



**Contactor,75kW/400V,AC operated**



*Powering Business Worldwide™*

**Part no. DILM150(RAC24)**

**Article no. 239585**

### Delivery programme

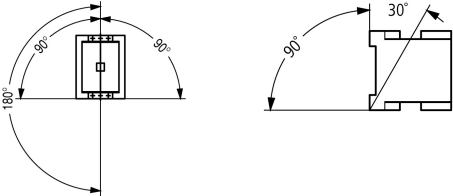
Product range			Contactors
Application			Contactors for Motors
Subrange			Contactors up to 170 A, 3 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces AC-3: Squirrel-cage motors: starting, switching off during running AC-4: Squirrel-cage motors: starting, plugging, reversing, inching
Connection technique			Screw terminals
Pole			3 pole
Rated operational current			
AC-3			
380 V 400 V	$I_e$	A	150
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	190
enclosed	$I_{th}$	A	144
Conventional free air thermal current, 1 pole			
open	$I_{th}$	A	400
enclosed	$I_{th}$	A	360
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	48
380 V 400 V	P	kW	75
660 V 690 V	P	kW	96
AC-4			
220 V 230 V	P	kW	20
380 V 400 V	P	kW	33
660 V 690 V	P	kW	48
Contact sequence			
<b>Instructions</b>			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			AC operation

### 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.	2411-03, 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 <sup>6</sup>	10
DC operated	Operations	x 10 <sup>6</sup>	10
Operating frequency, mechanical			
AC operated	Operations/h		3600
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, 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	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
Protection type			
			IP00
Protection against direct contact when actuated from front (EN 50274)			
			Finger- and back-of-hand proof
Weight			
AC operated		kg	2
DC operated		kg	2.1
Terminal capacity main cable			
Flexible with ferrule		mm <sup>2</sup>	1 x (10 - 95) 2 x (10 - 70)
Stranded		mm <sup>2</sup>	1 x (16 - 95) 2 x (16 - 70)
Solid or stranded		AWG	8...3/0
Flat conductor	Number of segments x width x thickness	mm	2 x (6 x 16 x 0.8)
Main cable connection screw/bolt			
			M10
Tightening torque			
			Nm 14
Terminal capacity control circuit cables			
Solid		mm <sup>2</sup>	1 x (0.75 - 4) 2 x (0.75 - 4)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	18 - 14
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 1 x 6
Terminal capacity control circuit cables			
Solid		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible		mm <sup>2</sup>	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded		AWG	18 - 14
Tool			
Stripping length		mm	10
Screwdriver blade width		mm	3.5

### 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 VDE 0106 Part 101 and Part 101/A1			
between coil and contacts		V AC	690
between the contacts		V AC	690
Making capacity (p.f. to IEC/EN 60947)			
	$U_p$ to 690 V	A	2100
Breaking capacity			
220 V 230 V		A	1500
380 V 400 V AC		A	1500
500 V		A	1500
660 690 V AC		A	1200
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	250
690 V	gG/gL 690 V	A	250
Type "1" coordination			
400 V	gG/gL 500 V	A	250
690 V	gG/gL 690 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	190
at 50 °C	$I_{th} = I_e$	A	180
at 55 °C	$I_{th} = I_e$	A	170
at 60 °C	$I_{th} = I_e$	A	160

enclosed	$I_{th}$	A	144
Conventional free air thermal current, 1 pole			
open	$I_{th}$	A	400
enclosed	$I_{th}$	A	360
<b>AC-3</b>			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	$I_e$	A	150
240 V	$I_e$	A	150
380 V 400 V	$I_e$	A	150
415 V	$I_e$	A	150
440V	$I_e$	A	150
500 V	$I_e$	A	150
660 V 690 V	$I_e$	A	100
Motor rating			
220 V 230 V	P	kWh	
240V	P	kW	48
380 V 400 V	P	kW	52
415 V	P	kW	75
440 V	P	kW	91
440 V	P	kW	95
500 V	P	kW	110
660 V 690 V	P	kW	96
<b>AC-4</b>			
Open, 3-pole: 50 – 60 Hz			
230 V	$I_e$	A	65
240 V	$I_e$	A	65
400 V	$I_e$	A	65
415 V	$I_e$	A	65
440 V	$I_e$	A	65
500 V	$I_e$	A	65
690 V	$I_e$	A	50
Motor rating			
230 V	P	kWh	
240 V	P	kW	20
400 V	P	kW	22
400 V	P	kW	33
415 V	P	kW	39
440 V	P	kW	41
500 V	P	kW	47
690 V	P	kW	48

