



Contactor, 3p, 45kW/400V/AC3

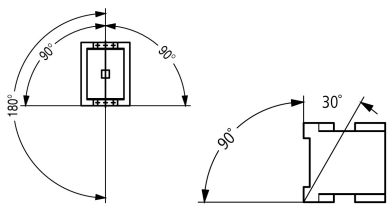
Part no. DILM95(RDC24)
Catalog No. 239510
Eaton Catalog No. XTCE095F00TD
EL-Nummer (Norway) 4134053

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	95
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	130
enclosed	I_{th}	A	100
Conventional free air thermal current, 1 pole			
open	I_{th}	A	275
enclosed	I_{th}	A	250
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	30
380 V 400 V	P	kW	45
660 V 690 V	P	kW	75
AC-4			
220 V 230 V	P	kW	16
380 V 400 V	P	kW	26
660 V 690 V	P	kW	35
Contact sequence			
Instructions			Contacts to EN 50012. integrated suppressor circuit in actuating electronics
Can be combined with auxiliary contact			DILM150-XHI(V).. DILM1000-XHI(V)..
Voltage AC/DC			DC operation

Technical data

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

Operating frequency, mechanical			
DC 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			
DC operated	kg		2.25
Terminal capacity main cable			
Flexible with ferrule	mm ²		1 x (10 - 95) 2 x (10 - 70)
Stranded	mm ²		1 x (16 - 95) 2 x (16 - 70)
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
Main cable connection screw/bolt			
			M10
Tightening torque			
		Nm	14
Terminal capacity control circuit cables			
Solid			
		mm ²	1 x (0.75 - 4) 2 x (0.75 - 4)
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
Control circuit cable connection screw/bolt			
			M3.5
Tightening torque			
		Nm	1.2
Tool			
Main cable			
Hexagon socket-head spanner	SW	mm	5
Control circuit cables			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5

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	1330
Breaking capacity			
220 V 230 V		A	950
380 V 400 V		A	950
500 V		A	950
660 V 690 V		A	800
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	130
at 50 °C	$I_{th} = I_e$	A	125
at 55 °C	$I_{th} = I_e$	A	115
at 60 °C	$I_{th} = I_e$	A	110
enclosed	I_{th}	A	100
Conventional free air thermal current, 1 pole			
open	I_{th}	A	275
enclosed	I_{th}	A	250
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	95
240 V	I_e	A	95
380 V 400 V	I_e	A	95
415 V	I_e	A	95
440V	I_e	A	95
500 V	I_e	A	95
660 V 690 V	I_e	A	80
380 V 400 V	I_e	A	95
Motor rating	P	kWh	
220 V 230 V	P	kW	30
240V	P	kW	32
380 V 400 V	P	kW	45
415 V	P	kW	57
440 V	P	kW	60

500 V	P	kW	70
660 V 690 V	P	kW	75
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I _e	A	50
240 V	I _e	A	50
380 V 400 V	I _e	A	50
415 V	I _e	A	50
440 V	I _e	A	50
500 V	I _e	A	50
660 V 690 V	I _e	A	37
Motor rating			
220 V 230 V	P	kW	16
240 V	P	kW	17
380 V 400 V	P	kW	26
415 V	P	kW	30
440 V	P	kW	32
500 V	P	kW	36
660 V 690 V	P	kW	35


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	16.9
Current heat loss at I _e to AC-3/400 V		W	12.6
Impedance per pole		mΩ	0.6

Magnet systems

Voltage tolerance			
DC operated	Pick-up	x U _c	0.7 - 1.2
Notes			RDC 24 (U _{min} 24 V DC/U _{max} 27 V DC) Example: U _c = 0.7 x U _{min} - 1.2 x U _{max} / U _c = 0.7 x 24 V - 1.2 x 27 V DC
DC operated	Drop-out	x U _c	0.15 - 0.65
Notes			at least smoothed two-phase bridge rectifier or three-phase rectifier
Power consumption of the coil in a cold state and 1.0 x U _c			
DC operated	Pick-up	W	90
DC operated	Sealing	W	1.5
Duty factor		% DF	100
Changeover time at 100 % U _c (recommended value)			
Main contacts			
DC operated		ms	
Closing delay		ms	45
Opening delay		ms	34
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			
Maximum motor rating			
Three-phase			
200 V		HP	30

