DATASHEET - DILM72(230V50HZ,240V60HZ)



Contactor, 3 pole, 380 V 400 V 37 kW, 230 V 50 Hz, 240 V 60 Hz, AC operation, Screw terminals



Part no. DILM72(230V50HZ,240V60HZ)
Catalog No. 107670

Alternate Catalog XTCE072D00F

No.

EL-Nummer 4130420

(Norway)

Delivery program

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			Not suitable for motors with efficiency class IE3.
Connection technique			Screw terminals
Number of poles			3 pole
Rated operational current			
AC-3			
Notes			At maximum permissible ambient temperature (open.)
380 V 400 V	I _e	Α	72
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	98
enclosed	I _{th}	Α	72
Conventional free air thermal current, 1 pole			
open	I _{th}	Α	200
enclosed	I _{th}	Α	180
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	22
380 V 400 V	P	kW	37
660 V 690 V	P	kW	35
AC-4			
220 V 230 V	P	kW	7
380 V 400 V	P	kW	12
660 V 690 V	P	kW	17
Contact sequence			$\begin{array}{c} A1 & 1 & 3 & 5 \\ & A2 & 2 & 4 & 6 \end{array}$
Instructions			Contacts to EN 50 012. Observe electrical lifespan.
Can be combined with auxiliary contact			DILM150-XHI(V) DILM1000-XHI(V)
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
Voltage AC/DC			AC operation
Connection to SmartWire-DT			no
Frame size			3

Technical data

G,	ne	rol
u	H	ıaı

Standards	IEC/EN 60947, VDE 0660, UL, CSA
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Lifespan, mechanical			
AC operated	Operations	. 6	10
	Operations	x 10 ⁶	10
Operating frequency, mechanical			
AC operated	Operations/h		5000
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			Dailip Heat, Cyclic, to IEC 00000-2-30
Open		°C	-25 - +60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			30°
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			5
Degree of Protection		g	IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude		m	Max. 2000
		m	IVIAX. 2000
Weight		l.m	0.072
AC operated		kg	0.872
Screw connector terminals			
Terminal capacity main cable			
Solid		mm ²	1 x (0.75 - 16) 2 x (0.75 - 16)
Flexible with ferrule		mm ²	1 x (0.75 - 35) 2 x (0.75 - 25)
Stranded		mm ²	1 x (16 - 50) 2 x (16 - 35)
Solid or stranded		AWG	single 14 - 1, double 14 - 2
Flat conductor	Lamellenzahl x Breite x Dicke	mm	2 x (6 x 9 x 0.8)
Stripping length		mm	14
Terminal screw			M6
Tightening torque		Nm	3.3
Tool			
Pozidriv screwdriver		Size	2
Standard screwdriver			
		mm	0.8 x 5.5 1 x 6
Terminal capacity control circuit cables			
Solid		mm ²	1 x (0.75 - 4) 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	18 - 14
Stripping length		mm	10
Terminal screw			M3.5
		Nes	
Tightening torque		Nm	1.2
Tool			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6
Main conducting paths			
Rated impulse withstand voltage	U _{imp}	V AC	8000
Overvoltage category/pollution degree			III/3
Rated insulation voltage	Ui	V AC	690
Rated operational voltage	U _e	V AC	690
Safe isolation to EN 61140			
between coil and contacts		V AC	440
between the contacts		V AC	440
Making capacity (p.f. to IEC/EN 60947)			
mutaling duputotty (p.m. to 120/211 000 m/	Up to 690 V	A	910
Breaking capacity	Op 10 000 V	, ,	
220 V 230 V		A	650
220 V 230 V 380 V 400 V		A	650
380 V 400 V 500 V			650
		A	
660 V 690 V		Α	370
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination	0/ / 500 //		
400 V		Α .	125
690 V	gG/gL 690 V	Α	80
Type "1" coordination			
400 V	gG/gL 500 V	Α	250
690 V	gG/gL 690 V	Α	100
AC-1			
Rated operational current			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	98
at 50 °C	I _{th} =I _e	Α	88
at 55 °C	I _{th} =I _e	Α	83
at 60 °C	I _{th} =I _e	Α	80
enclosed	I _{th}	A	72
Conventional free air thermal current, 1 pole	ul		
open	l.	A	200
	I _{th}		
enclosed AC-3	I _{th}	A	180
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.)
220 V 230 V	l _e	Α	72
240 V	I _e	A	72
380 V 400 V			72
	l _e	A	
415 V	I _e	Α	72
440V	l _e	Α	72
500 V	I _e	Α	72
660 V 690 V	I _e	Α	37

