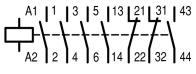
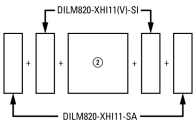
Contactor 315kW/400V/AC-3

Part no. DILM570-S/22(220-240V50/60HZ)

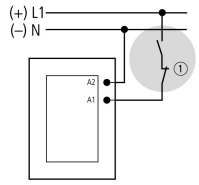
Article no. 110744

Delivery programme

Product range			Contactors
Application			Contactors for Motors
Subrange			Standard devices greater than 150 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 terminals
Rated operational current			
AC-3			
380 V 400 V	I_e	A	580
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	920
Conventional free air thermal current, 1 pole			
open	I_{th}	A	1875
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V			
220 V 230 V	P	kW	185
380 V 400 V			
380 V 400 V	P	kW	315
660 V 690 V			
660 V 690 V	P	kW	344
1000 V	P	kW	132
AC-4			
220 V 230 V			
230 V	P	kW	112
380 V 400 V			
400 V	P	kW	200
660 V 690 V			
690 V	P	kW	344
1000 V	P	kW	132
Contact sequence			
Can be combined with auxiliary contact			
For use with			DILM820-XHI…
Actuating voltage			220 - 240 V 50/60 Hz
Voltage AC/DC			AC operation
Contacts			
N/O = Normally open			2 N/O
N/C = Normally closed			2 B
Auxiliary contacts			
possible variants at auxiliary contact module fitting options			on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA
Side mounting auxiliary contacts			
Instructions			integrated suppressor circuit in actuating electronics 660 V, 690 V or 1000 V: not directly reversing

Notes

DILM…-S contactors are triggered in the conventional manner

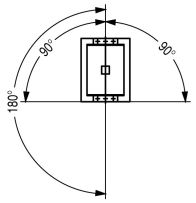
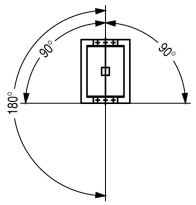
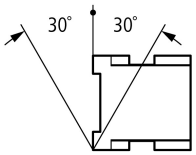


1 Standstill in an emergency (Emergency-Stop)

Approvals

Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E29096
UL CCN	NLDX
CSA File No.	012528
CSA Class No.	3211-04
NA Certification	UL listed, CSA certified
Specially designed for NA	No

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	x 10^6	7
DC operated	Operations	x 10^6	7
Operating frequency, mechanical			
AC operated	Operations/h		2000
DC operated	Operations/h		2000
Climatic proofing			Damp heat, constant to IEC 60068-2-78 Damp heat, cyclic to IEC 60068-2-30
Ambient temperature		°C	
Open		°C	- 25 - 60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			
Mounting position, AC- and DC operated			 
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			
Weight		kg	8
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	Number of segments x width x thickness	mm	Fixing with flat cable terminal or cable terminal blocks See terminal capacity for cable terminal blocks
Busbar	Width	mm	30
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			
AC	U_i	V AC	1000
Rated operational voltage	U_e	V AC	1000
Safe isolation to VDE 0106 Part 101 and Part 101/A1			
between coil and contacts		V AC	500
between the contacts		V AC	500
Making capacity (p.f. to IEC/EN 60947)		A	6000
Breaking capacity			
220 V 230 V		A	5800
380 V 400 V AC		A	5800
500 V		A	5800
660 690 V AC		A	5800
1000 V		A	950
Short-circuit rating			
Short-circuit protection maximum fuse			
Type “2” coordination			
400 V	gG/gL 500 V	A	500
690 V	gG/gL 690 V	A	500
1000 V	gG/gL 1000 V	A	200
Type “1” coordination			
400 V	gG/gL 500 V	A	800