208 V		
230 V 240 V	HP	40
460 V 480 V	HP	75
575 V 600 V	HP	100
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	570
FLA 480V 60Hz 3phase	A	95
Elevator Control		
200V 60Hz 3phase	HP	20
200V 60Hz 3phase	A	62.1
240V 60Hz 3phase	HP	30
240V 60Hz 3phase	A	80
480V 60Hz 3phase	HP	60
480V 60Hz 3phase	A	77
600V 60Hz 3phase	HP	75
600V 60Hz 3phase	A	77

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	95
Heat dissipation per pole, current-dependent	P_{vid}	W	4.2
Equipment heat dissipation, current-dependent	P_{vid}	W	12.6
Static heat dissipation, non-current-dependent	P_{vs}	W	1.5
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature max.		°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.

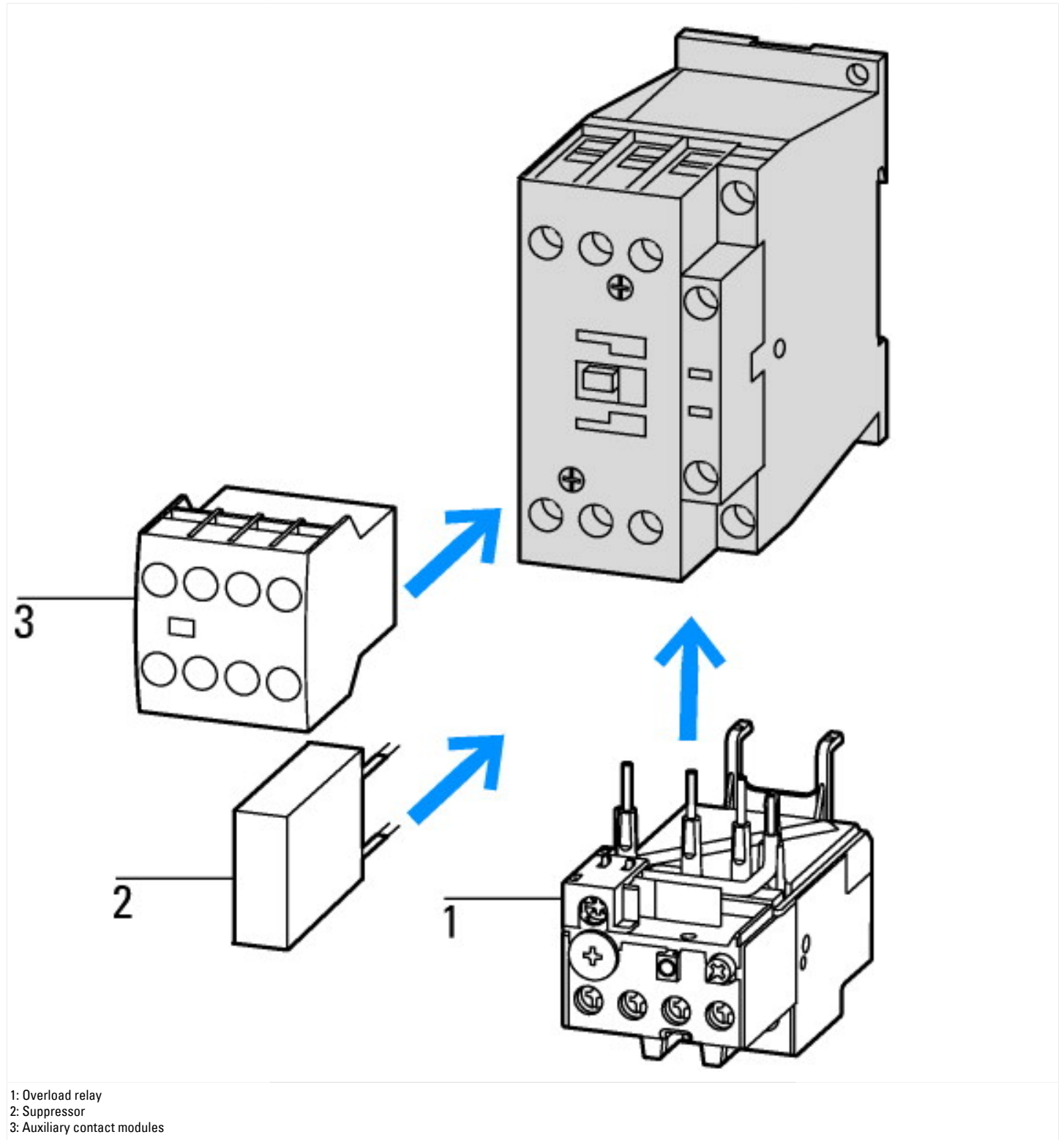
Technical data ETIM 6.0

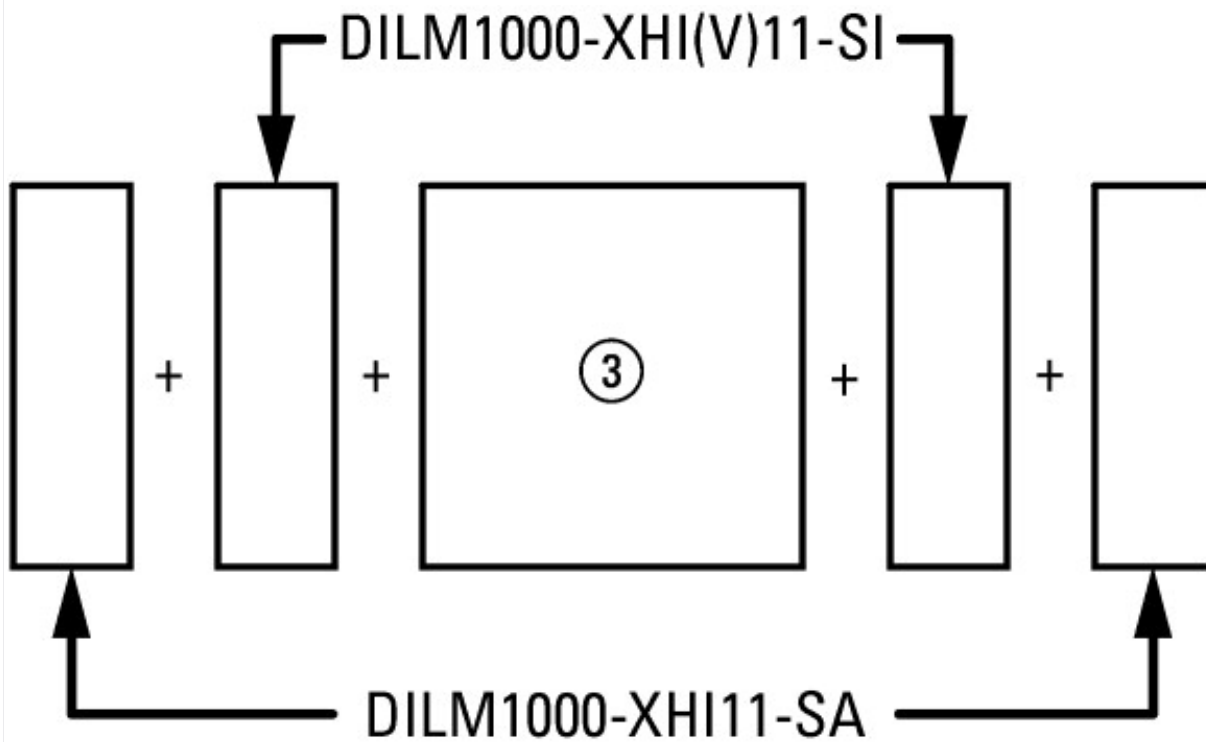
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8.1-27-37-10-03 [AAB718012])			
Rated control supply voltage U_s at AC 50HZ		V	0 - 0
Rated control supply voltage U_s at AC 60HZ		V	0 - 0
Rated control supply voltage U_s at DC		V	24 - 27
Voltage type for actuating			DC
Rated operation current I_e at AC-1, 400 V		A	130
Rated operation current I_e at AC-3, 400 V		A	95
Rated operation power at AC-3, 400 V		kW	45
Rated operation current I_e at AC-4, 400 V		A	50
Rated operation power I_e at AC-4, 400 V		kW	26
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