Motor rating	P	kWh	
220 V 230 V	P	kW	22
240V	P	kW	25
380 V 400 V	P	kW	37
415 V	P	kW	41
440 V	P	kW	44
500 V	Р	kW	50
660 V 690 V	P	kW	35
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I _e	Α	25
240 V	I _e	A	25
380 V 400 V	l _e	Α	25
415 V	l _e	Α	25
440 V	l _e	Α	25
500 V	l _e	Α	25
660 V 690 V	I _e	Α	20
Motor rating	P	kWh	
220 V 230 V	P	kW	7
240 V	P	kW	7.5
380 V 400 V	P	kW	12
415 V	P	kW	13
440 V	P	kW	14
500 V	Р	kW	16
660 V 690 V	Р	kW	17
DC			
Rated operational current, open			
DC-1			
60 V	I _e	Α	72
110 V	l _e	A	72
220 V	l _e	Α	65
Current heat loss	·e	^	
3 pole, at I _{th} (60°)		W	25.9
Current heat loss at I _e to AC-3/400 V		W	21
Impedance per pole		mΩ	1.9
Magnet systems		ΠΩ	1.3
Voltage tolerance			
AC operated	Pick-up	x U _c	0.8 - 1.1
Drop-out voltage AC operated	Drop-out	x U _c	0.3 - 0.6
Power consumption of the coil in a cold state and 1.0 x U_S	Diop-out	∧ oc	
	2	1/4	440
50 Hz	Pick-up	VA	149
50 Hz	Sealing	VA	16
50 Hz	Sealing	W	4.1
60 Hz	Pick-up	VA	178
60 Hz	Sealing	VA	19
60 Hz	Sealing	W	4.1
Duty factor		% DF	100
Changeover time at 100 % U_{S} (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	12 - 18
Opening delay		ms	8 - 13
Arcing time		ms	10
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 208 V	НР	20
230 V 240 V	HP	25
460 V 480 V	НР	50
575 V 600 V	НР	60
Single-phase		
115 V 120 V	НР	5
230 V 240 V	НР	15
General use	А	88
Short Circuit Current Rating	SCCR	
Basic Rating		
SCCR	kA	10
max. Fuse	А	250
max. CB	А	250
480 V High Fault		
SCCR (fuse)	kA	30/100
max. Fuse		250/150 Class J
SCCR (CB)	kA	65
max. CB	Α	100
600 V High Fault		
SCCR (fuse)	kA	30/100
max. Fuse		250/150 Class J
SCCR (CB)		30
max. CB	A	250
Special Purpose Ratings		
Electrical Discharge Lamps (Ballast)		
480V 60Hz 3phase, 277V 60Hz 1phase	A	88
600V 60Hz 3phase, 347V 60Hz 1phase		88
Incandescent Lamps (Tungsten)	, ,	
480V 60Hz 3phase, 277V 60Hz 1phase	A	88
600V 60Hz 3phase, 347V 60Hz 1phase		88
Resistance Air Heating	7	
480V 60Hz 3phase, 277V 60Hz 1phase	A	88
600V 60Hz 3phase, 277V 60Hz 1phase		88
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)	A	
LRA 480V 60Hz 3phase	A	432
FLA 480V 60Hz 3phase		72
Elevator Control	A	-
200V 60Hz 3phase	НР	10
200V 60Hz 3phase		32.2
240V 60Hz 3phase		15
240V 60Hz 3phase		42
	HP	30
480V 60Hz 3phase 480V 60Hz 3phase		40
	HP	
600V 60Hz 3phase		40
600V 60Hz 3phase	Α	41

