



Contactor, 3p+2N/O+2N/C, 315kW/400V/AC3



Powering Business Worldwide™

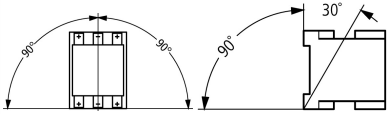
Part no. DILM580/22(RA250)
Article no. 208216
Catalog No. XTCE580N22A

Delivery program

Product range				Contactors
Application				Contactors for Motors
Subrange				Comfort devices greater than 170 A
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
Connection technique				Screw connection
Rated operational current				
AC-1				
Conventional free air thermal current, 3 pole, 50 - 60 Hz				
Open				
at 40 °C	$I_{th} = I_e$	A		980
Conventional free air thermal current, 1 pole				
open	I_{th}	A		2000
Max. rating for three-phase motors, 50 - 60 Hz				
AC-3				
220 V 230 V	P	kW		185
380 V 400 V	P	kW		315
660 V 690 V	P	kW		560
1000 V	P	kW		600
AC-4				
220 V 230 V	P	kW		143
380 V 400 V	P	kW		250
660 V 690 V	P	kW		440
1000 V	P	kW		509
Contact sequence				
Can be combined with auxiliary contact				DILM820-XHI...
Actuating voltage				RA 250: 110 - 250 V 40 - 60 Hz/110 - 350 V DC
Voltage AC/DC				AC and DC 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 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

Technical data

General				
Standards				IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical				
AC operated	Operations	$\times 10^6$		5
DC operated	Operations	$\times 10^6$		5
Operating frequency, mechanical				

AC operated	Operations/h		1000
DC operated	Operations/h		1000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
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
Degree of Protection			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		16.21
DC operated	kg		16.21
Weight	kg		16.21
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	50
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			
Width across flats	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		7800

Breaking capacity			
220 V 230 V		A	6500
380 V 400 V		A	6500
500 V		A	6500
660 V 690 V		A	6500
1000 V		A	4350
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	630
690 V	gG/gL 690 V	A	630
1000 V	gG/gL 1000 V	A	500
Type "1" coordination			
400 V	gG/gL 500 V	A	1000
690 V	gG/gL 690 V	A	1000
1000 V	gG/gL 1000 V	A	630

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	980
at 50 °C	$I_{th} = I_e$	A	876
at 55 °C	$I_{th} = I_e$	A	836
at 60 °C	$I_{th} = I_e$	A	800
Conventional free air thermal current, 1 pole			
Note			
open	I_{th}	A	2000
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
415 V	I_e	A	580
440V	I_e	A	580
500 V	I_e	A	580
660 V 690 V	I_e	A	580
1000 V	I_e	A	435
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	420
660 V 690 V	P	kW	560
1000 V	P	kW	600
AC-4			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	456

240 V	I _e	A	456
380 V 400 V	I _e	A	456
415 V	I _e	A	456
440 V	I _e	A	456
500 V	I _e	A	456
660 V 690 V	I _e	A	456
1000 V	I _e	A	348
Motor rating	P	kWh	
220 V 230 V	P	kW	143
240 V	P	kW	156
380 V 400 V	P	kW	250
415 V	P	kW	274
440 V	P	kW	290
500 V	P	kW	330
660 V 690 V	P	kW	440
1000 V	P	kW	509




Condensator operation


Individual compensation, rated operational current I _e of three-phase capacitors			
Open			
up to 525 V		A	463
690 V		A	265
Max. inrush current peak		x I _e	30
Component lifespan	Operations	x 10 ⁶	0.1
Max. operating frequency		Ops/h	200

Current heat loss

3-pole at I _{th}		W	61
Current heat loss at I _e to AC-3/400 V		W	32

Magnet systems

Voltage tolerance			
U _S			110 - 250 V 40-60 Hz 110 - 350 V DC
AC operated	Pick-up	x U _S	0.7 x U _{S min} - 1.15 x U _{S max}
DC operated	Pick-up	x U _S	0.7 x U _{S min} - 1.15 x U _{S max}
AC operated	Drop-out	x U _S	0.2 x U _{S max} - 0.6 x U _{S min}
DC operated	Drop-out	x U _S	0.2 x U _{S max} - 0.6 x U _{S min}
Power consumption of the coil in a cold state and 1.0 x U _c			
Note on power consumption			Control transformer with u _k  0.7
Pull-in power	Pick-up	VA	800
Pull-in power	Pick-up	W	700
Sealing power	Sealing	VA	7.5
Sealing power	Sealing	W	6.5
Duty factor		% DF	100
Changeover time at 100 % U _c (recommended value)			
Main contacts			
Closing delay		ms	70
Opening delay		ms	110
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