Approvals

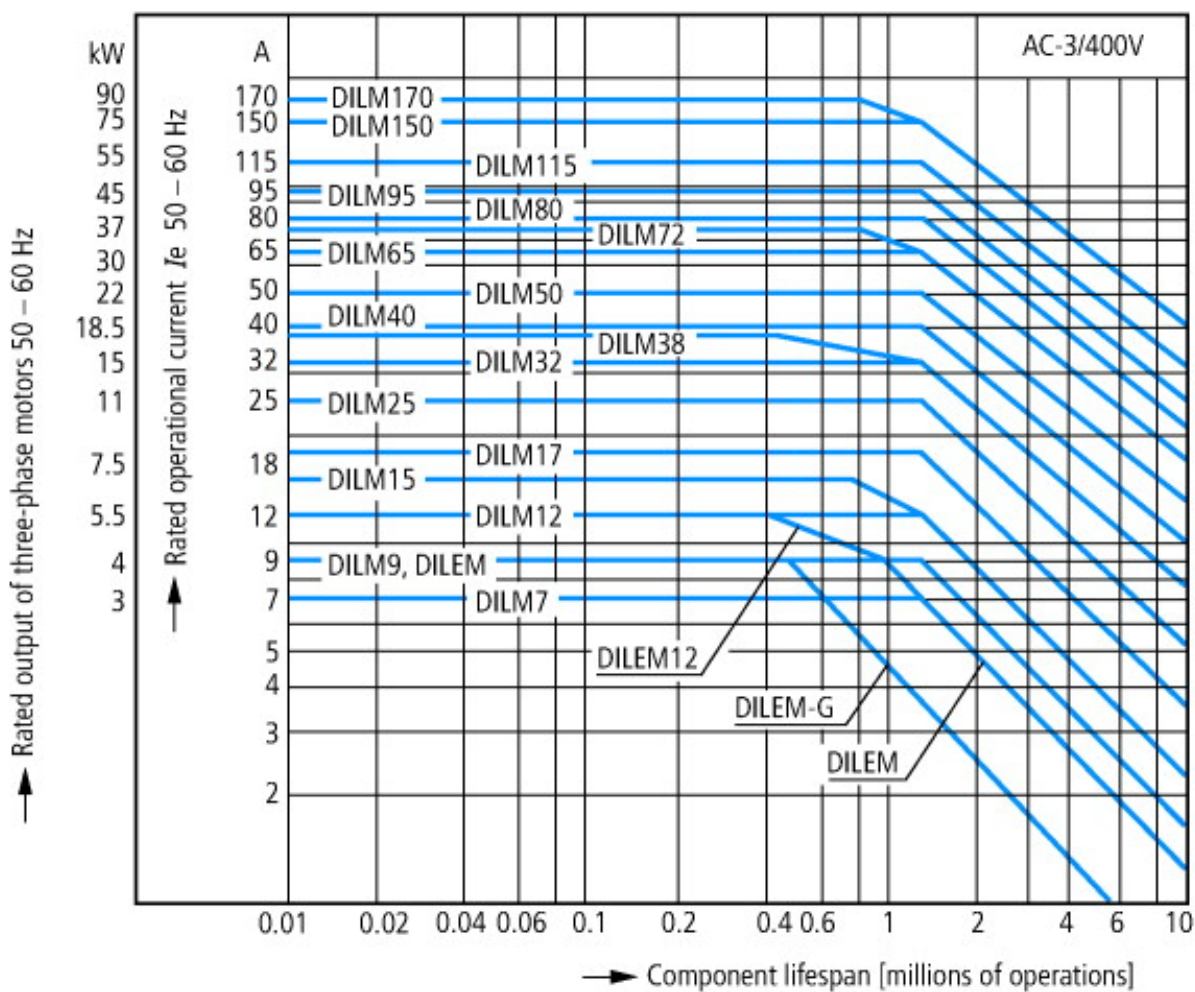
Product Standards	IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.	E29096
UL Category Control No.	NLDX
CSA File No.	012528
CSA Class No.	2411-03, 3211-04
North America Certification	UL listed, CSA certified
Specially designed for North America	No