690 V	gG/gL 690 V	A	630
1000 V	gG/gL 1000 V	A	250

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	920
at 50 °C	$I_{th} = I_e$	A	821
at 55 °C	$I_{th} = I_e$	A	783
at 60 °C	$I_{th} = I_e$	A	750
Conventional free air thermal current, 1 pole			
open	I_{th}	A	1875
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	580
240 V	I_e	A	580
380 V 400 V	I_e	A	580
415 V	I_e	A	580
440V	I_e	A	580
500 V	I_e	A	500
660 V 690 V	I_e	A	360
1000 V	I_e	A	95
Motor rating	P	kWh	
220 V 230 V	P	kW	185
240V	P	kW	200
380 V 400 V	P	kW	315
415 V	P	kW	348
440 V	P	kW	370
500 V	P	kW	360
660 V 690 V	P	kW	344
1000 V	P	kW	132
AC-4			
Open, 3-pole: 50 – 60 Hz			
230 V	I_e	A	360
240 V	I_e	A	360
400 V	I_e	A	360
415 V	I_e	A	360
440 V	I_e	A	360
500 V	I_e	A	360
690 V	I_e	A	296
1000 V	I_e	A	95
Motor rating	P	kWh	
230 V	P	kW	112
240 V	P	kW	122
400 V	P	kW	200
415 V	P	kW	216
440 V	P	kW	229
500 V	P	kW	260
690 V	P	kW	344
1000 V	P	kW	132

Condensor operation

Individual compensation, rated operational current I_e of three-phase capacitors			
open			
up to 525 V		A	307
690 V		A	177
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	400
110 V	I_e	A	400
220 V	I_e	A	400
440 V	I_e	A	11
DC-3			
60 V	I_e	A	400
110 V	I_e	A	400
220 V	I_e	A	400
DC-5			
60 V	I_e	A	400
110 V	I_e	A	400
220 V	I_e	A	400

Current heat loss

3-pole at I_{th}		W	130
Current heat loss at I_e to AC-3/400 V		W	78

Magnet systems

Voltage tolerance		x U_c	
U_C			220 - 240 V 50/60 Hz
AC operated	Pick-up	x U_c	
	Pick-up	x U_c	0.85 x $U_{c\ min}$ - 1.1 x $U_{c\ max}$
Drop-out voltage AC operated	Drop-out	x U_c	
	Drop-out	x U_c	0.2 x $U_{c\ min}$ - 0.4 x $U_{c\ max}$
Power consumption of the coil in a cold state and 1.0 x U_c			
50 Hz	Pick-up	VA	450
AC operated	Pick-up	W	350
60 Hz	Pick-up	VA	715
60 Hz	Pick-up	W	645
Dual-frequency coil 50/60 Hz at 50 Hz	Sealing	VA	4.3
Dual-frequency coil 50/60 Hz at 50 Hz	Sealing	W	3.3
Dual-frequency coil 50/60 Hz at 60 Hz	Sealing	VA	4.3
Dual-frequency coil 50/60 Hz at 60 Hz	Sealing	W	3.3
Duty factor		% DF	100
Switching times at 100 % U_c (approximate values)			
Main contacts			
AC operated			
Closing delay		ms	80
Opening delay		ms	110
DC operated		ms	
Closing delay		ms	55
Opening delay		ms	50
Behaviour in marginal and transitional conditions			

Sealing			
Voltage interruptions			
(0 … 0.2 x $U_{c\ min}$) ≦ 10 ms			Time is bridged successfully
(0 … 0.2 x $U_{c\ min}$) > 10 ms			Drop-out of the contactor
Voltage drops			
(0.2 … 0.6 x $U_{c\ min}$) ≦ 12 ms			Time is bridged successfully
(0.2 … 0.6 x $U_{c\ min}$) > 12 ms			Drop-out of the contactor
(0.6 … 0.7 x $U_{c\ min}$)			Contactor remains switched on
Excess voltage			
(1.15 … 1.3 x $U_{c\ max}$)			Contactor remains switched on
(> 1.3 x $U_{c\ max}$) ≦ 3 s			Contactor remains switched on
(> 1.3 x $U_{c\ max}$) > 3 s			Drop-out of the contactor
Pick-up phase			
(0 … 0.7 x $U_{c\ min}$)			Contactor does not switch on
(0.7 x $U_{c\ min}$ … 1.15 x $U_{c\ max}$)			Contactor switches on with certainty
(> 1.15 x $U_{c\ max}$)			Contactor switches on with certainty