Design verification as per IEC/EN 61439

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Heat dissipation por pole, current-dependent Per Wid W 21 Static heat dissipation, current-dependent Per Wid W 21 Static heat dissipation, current-dependent Per W 41 Heat dissipation con-current-dependent Per W 41 Heat dissipation capacity Per W 41 Departating ambient temperature min. Operating ambient temperat	Technical data for design verification			
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Heat dissipation capacity Operating ambient temperature min. Operating ambient temperature max. **C	Equipment heat dissipation, current-dependent	P _{vid}	W	21
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10.2.7 Inscriptions 10.3 Degree of protection of ASSEMBLIES 10.4 Clearances and creepage distances 10.5 Protection against electric shock 10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 10.8 Connections for external conductors 10.9 Power-frequency electric strength 10.9.2 Power-frequency electric strength 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function 10.13 Mechanical function 10.13 Mechanical function 10.13 Mechanical function 10.10 Temperature rise provided the information in the instruct 10.10 Temperature meets the requirements, provided the information in the instruct 10.13 Mechanical function 10.14 Electromagnetic compatibility. 10.15 The device meets the requirements, provided the information in the instruct	10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
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Meets the product standard's requirements. 10.5 Protection against electric shock 10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 10.8 Connections for external conductors 10.9 Insulation properties 10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function Meets the product standard's requirements. Does not apply, since the entire switchgear needs to be evaluated. Is the panel builder's responsibility. In the panel builder is responsibility. In the panel builder is responsibility. In the panel builder is responsibility. The specifications for the switchgear observed. In the panel builder's responsibility. The specifications for the switchgear observed. In the device meets the requirements, provided the information in the instruction.	10.2.7 Inscriptions			Meets the product standard's requirements.
Does not apply, since the entire switchgear needs to be evaluated. 10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 1 Is the panel builder's responsibility. 10.8 Connections for external conductors 10.9 Insulation properties 10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function Does not apply, since the entire switchgear needs to be evaluated. Is the panel builder's responsibility. Is the panel builder's responsibility. Is the panel builder's responsibility. The panel builder's responsibility. Is the panel builder is responsibility. Is the panel builder's responsibility. Is the panel builder's responsibility. The panel builder's responsibility. The specifications for the switchgear mobserved. Is the panel builder's responsibility. The specifications for the switchgear mobserved. The device meets the requirements, provided the information in the instruct	10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components 10.7 Internal electrical circuits and connections 1s the panel builder's responsibility. 10.8 Connections for external conductors 1s the panel builder's responsibility. 10.9.1 Insulation properties 10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 1s the panel builder's responsibility. 1s the panel builder is responsibility. The specifications for the switchgear mobserved. 1s the panel builder's responsibility. The specifications for the switchgear mobserved. 1s the panel builder's responsibility. The specifications for the switchgear mobserved. 1s the panel builder's responsibility. The specifications for the switchgear mobserved. 1s the panel builder's responsibility. The specifications for the switchgear mobserved. 1s the panel builder's responsibility. The specifications for the switchgear mobserved.	10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.7 Internal electrical circuits and connections 10.8 Connections for external conductors 10.9 Insulation properties 10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.13 Mechanical function 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 1 Is the panel builder's responsibility. The specifications for the switchgear mobserved.	10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.8 Connections for external conductors 10.9 Insulation properties 10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function 10.13 Mechanical function 10.14 Short-circuits for external conductors 10.15 Is the panel builder's responsibility. 10.16 The panel builder is responsibility. 10.17 Is the panel builder is responsibility. 10.18 Is the panel builder is responsibility. The specifications for the switchgear mobserved. 10.19 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.19 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.19 Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.19 Is the panel builder's responsibility. The specifications for the switchgear mobserved.	10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function 10.14 Short-circuit requirements, provided the information in the instruction 10.15 The panel builder's responsibility. The specifications for the switchgear mobserved. 10.11 Short-circuit requirements, provided the information in the instruction	10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength 10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function Is the panel builder's responsibility. Is the panel builder is responsibility. The panel builder is responsibility. The specifications for the switchgear mobserved. 10.11 Short-circuit rating 10.12 Electromagnetic compatibility The device meets the requirements, provided the information in the instruction.	10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage 10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise 10.11 Short-circuit rating 10.12 Electromagnetic compatibility 10.13 Mechanical function 10.13 Mechanical function 10.14 Steppen builder's responsibility. The specifications for the switchgear mobserved. 10.15 Steppen builder's responsibility. The specifications for the switchgear mobserved. 10.15 The panel builder's responsibility. The specifications for the switchgear mobserved. 10.16 Steppen builder's responsibility. The specifications for the switchgear mobserved. 10.17 Mechanical function 10.18 The device meets the requirements, provided the information in the instruction	10.9 Insulation properties			
10.9.4 Testing of enclosures made of insulating material 10.10 Temperature rise The panel builder is responsibility. The panel builder is responsible for the temperature rise calculation. Eaton provide heat dissipation data for the devices. 10.11 Short-circuit rating Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.12 Electromagnetic compatibility Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.13 Mechanical function The device meets the requirements, provided the information in the instruct	10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.10 Temperature rise The panel builder is responsible for the temperature rise calculation. Eaton provide heat dissipation data for the devices. 10.11 Short-circuit rating Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.12 Electromagnetic compatibility Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.13 Mechanical function The device meets the requirements, provided the information in the instruct	10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
provide heat dissipation data for the devices. 10.11 Short-circuit rating 1s the panel builder's responsibility. The specifications for the switchgear mobserved. 10.12 Electromagnetic compatibility 1s the panel builder's responsibility. The specifications for the switchgear mobserved. 10.13 Mechanical function The device meets the requirements, provided the information in the instruct	10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
observed. 10.12 Electromagnetic compatibility Is the panel builder's responsibility. The specifications for the switchgear mobserved. 10.13 Mechanical function The device meets the requirements, provided the information in the instruct	10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
observed. 10.13 Mechanical function The device meets the requirements, provided the information in the instruct	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 7.0