## DC

Rated operational current, open			
<b>DC-1</b>			
60 V	$I_e$	A	160
110 V	$I_e$	A	160
220 V	$I_e$	A	90
440 V	$I_e$	A	4.5
<b>DC-3</b>			
60 V	$I_e$	A	160
110 V	$I_e$	A	160
220 V	$I_e$	A	40
440 V	$I_e$	A	1
<b>DC-5</b>			
60 V	$I_e$	A	160

110 V	I <sub>e</sub>	A	160
220 V	I <sub>e</sub>	A	40
440 V	I <sub>e</sub>	A	1

### Current heat loss

3-pole at I <sub>th</sub>		W	30.7
Current heat loss at I <sub>e</sub> to AC-3/400 V		W	27
Impedance per pole		mΩ	0.4

### Magnet systems

Voltage tolerance		x U <sub>c</sub>	
AC operated	Pick-up	x U <sub>c</sub>	0.8 - 1.15
Drop-out voltage AC operated	Drop-out	x U <sub>c</sub>	0.25 - 0.6
DC operated	Pick-up	x U <sub>c</sub>	0.7 - 1.2
Notes			at least smoothed two-phase bridge rectifier or three-phase rectifier
DC operated	Drop-out	x U <sub>c</sub>	0.15 - 0.6
Power consumption of the coil in a cold state and 1.0 x U <sub>c</sub>			
50 Hz	Pick-up	VA	180
50 Hz	Sealing	VA	3.1
50 Hz	Sealing	W	2.1
60 Hz	Pick-up	VA	170
60 Hz	Sealing	VA	3.1
60 Hz	Sealing	W	2.1
50/60 Hz	Pick-up	VA	170 170
50/60 Hz	Sealing	VA	3.1 3.1
50/60 Hz	Sealing	W	2.1 2.1
DC operated	Pick-up	W	149
DC operated	Sealing	W	2.1
Duty factor		% DF	100
Switching times at 100 % U <sub>c</sub> (approximate values)			
Main contacts			
AC operated			
Closing delay		ms	28 - 33
Opening delay		ms	35 - 41
DC operated		ms	
Closing delay		ms	35
Opening delay		ms	30
Arcing time		ms	15
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).		mA	$\leq 1$
Lifespan, mechanical; Coil 50/60 Hz	at 50 Hz		Mechanical lifespan at 50 Hz approx. 30% lower than under "Technical data, general"