Characteristics



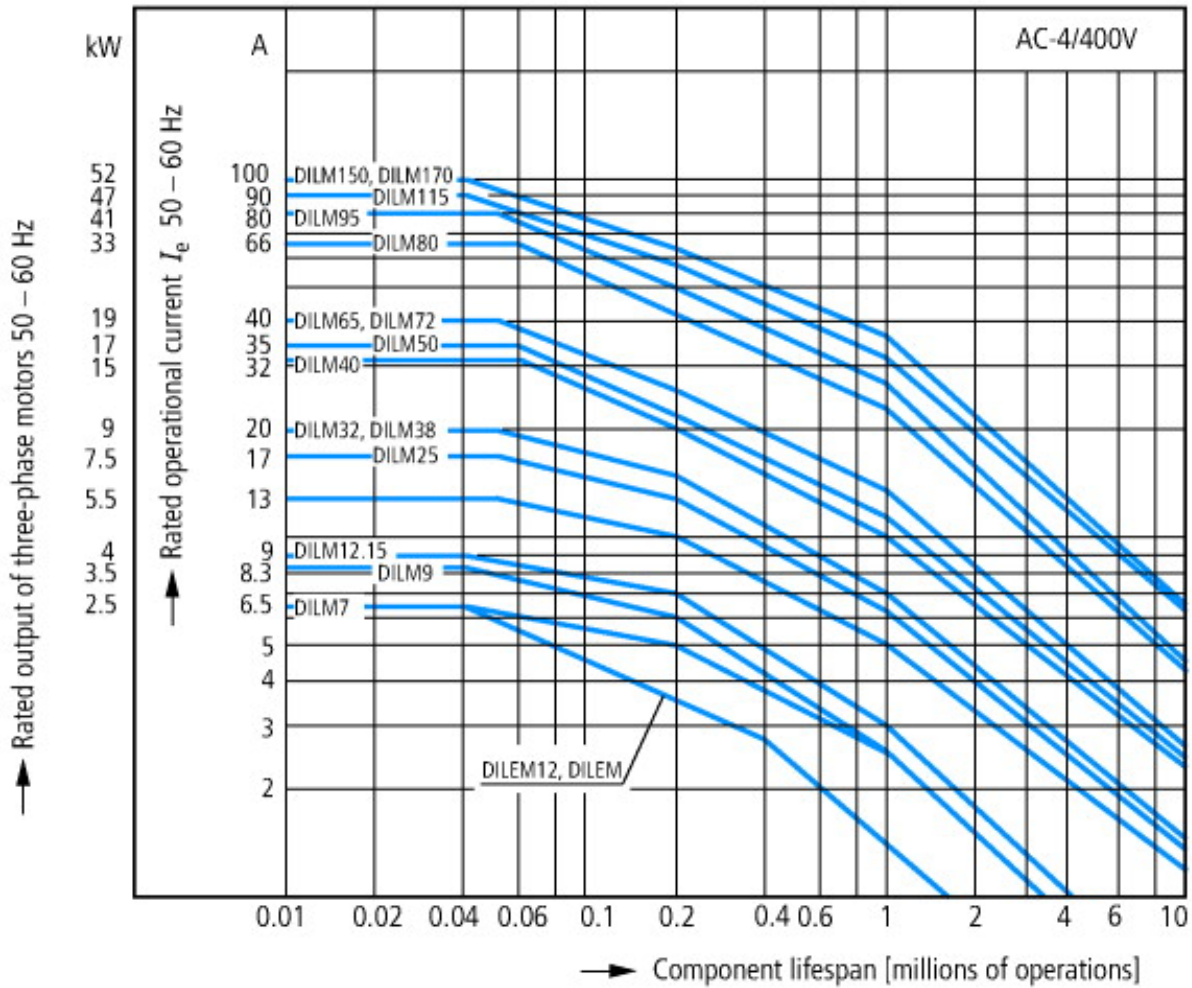


on the side: 2 x DILM820-XHI11(V)-SI; 2 x DILM820-XHI11-SA

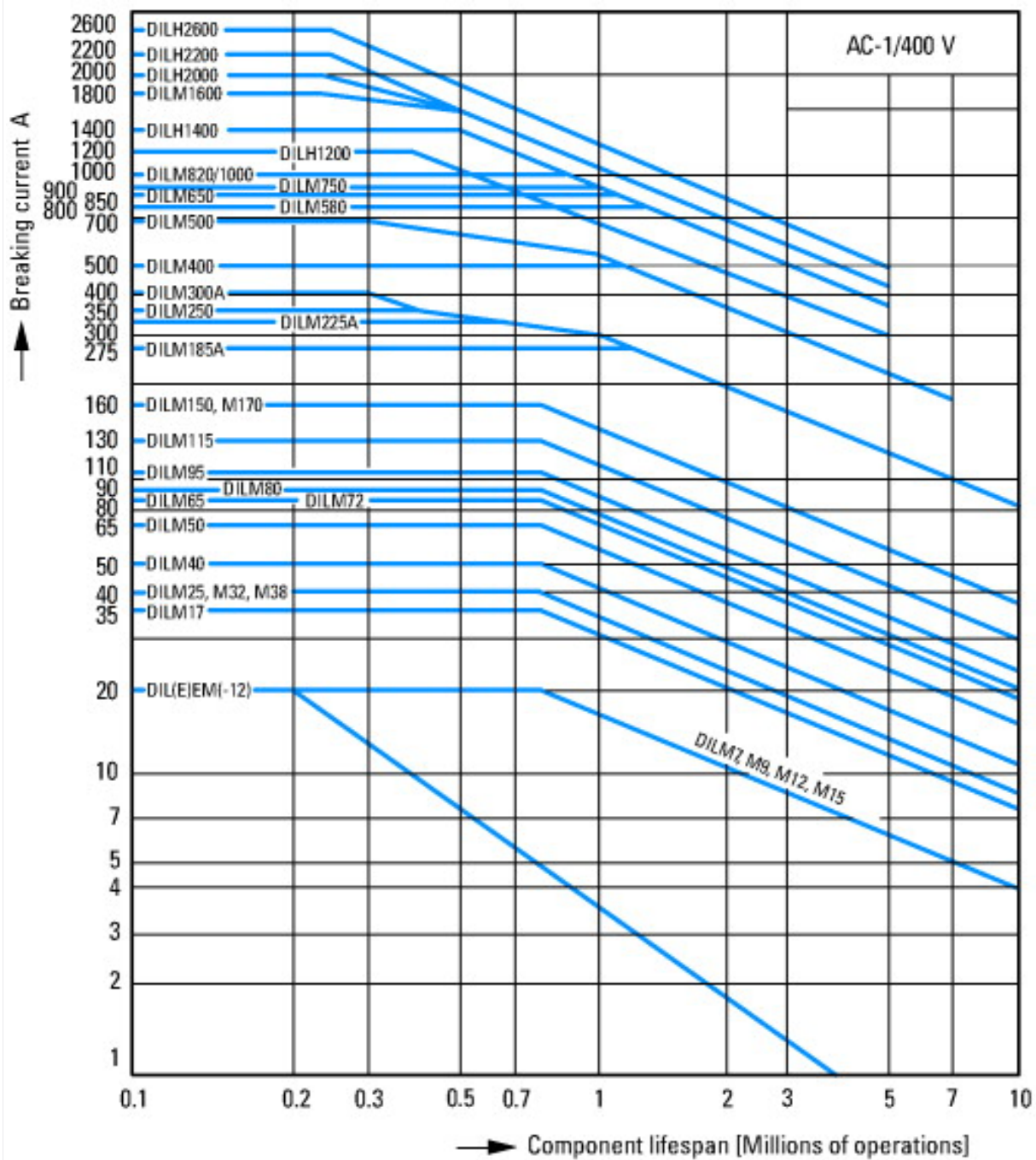


Squirrel-cage motor
 Operating characteristics
 Starting: from rest
 Stopping: after attaining full running speed
 Electrical characteristics
 Make: up to 6 x rated motor current
 Break: up to 1 x rated motor current
 Utilization category
 100 % AC-3
 Typical applications