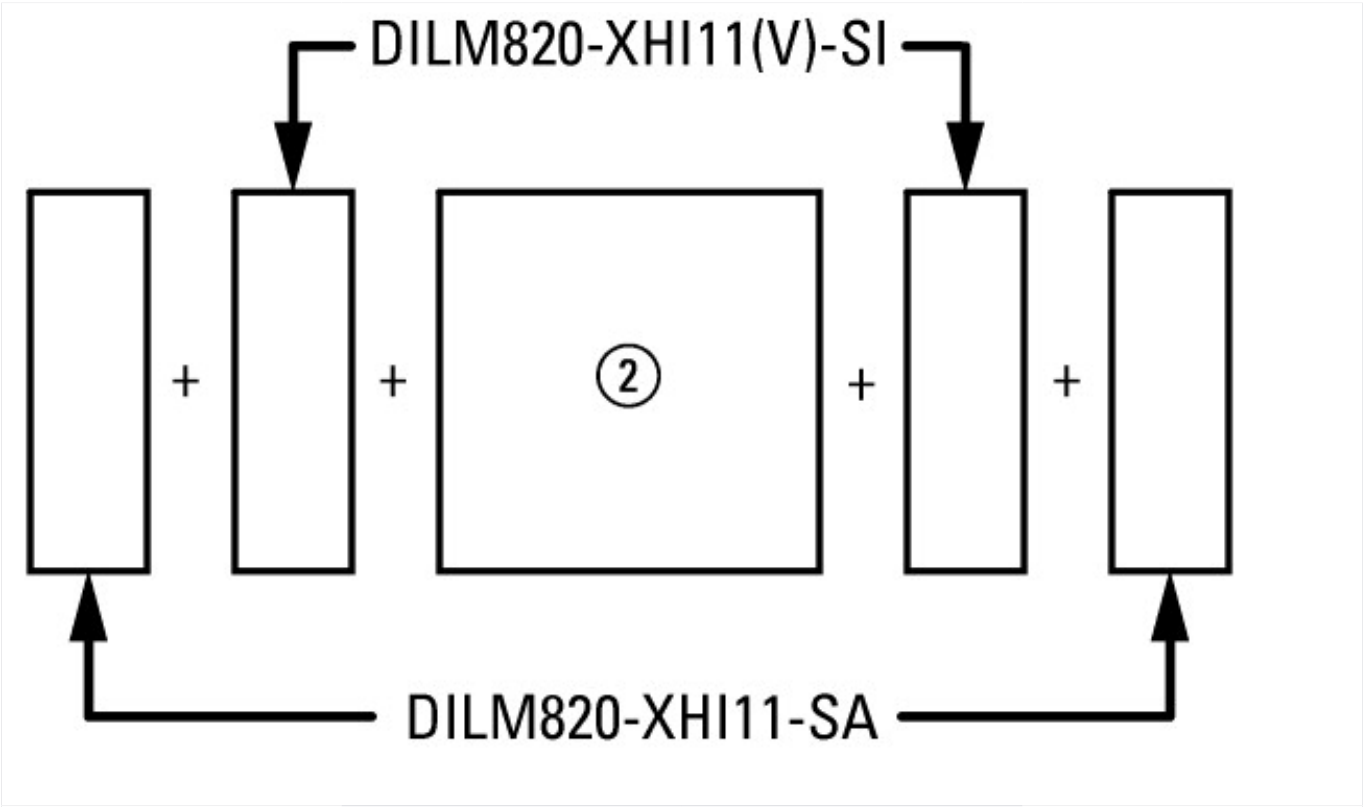
Electromagnetic compatibility (EMC)

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.