Modular version

Number of auxiliary contacts as normally open contact

Number of auxiliary contacts as normally closed contact

Number of normally closed contacts as main contact

Type of electrical connection of main circuit

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

Rated control supply voltage Us at AC 50HZ	V	230 - 230
Rated control supply voltage Us at AC 60HZ	V	240 - 240
Rated control supply voltage Us at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current le at AC-1, 400 V	Α	98
Rated operation current le at AC-3, 400 V	Α	72
Rated operation power at AC-3, 400 V	kW	37
Rated operation current le at AC-4, 400 V	Α	25
Rated operation power at AC-4, 400 V	kW	12
Rated operation power NEMA	kW	37

Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss10.0.1-27-37-10-03 [AAB718015])

No

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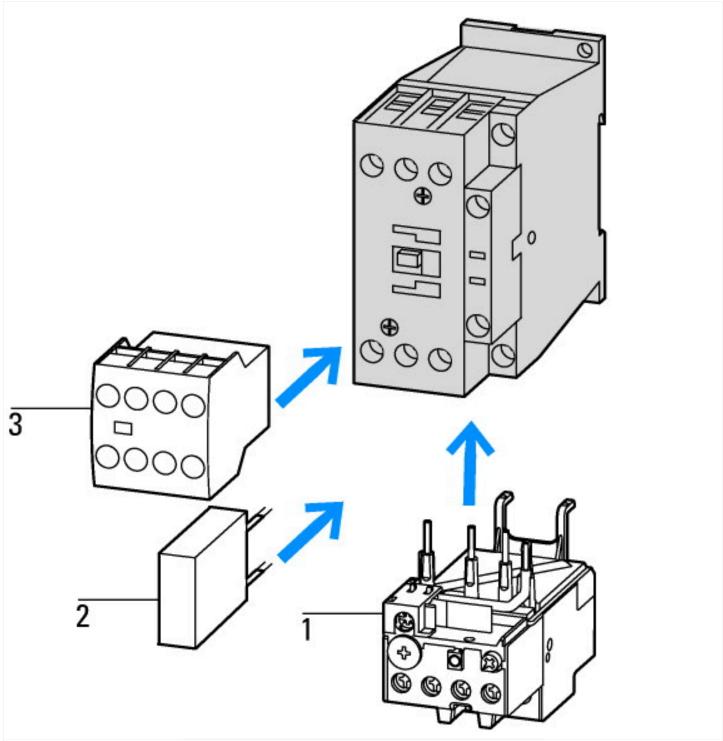
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Screw connection