$(0.2 \dots 0.6 \times U_{c \min}) > 12 \text{ ms}$		Drop-out of the contactor
$(0.6 \dots 0.7 \times U_{c \min})$		Contactor remains switched on
Excess voltage		
$(1.15 \dots 1.3 \times U_{c \max})$		Contactor remains switched on
Pick-up phase		
$(0 \dots 0.7 \times U_{c \min})$		Contactor does not switch on
$(0.7 \times U_{c \min} \dots 1.15 \times U_{c \max})$		Contactor switches on with certainty
Admissible transitional contact resistance (of the external control circuit device when actuating A11)	mΩ	 500
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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Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	580
Heat dissipation per pole, current-dependent	P_{vid}	W	10.67
Equipment heat dissipation, current-dependent	P_{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	6.5
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-40
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 6.0

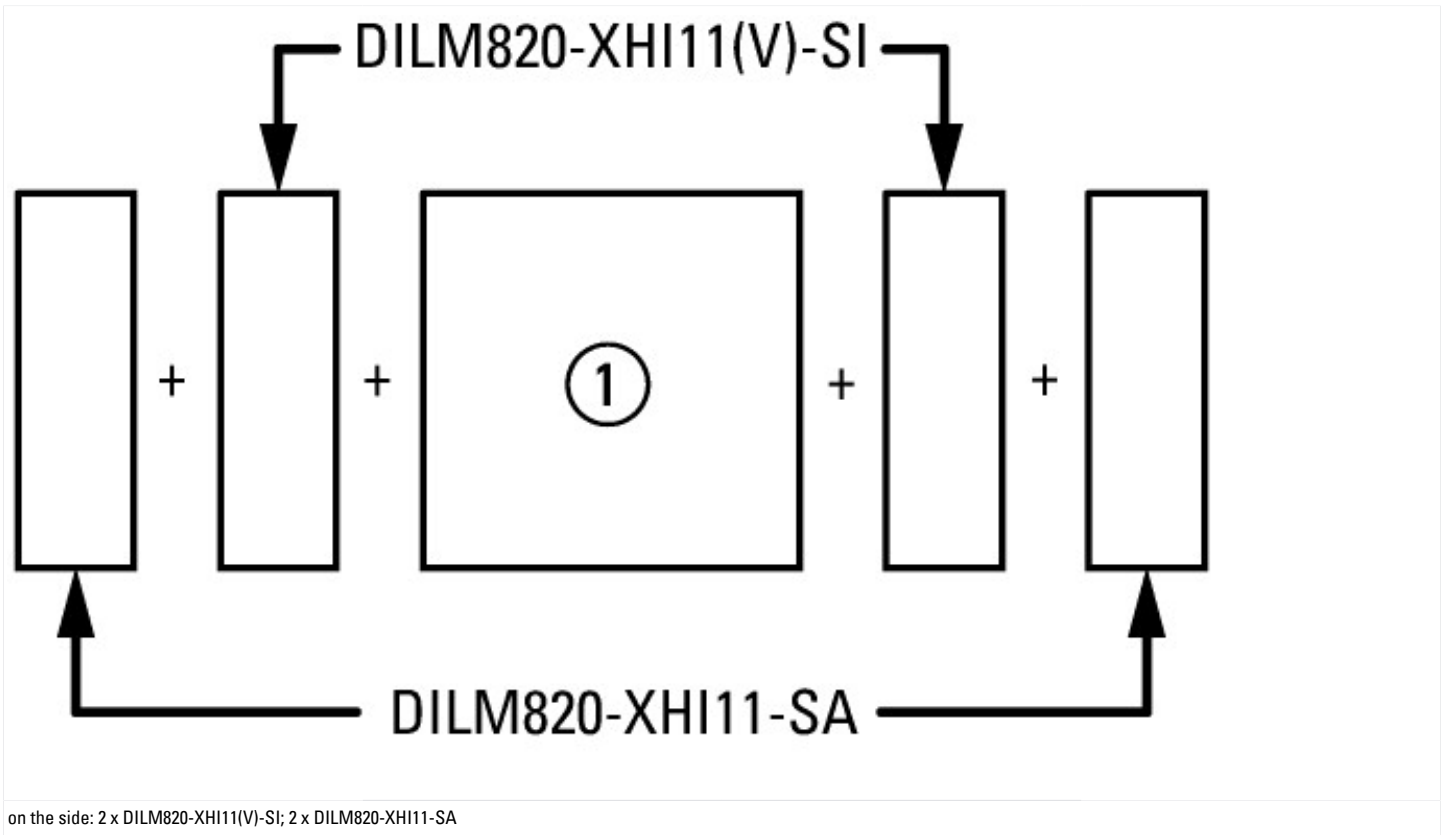
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)