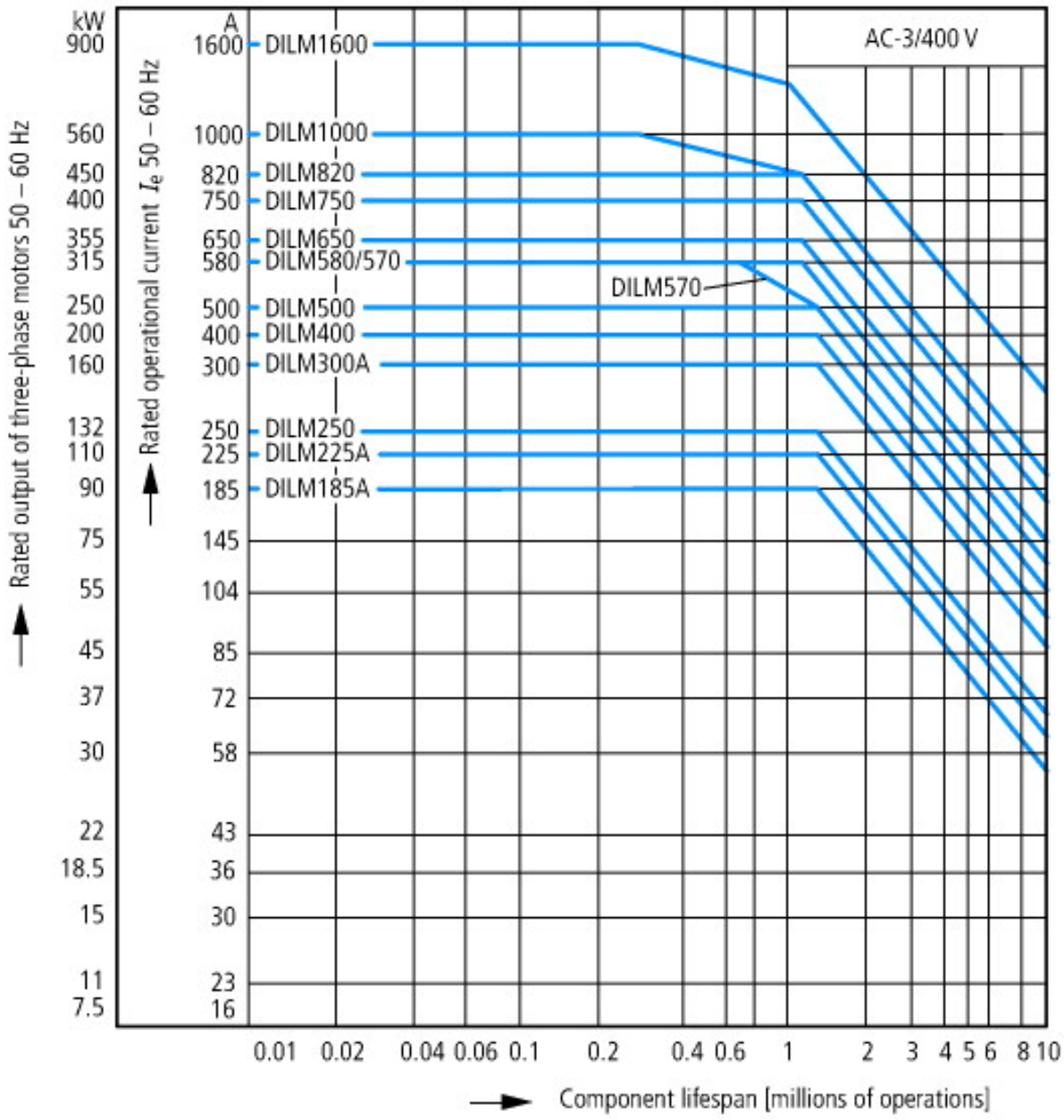
Technical data ETIM 4.0

Number of main contacts as N/Os			3
Rated operation current Ie at AC-1, 400 V			980
Connection type main circuit			Screw connection
Rated control voltage Us at AC 60HZ		V	240
Number of auxiliary contacts as N/Os			2
Rated control voltage Us at AC 50HZ		V	240
Number of auxiliary contacts as N/Cs			2
Suitable for rail-mounting			No
Rated control voltage Us at DC		V	0
Voltage type for actuation			AC
Rated operation current Ie at AC-3, 400 V		A	580
Number of N/Cs as main contact			0
Motor rating at AC-3, 400 V		kWh	315