### Electromagnetic compatibility (EMC)

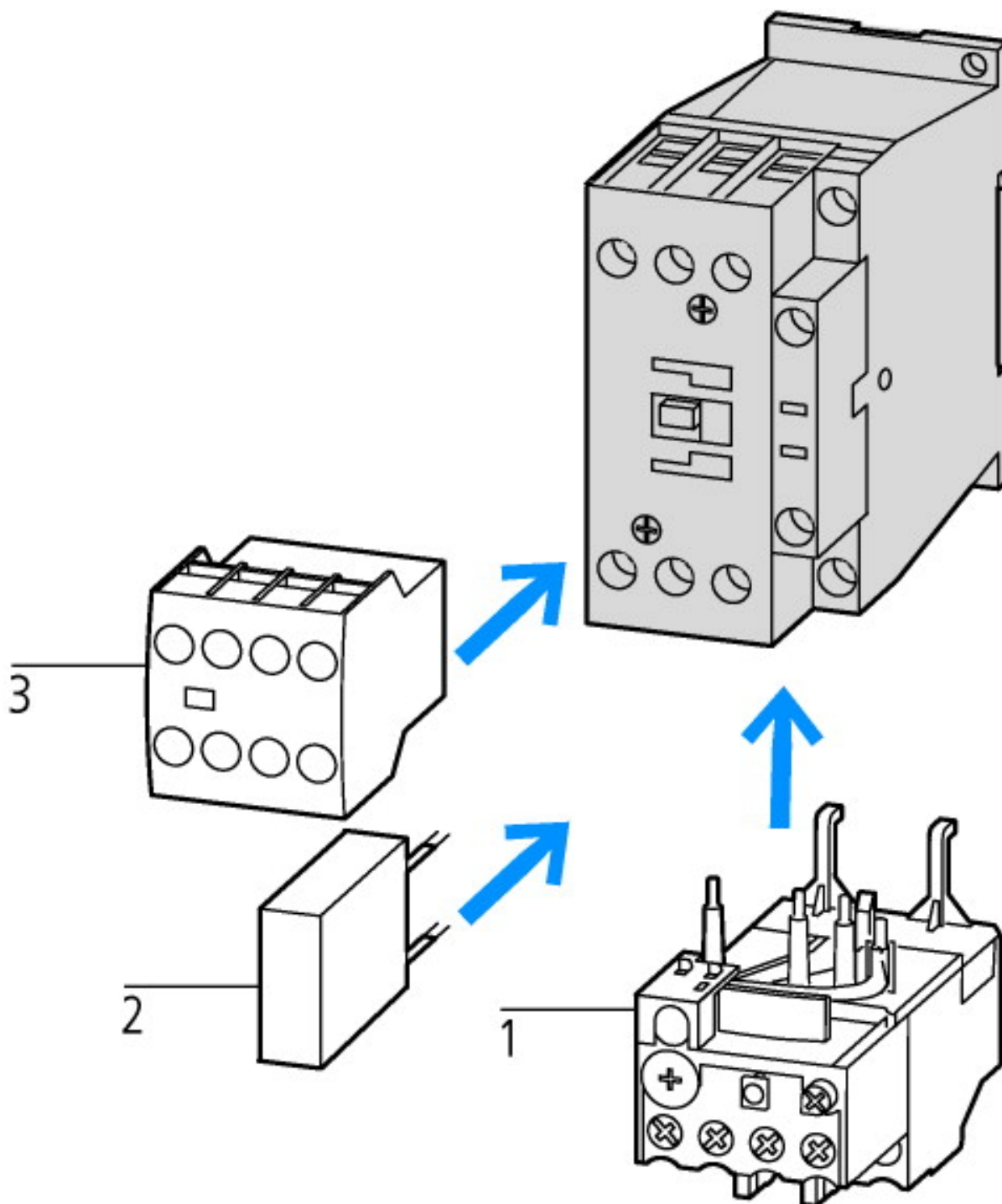
Emitted interference			to EN 60947-1
Interference immunity			to EN 60947-1

### Technical data ETIM 4.0

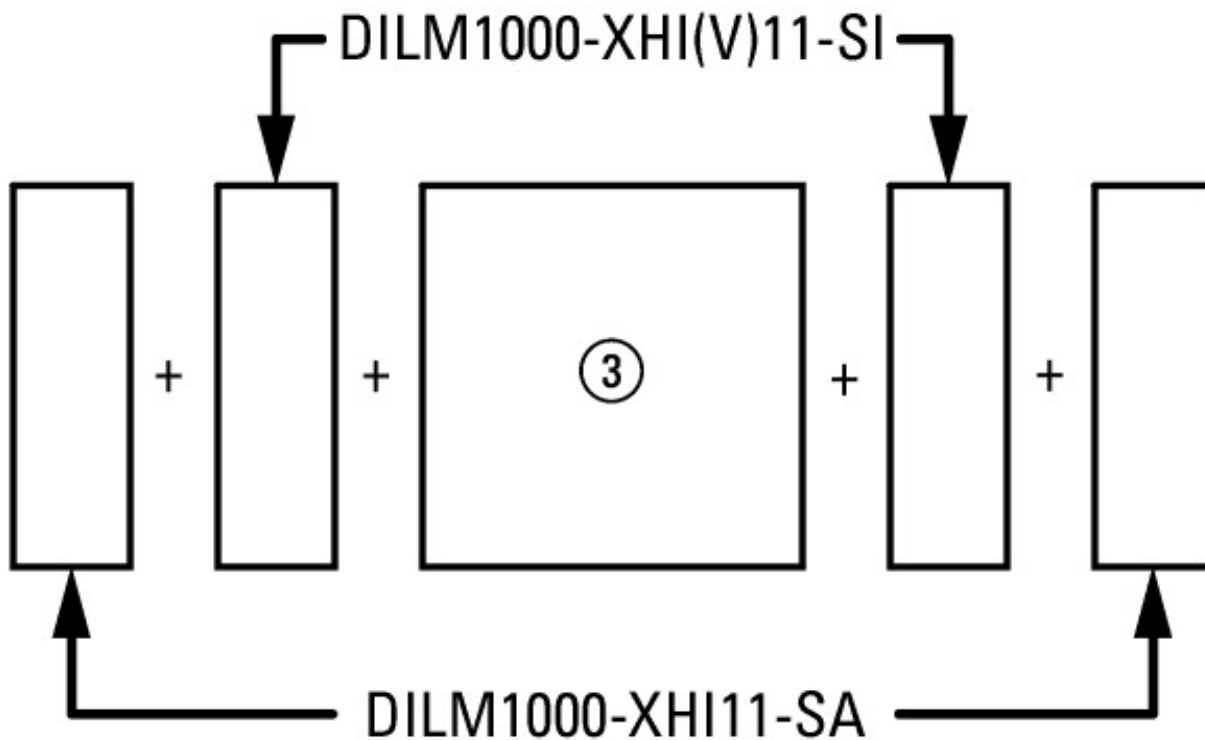
Number of main contacts as N/Os			3
Rated operation current I <sub>e</sub> at AC-1, 400 V			190
Connection type main circuit			Screw connection
Rated control voltage U <sub>s</sub> at AC 60HZ		V	24
Number of auxiliary contacts as N/Os			0
Rated control voltage U <sub>s</sub> at AC 50HZ		V	24
Number of auxiliary contacts as N/Cs			0
Suitable for rail-mounting			No