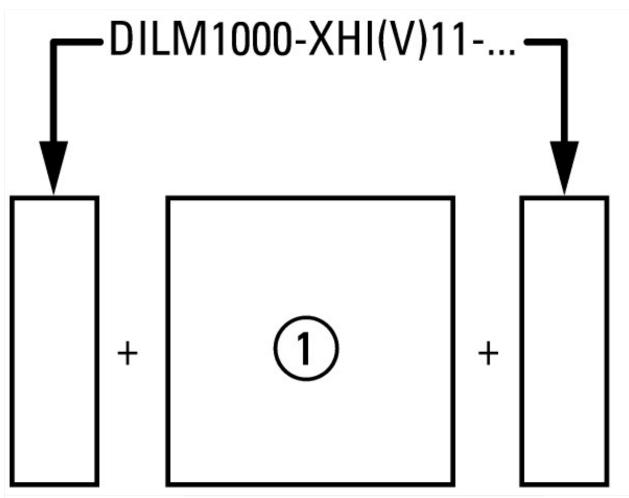
Approvals

• •	
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

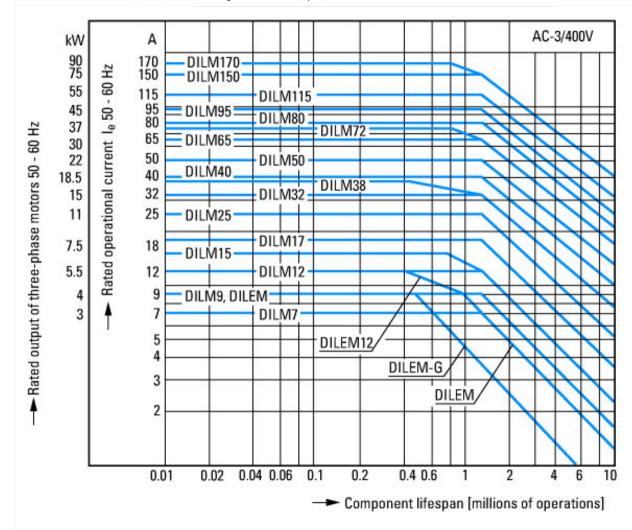
Characteristics



- 1: Overload relay 2: Suppressor 3: Auxiliary contact modules

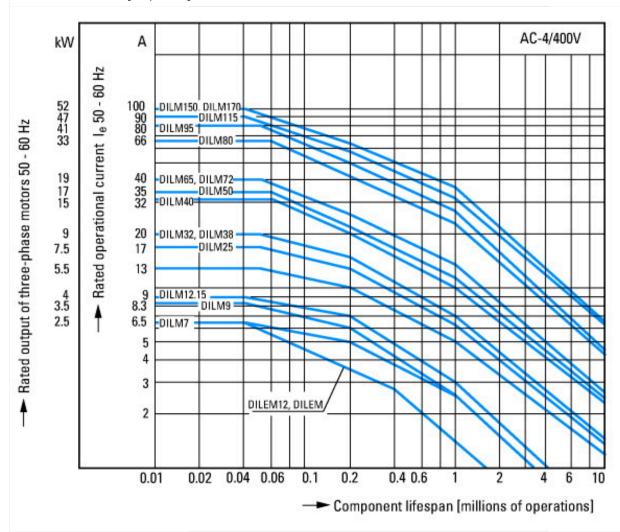


on the side: $2 \times DILM1000-XHI(V)11-SI$; surface mounting: $1 \times DILM150-XHIA11$ on the side: $2 \times DILM1000-XHI(V)11-SA$; surface mounting: $1 \times DILM150-XHI$ (2 pole) on the side: $1 \times DILM1000-XHI(V)11-SI$; surface mounting: $1 \times DILM150-XHIA22$ on the side: $1 \times DILM1000-XHI(V)11-SA$; surface mounting: $1 \times DILM150-XHI$ (4 pole)



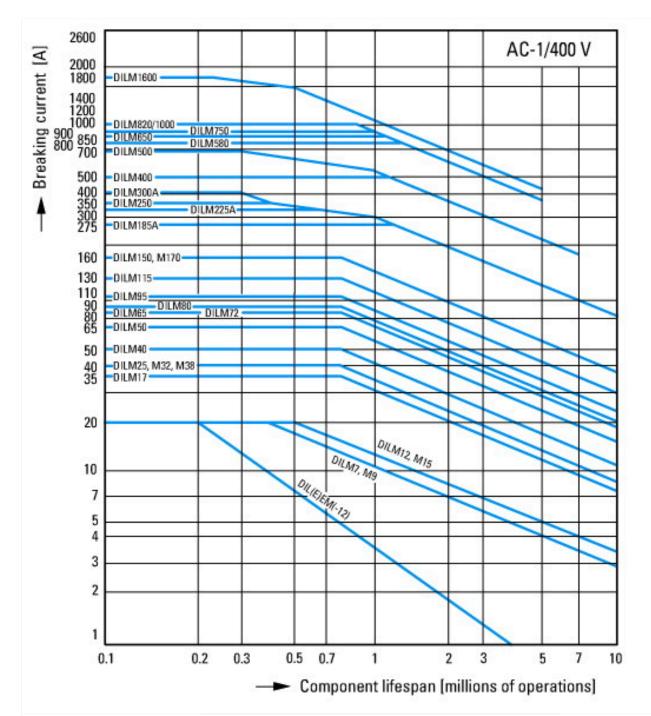
Squirrel-cage motor Operating characteristics Starting:from rest Stopping:after attaining full running speed Electrical characteristics Make: up to 6 x rated motor current Break: up to 1 x rated motor current Utilization category 100 % AC-3 Typical applications Compressors Lifts Mixers Pumps Escalators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