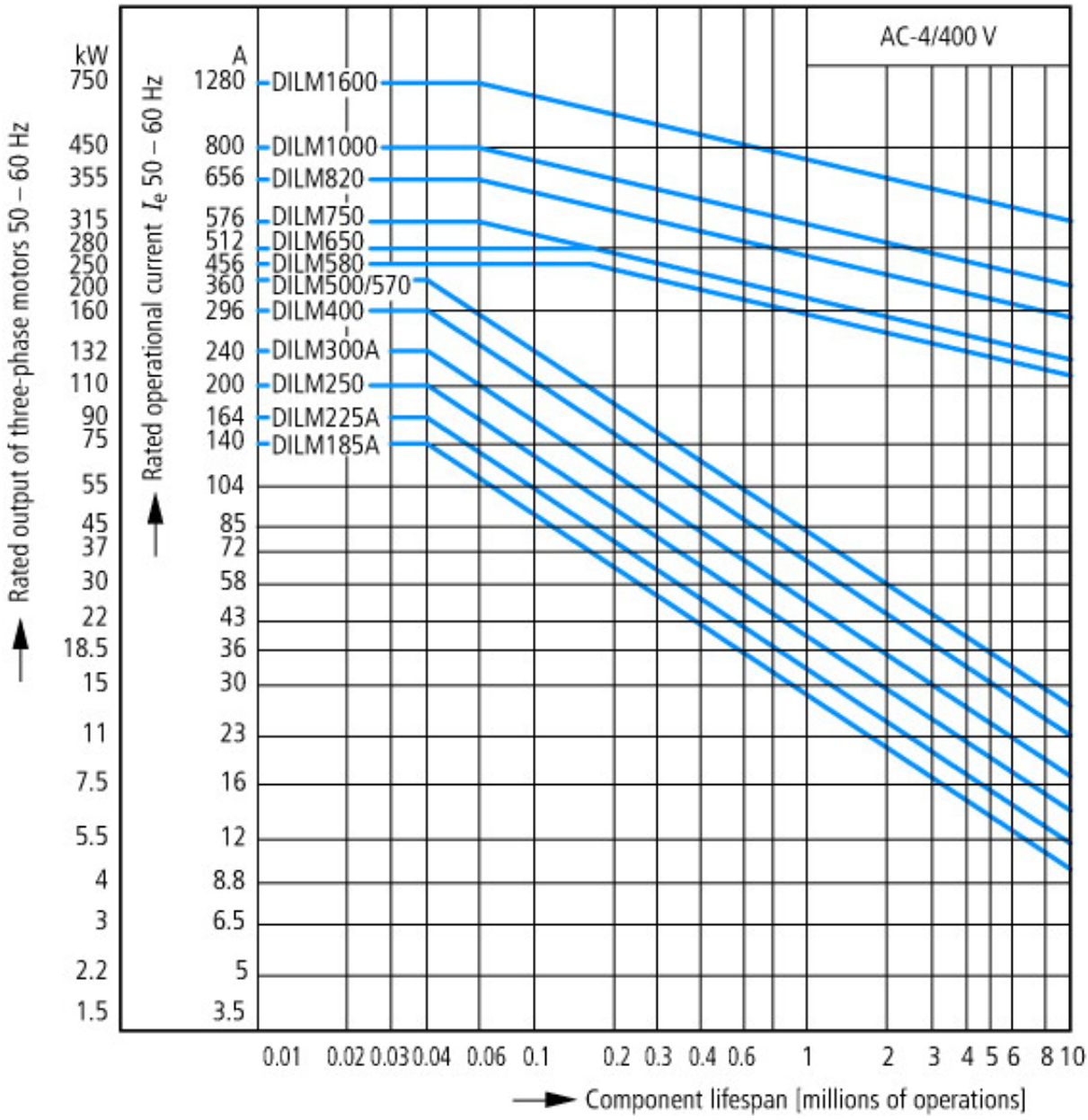
Characteristics



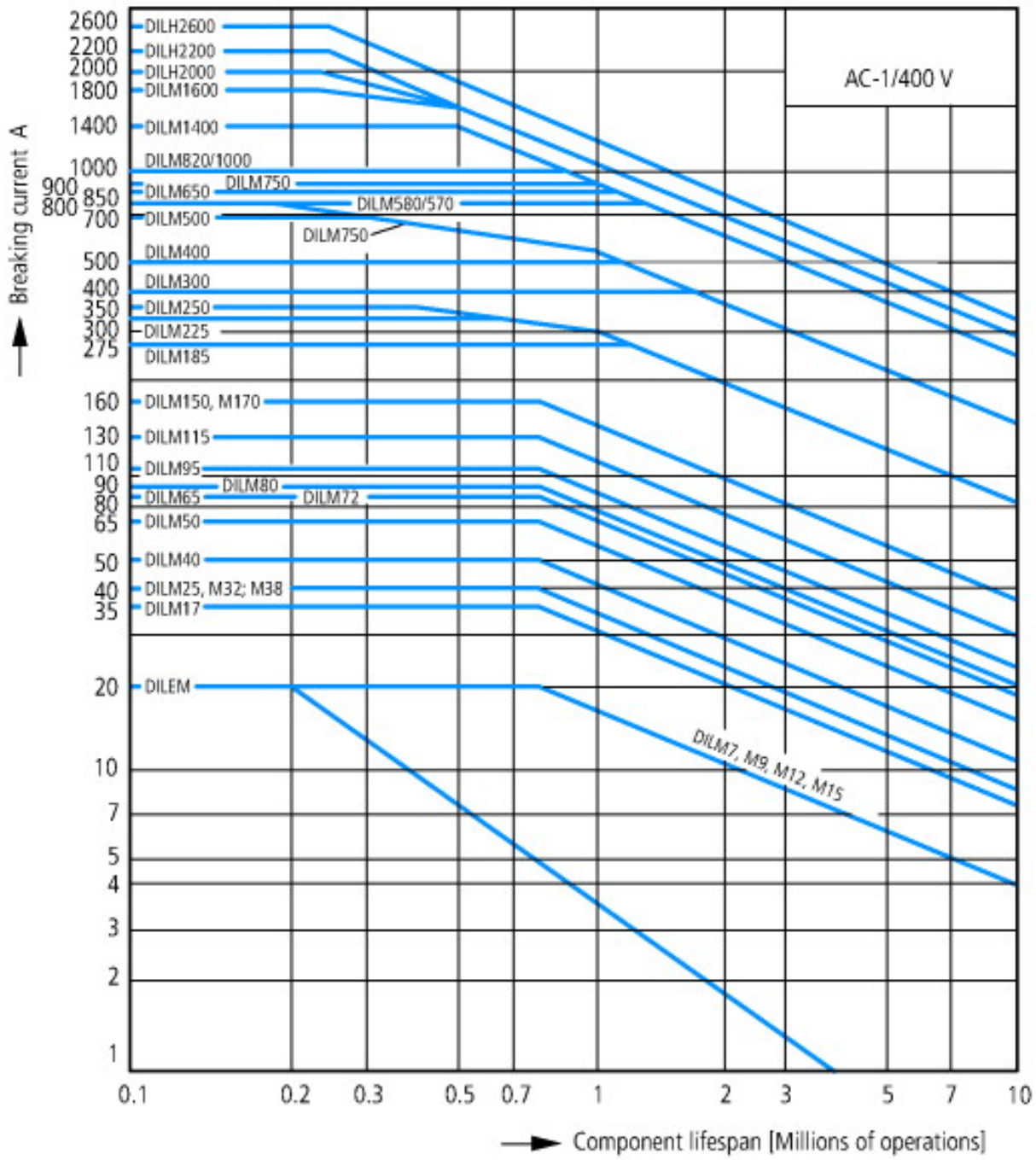
on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA



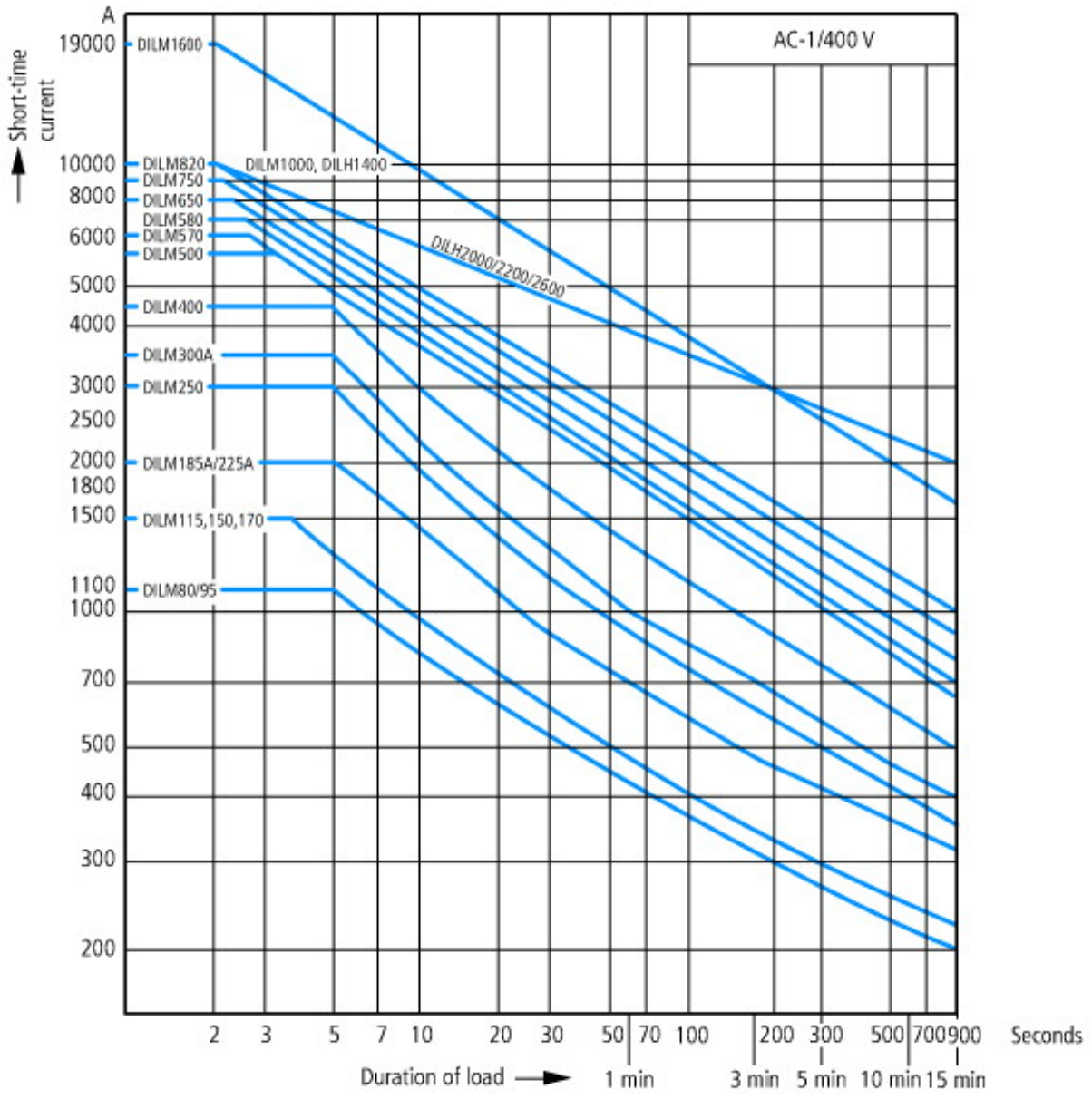
Squirrel-cage motor
Operating characteristics
Starting:from rest
Stopping:after attaining full running speed
Electrical characteristics
Make: up to 6 x rated motor current
Break: up to 1 x rated motor current
Utilization category
100 % AC-3
Typical applications
Compressors
Lifts
Mixers
Pumps
Escalators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



