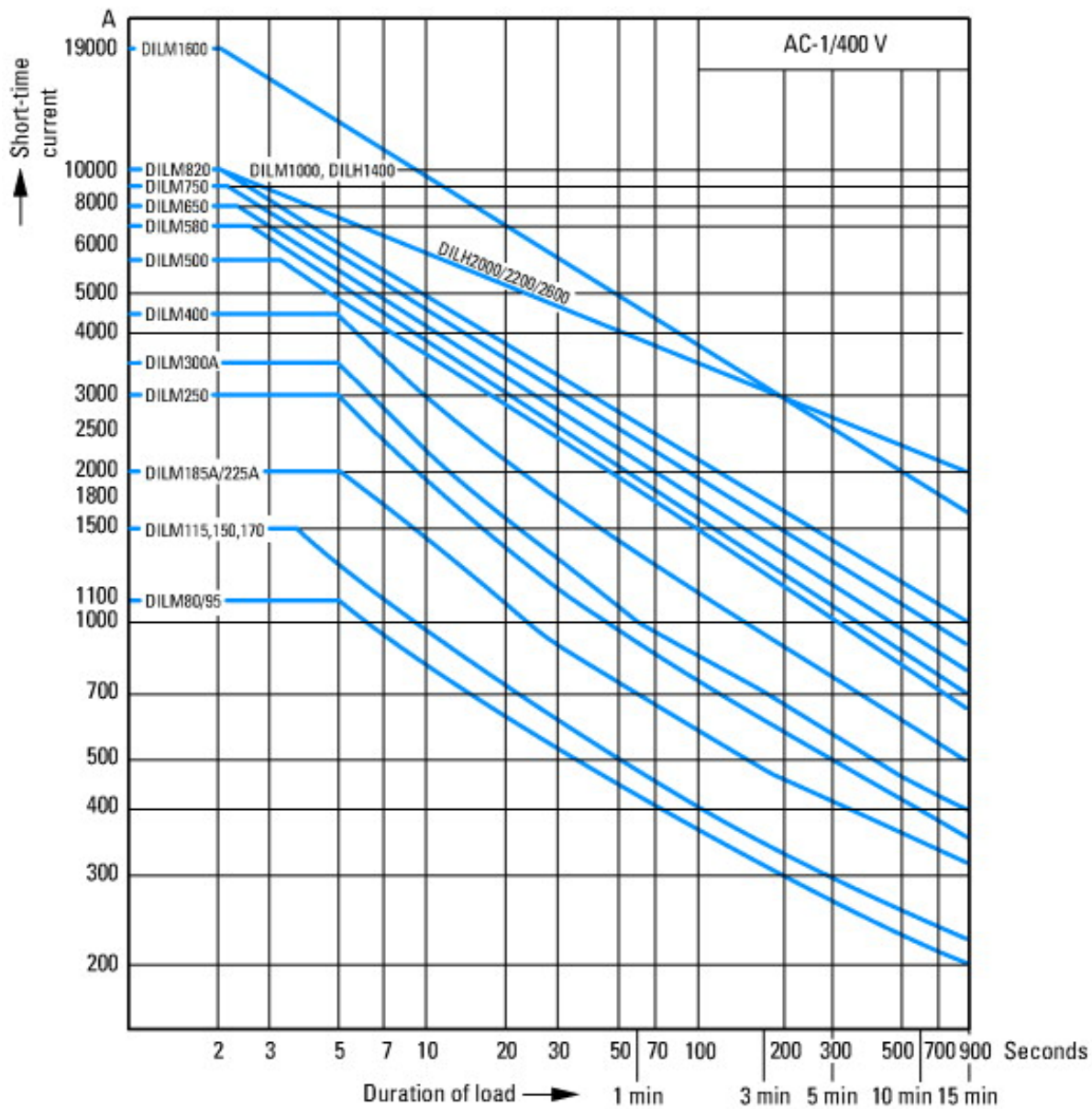
Normal switching duty
 Normal AC induction motor
 Operating characteristics
 Switch on: from stop
 Switch off: during run
 Electrical characteristics:
 Switch on: up to 6 x Rated motor current
 Switch off: up to 1 x Rated motor current
 Utility category
 100 % AC-3
 Typical Applications
 Compressors
 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

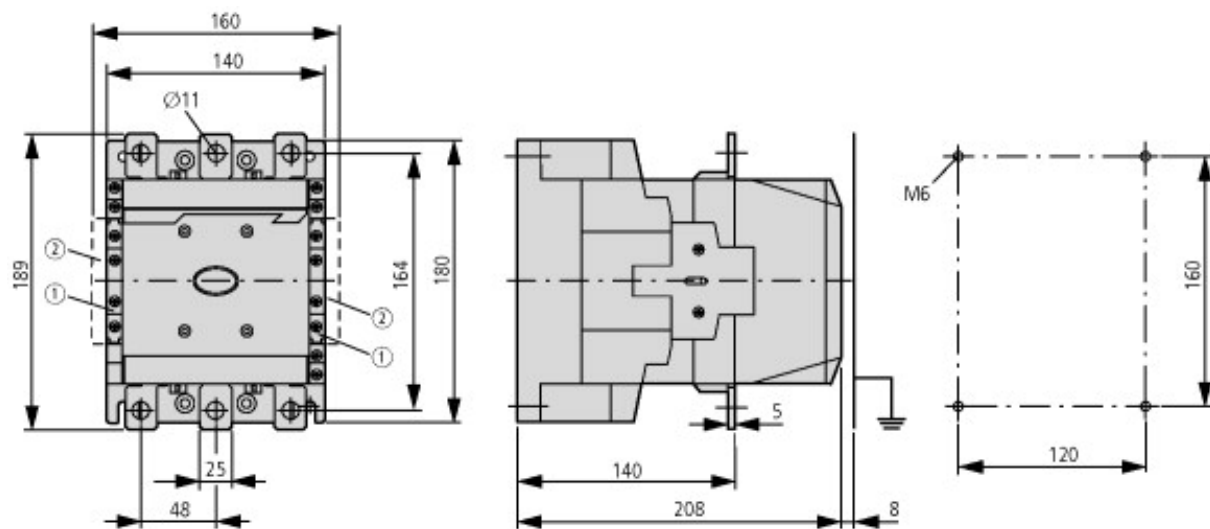


Switching duty for non-motor loads, 3-pole, 4-pole
 Operating characteristics
 Non-inductive or slightly inductive loads
 Electrical characteristics
 Make: 1 x rated current
 Break: 1 x rated current
 Utilization category
 100 % AC-1
 Typical applications
 Electric heat



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

Dimensions



- ① DILM820-XHI11(V)-SI
- ② DILM820-XHI11-SA

Additional product information (links)

IL03406002Z (AWA2100-1639) Contactors >170 A	
IL03406002Z (AWA2100-1639) Contactors >170 A	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03406002Z2012_09.pdf
IL03406005Z (AWA2100-2212) Contactors >170 A	
IL03406005Z (AWA2100-2212) Contactors >170 A	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03406005Z2010_07.pdf
http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.84	
http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.86	
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