Rated control voltage $U_s$ at DC	V	0
Voltage type for actuation		AC
Rated operation current $I_e$ at AC-3, 400 V	A	150
Number of N/Cs as main contact		0
Motor rating at AC-3, 400 V	kWh	75

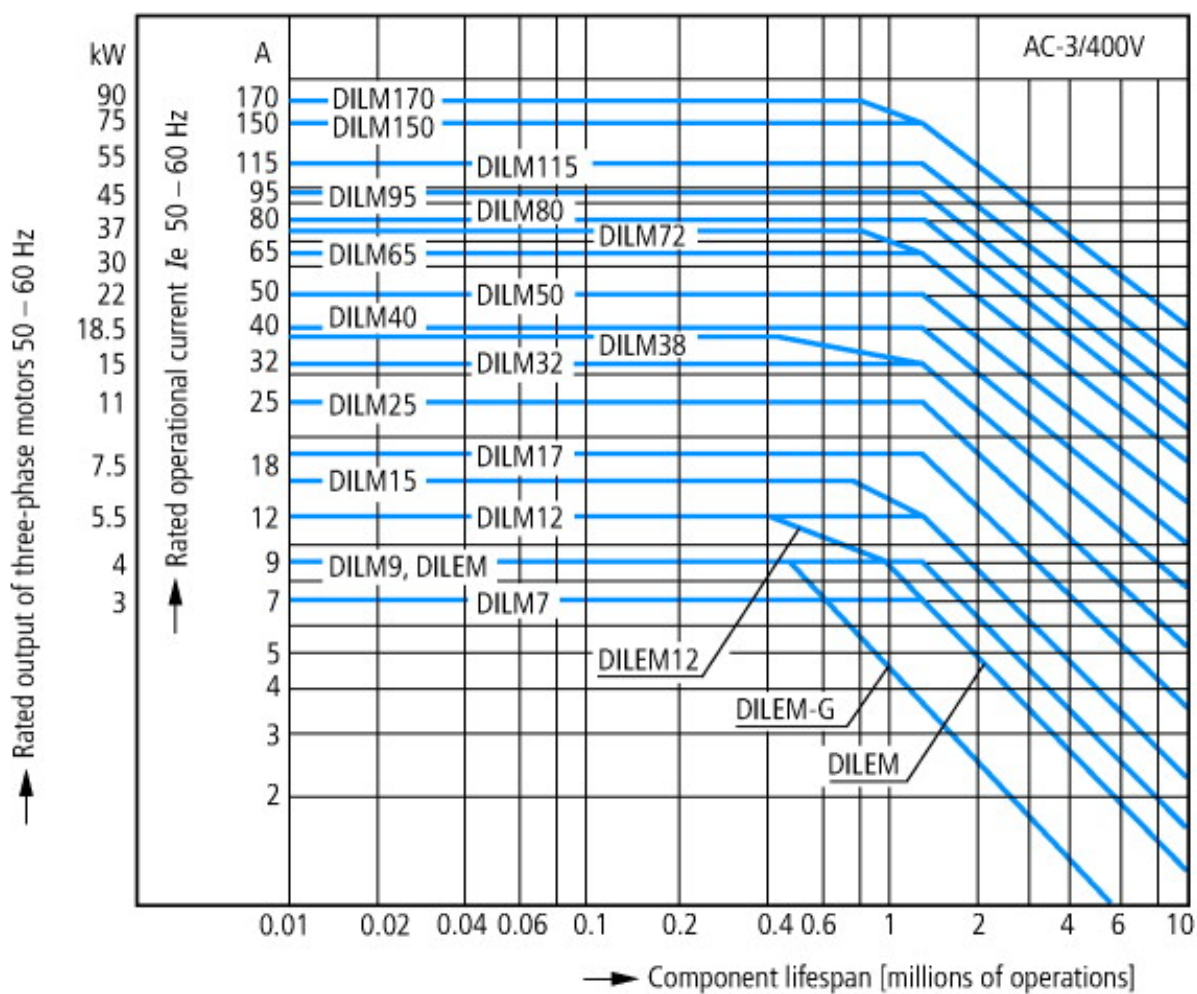
## Characteristics



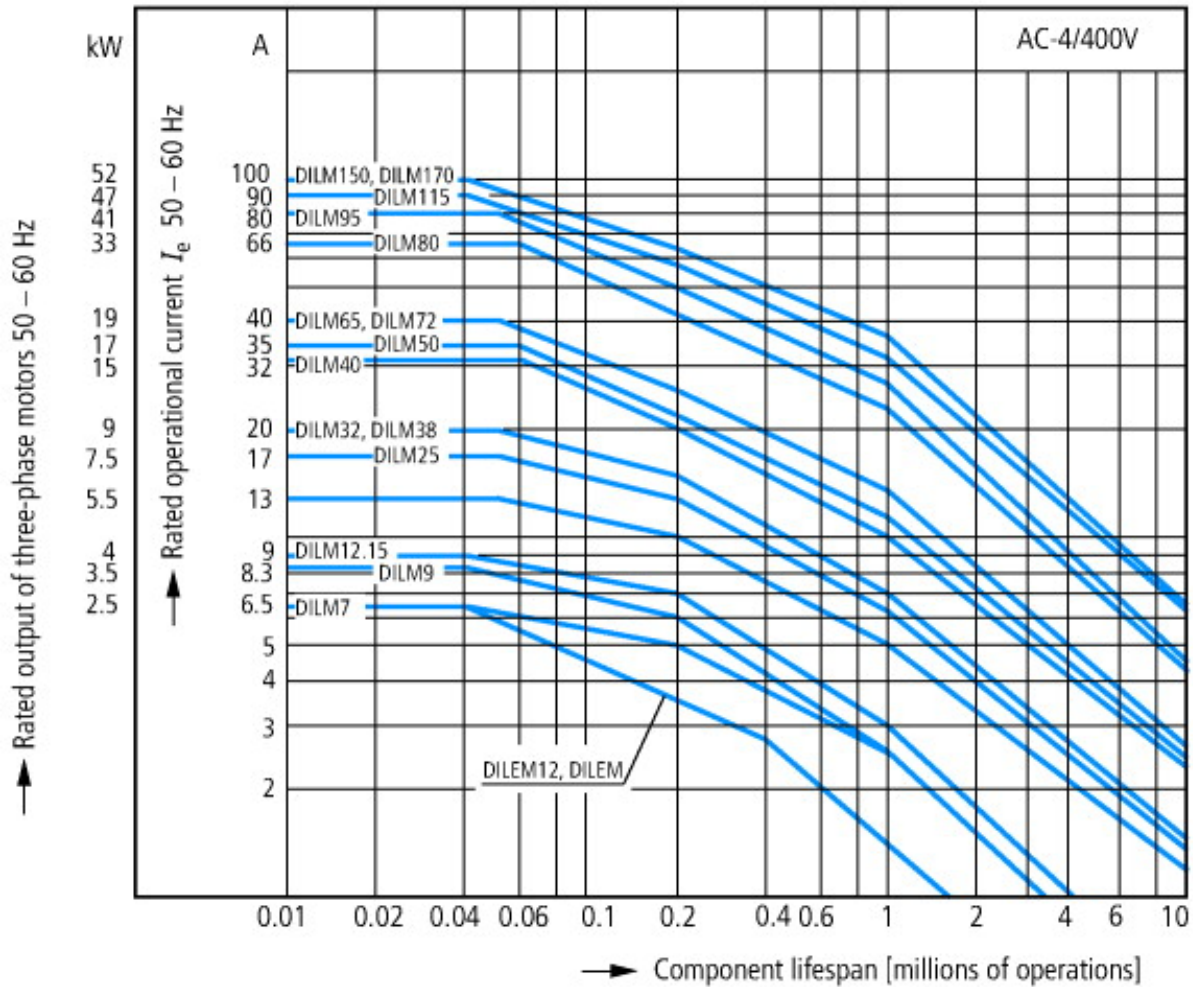
- 1: Overload relay
- 2: Suppressor
- 3: Auxiliary contact modules