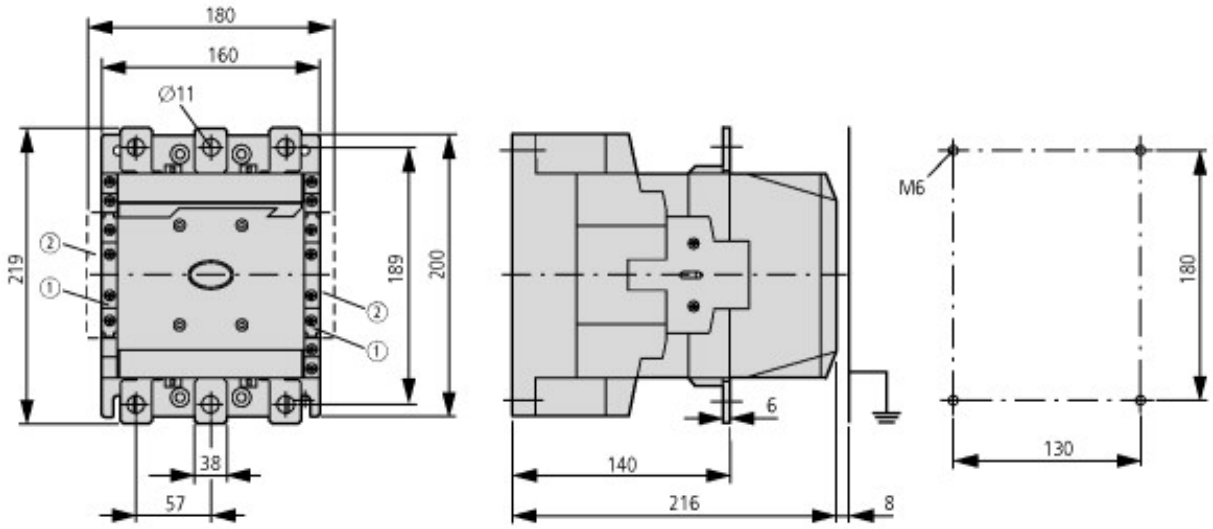
Switching duty for non-motor loads, 3-pole, 4-pole
Operating characteristics
Non-inductive or slightly inductive loads
Electrical characteristics
Make: 1 x rated current
Break: 1 x rated current
Utilization category
100 % AC-1
Typical applications
Electric heat



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

Normal switching duty

Dimensions



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

Additional product information (links)

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