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

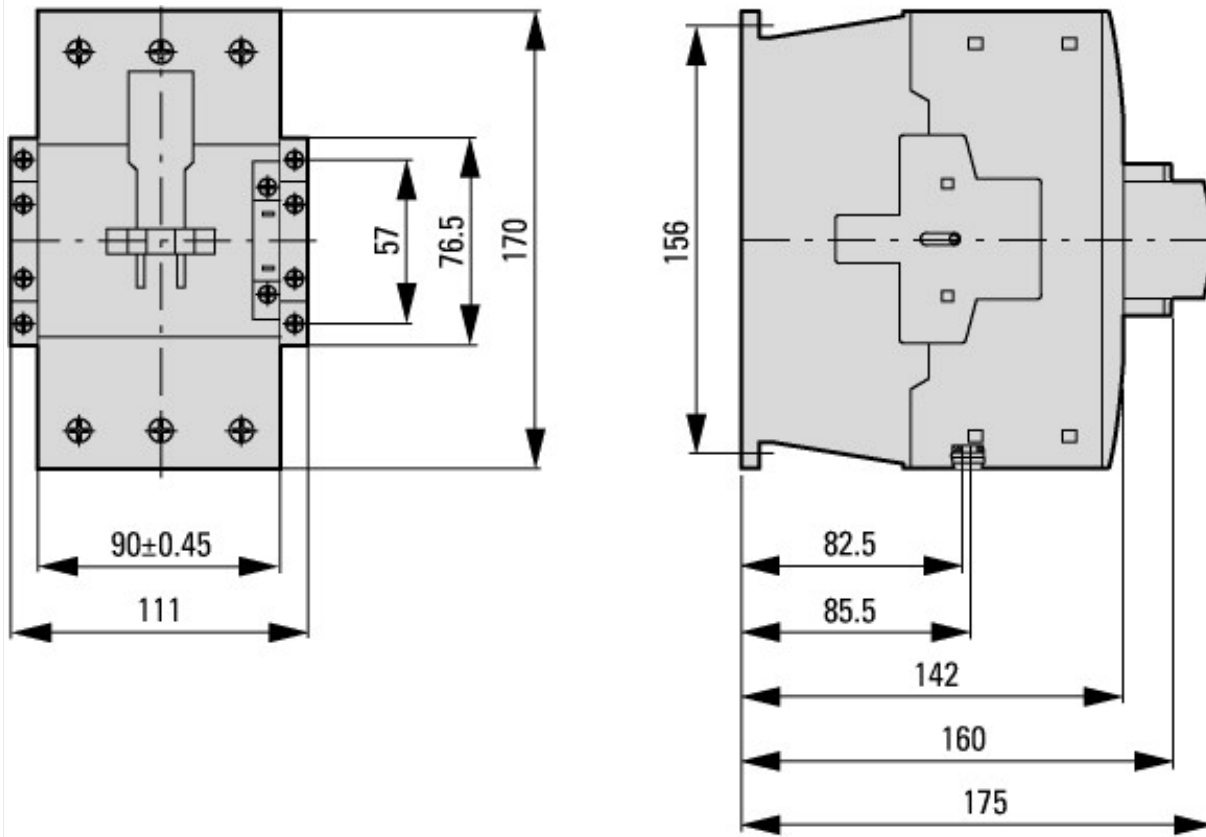


- Extreme switching duty
- Squirrel-cage motor
- Operating characteristics
- Inching, plugging, reversing
- Electrical characteristics
- Make: up to 6 x rated motor current
- Break: up to 6 x rated motor current
- Utilization category
- 100 % AC-4
- Typical applications
- Printing presses
- Wire-drawing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