Special drives for manufacturing and processing machines



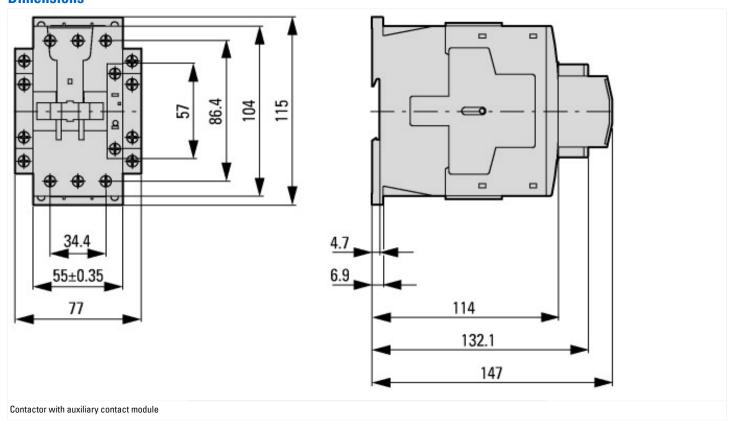
Switching conditions for non-motor consumers, 3 pole, 4 pole Operating characteristics Non inductive and slightly inductive loads Electrical characteristics Switch on: 1 x rated operational current Switch off: 1 x rated operational current Utilization category

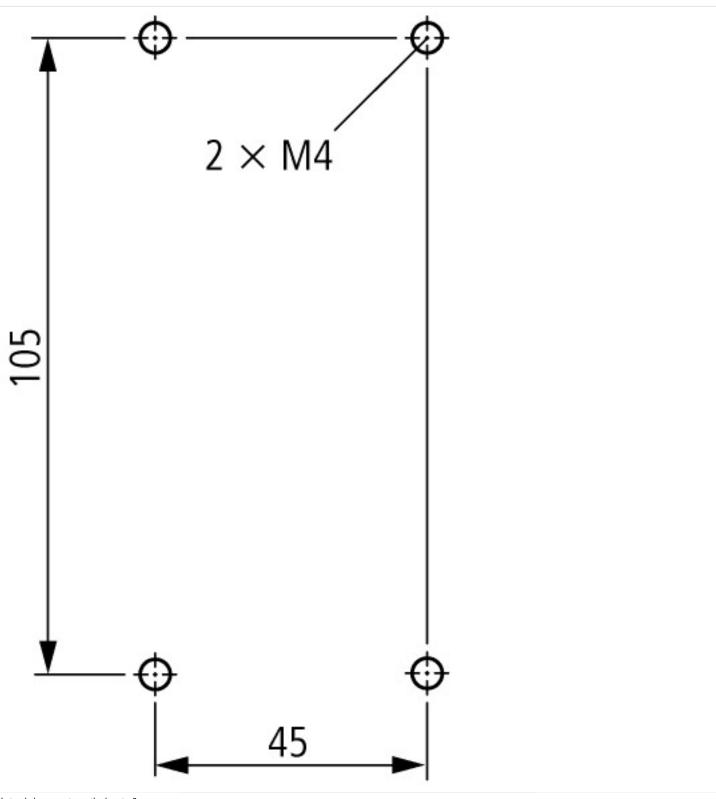
100 % AC-1

Typical examples of application

Electric heat

Dimensions





Lateral clearance to earthed parts: 6 mm

DILM40...DILM72 DILMC40...DILMC65 DILMF40...DILMF65