Rated control supply voltage U_s at AC 50HZ	V	110 - 250
Rated control supply voltage U_s at AC 60HZ	V	110 - 250
Rated control supply voltage U_s at DC	V	110 - 250
Voltage type for actuating		AC/DC
Rated operation current I_e at AC-1, 400 V	A	980
Rated operation current I_e at AC-3, 400 V	A	580
Rated operation power at AC-3, 400 V	kW	315
Rated operation current I_e at AC-4, 400 V	A	456
Rated operation power I_e at AC-4, 400 V	kW	250
Modular version		No
Number of auxiliary contacts as normally open contact		2
Number of auxiliary contacts as normally closed contact		2
Type of electrical connection of main circuit		Rail 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 508; CSA-C22.2 No. 14-05; CE marking
UL File No.		E29096
UL Category Control No.		NLDX
CSA File No.		012528
CSA Class No.		3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No

Characteristics

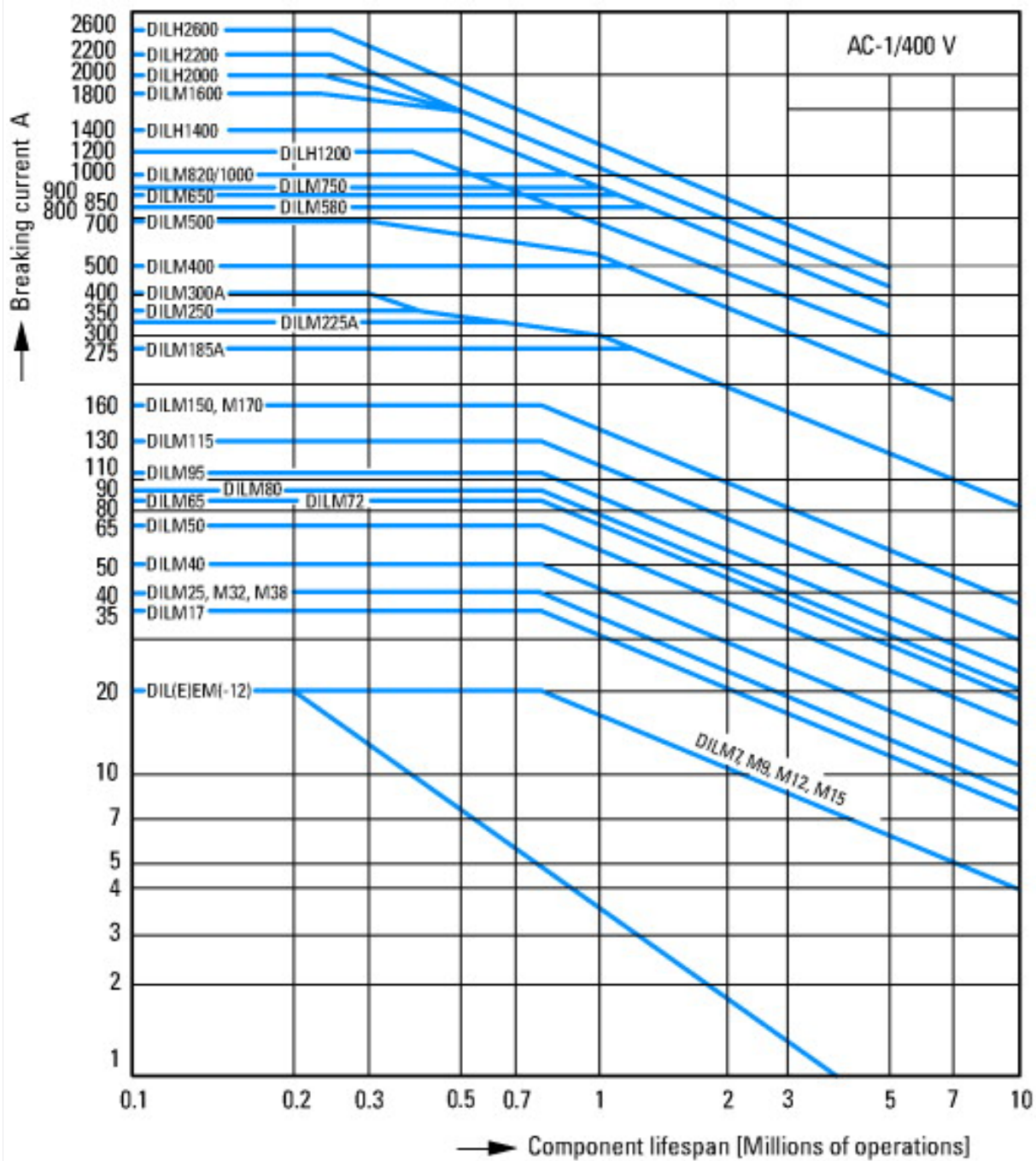




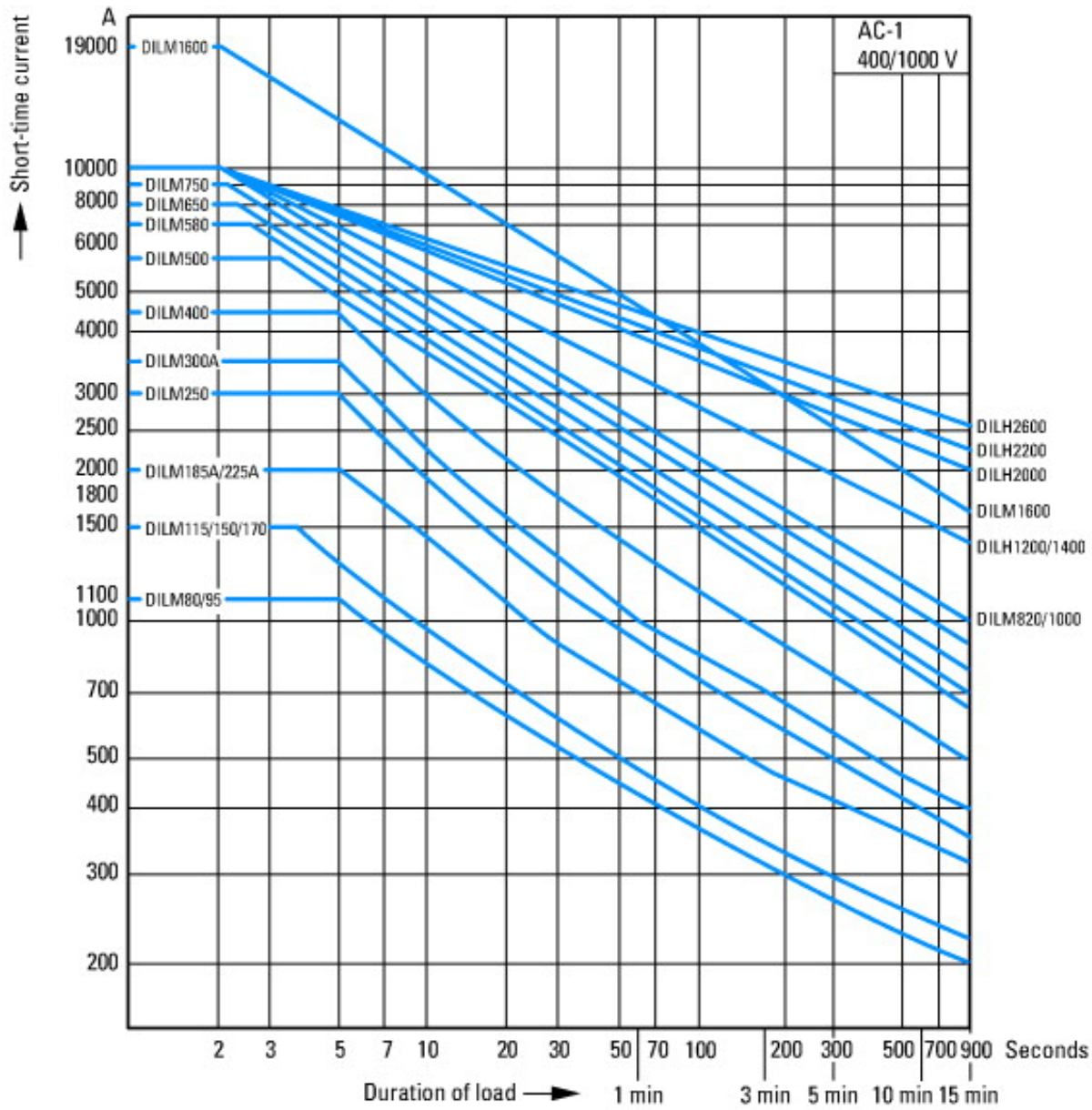
- Normal switching duty
- Normal AC induction motor
- Operating characteristics
- Switch on: from stop
- Switch off: during run
- Electrical characteristics:
- Switch on: up to 6 x Rated motor current
- Switch off: up to 1 x Rated motor current
- Utility category
- 100 % AC-3
- Typical Applications
-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