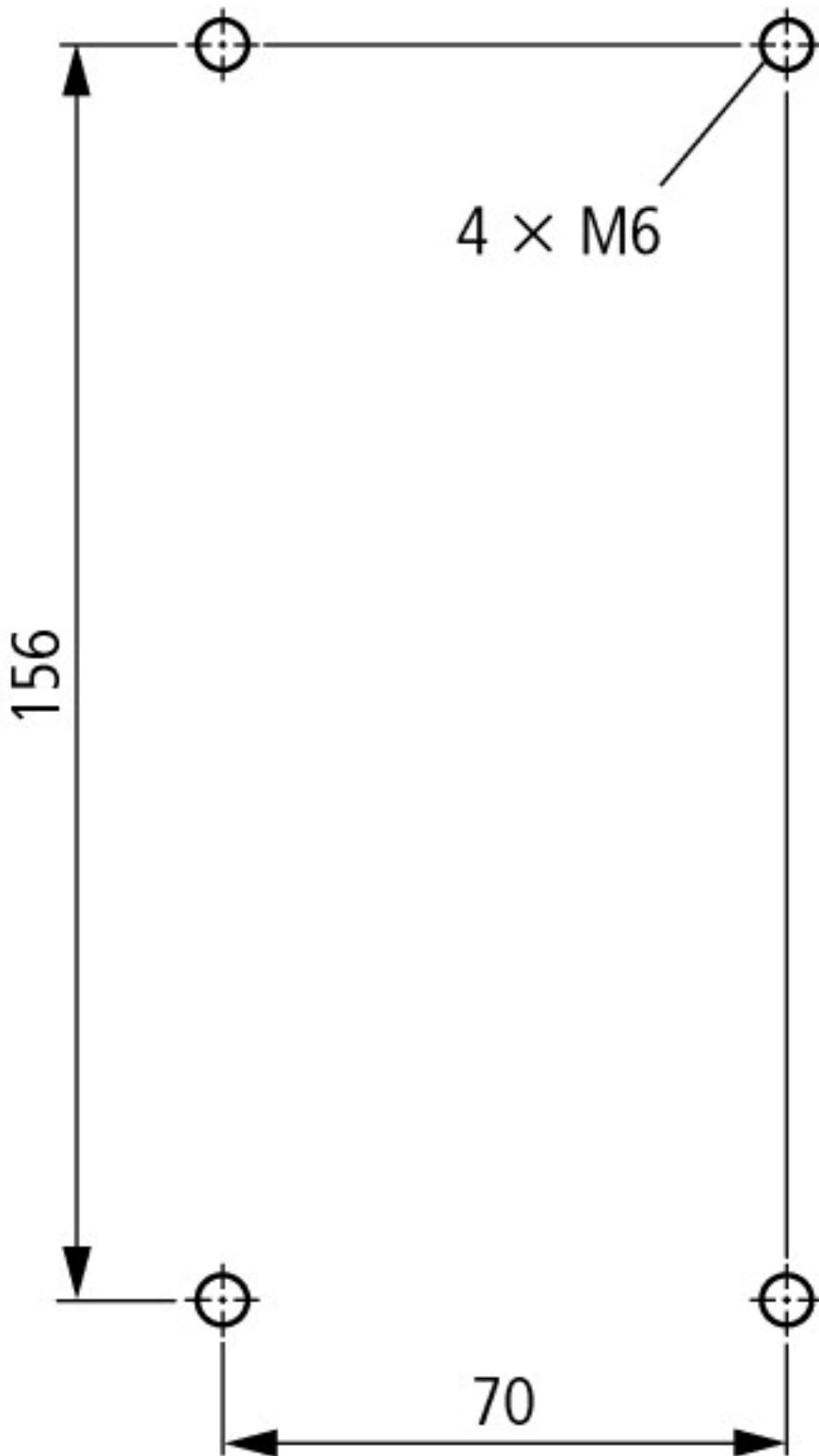


Switching conditions for non-motor consumers, 3 pole, 4 pole
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application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

Dimensions



Contacteur 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/IL03407039Z2010_10.pdf
UL/CSA: Approved rating data	http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.84
UL/CSA: UL/CSA: Special Purpose Rating	http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.85
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