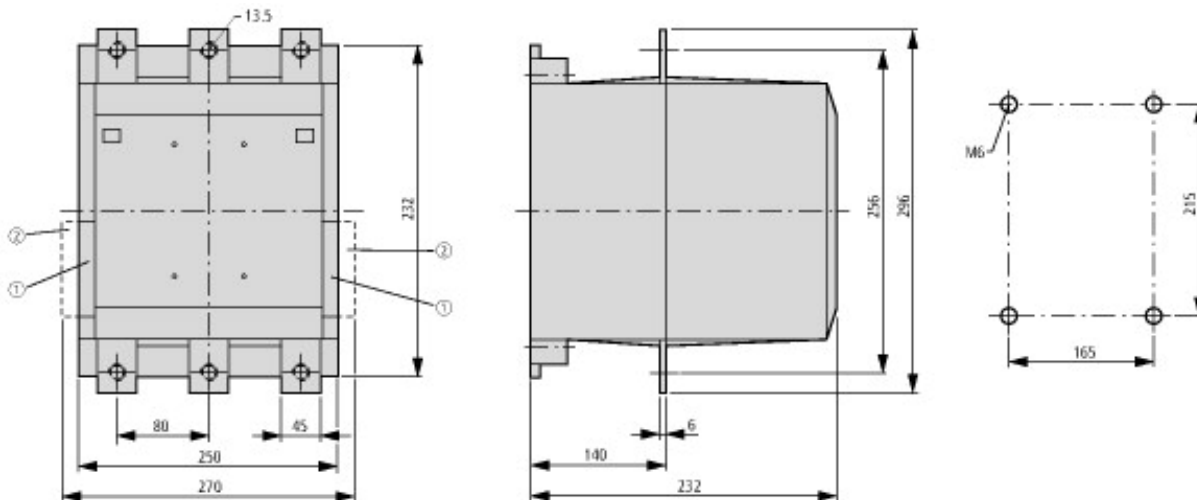


Switching conditions for 3 pole, non-motor loads
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application
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



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

Dimensions



① DILM820-XHI11(V)-SI

② DILM820-XHI11-SA

DILM580...DILM1000

Additional product information (links)

IL03407023Z (AWA2100-1697) Contactors >170 A

IL03407023Z (AWA2100-1697) Contactors >170 A ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407023Z2011_11.pdf

UL/CSA: Approved rating data <http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.84>

UL/CSA: UL/CSA: Short Circuit Current Rating (SCCR) <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 Cable 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