on the side: 2 x DILM820-XHI(V)11-SI; 2 x DILM820-XHI(V)11-SA  
 on the side: 2 x DILM1000-XHI(V)11-SI; surface mounting: 1 x DILM150-XHIA22  
 on the side: 2 x DILM1000-XHI(V)11-SI; surface mounting: 1 x DILM150-XHIA11  
 on the side: 2 x DILM1000-XHI(V)11-SA; surface mounting: 1 x DILM150-XHI (4 pole)  
 on the side: 2 x DILM1000-XHI(V)11-SA; surface mounting: 1 x DILM150-XHI (2 pole)



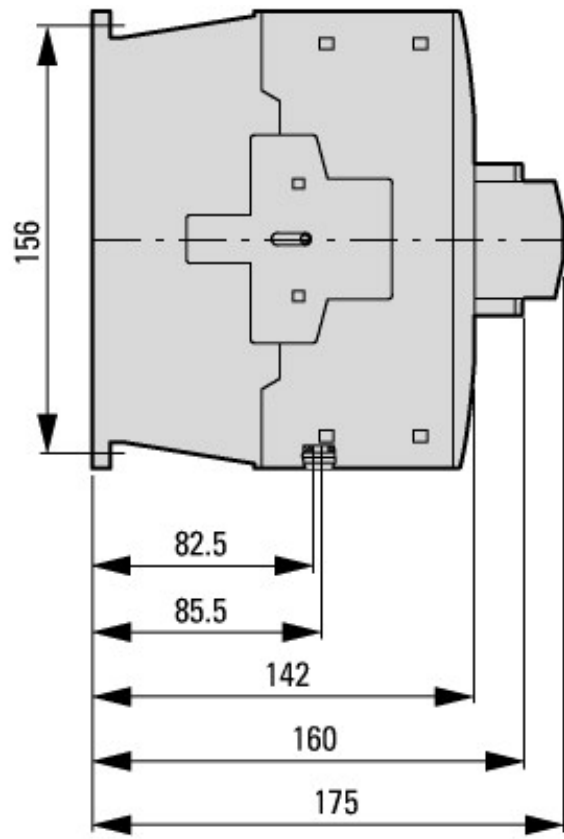
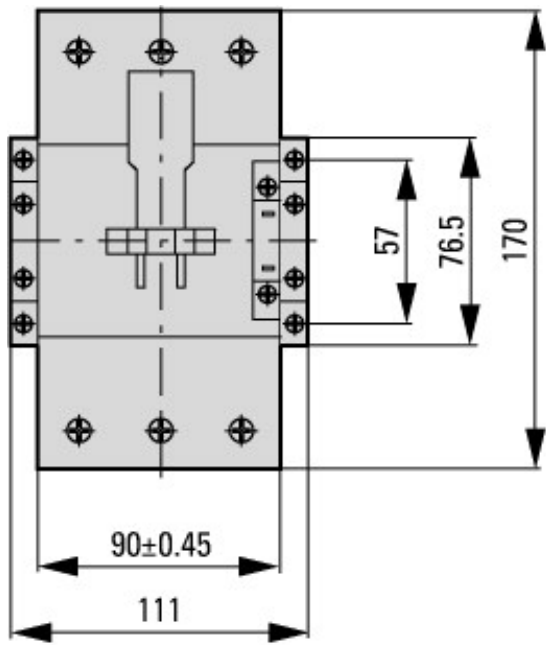
Squirrel-cage motor  
 Operating characteristics  
 Starting: from rest  
 Stopping: after attaining full running speed  
 Electrical characteristics  
 Make: up to 6 x rated motor current  
 Break: up to 1 x rated motor current  
 Utilization category  
 100 % AC-3  
 Typical applications  
 Compressors  
 Lifts  
 Mixers  
 Pumps  
 Escalators  
 Agitators  
 Fans  
 Conveyor belts  
 Centrifuges  
 Hinged flaps  
 Bucket-elevators  
 Air conditioning system  
 General drives in manufacturing and processing machines



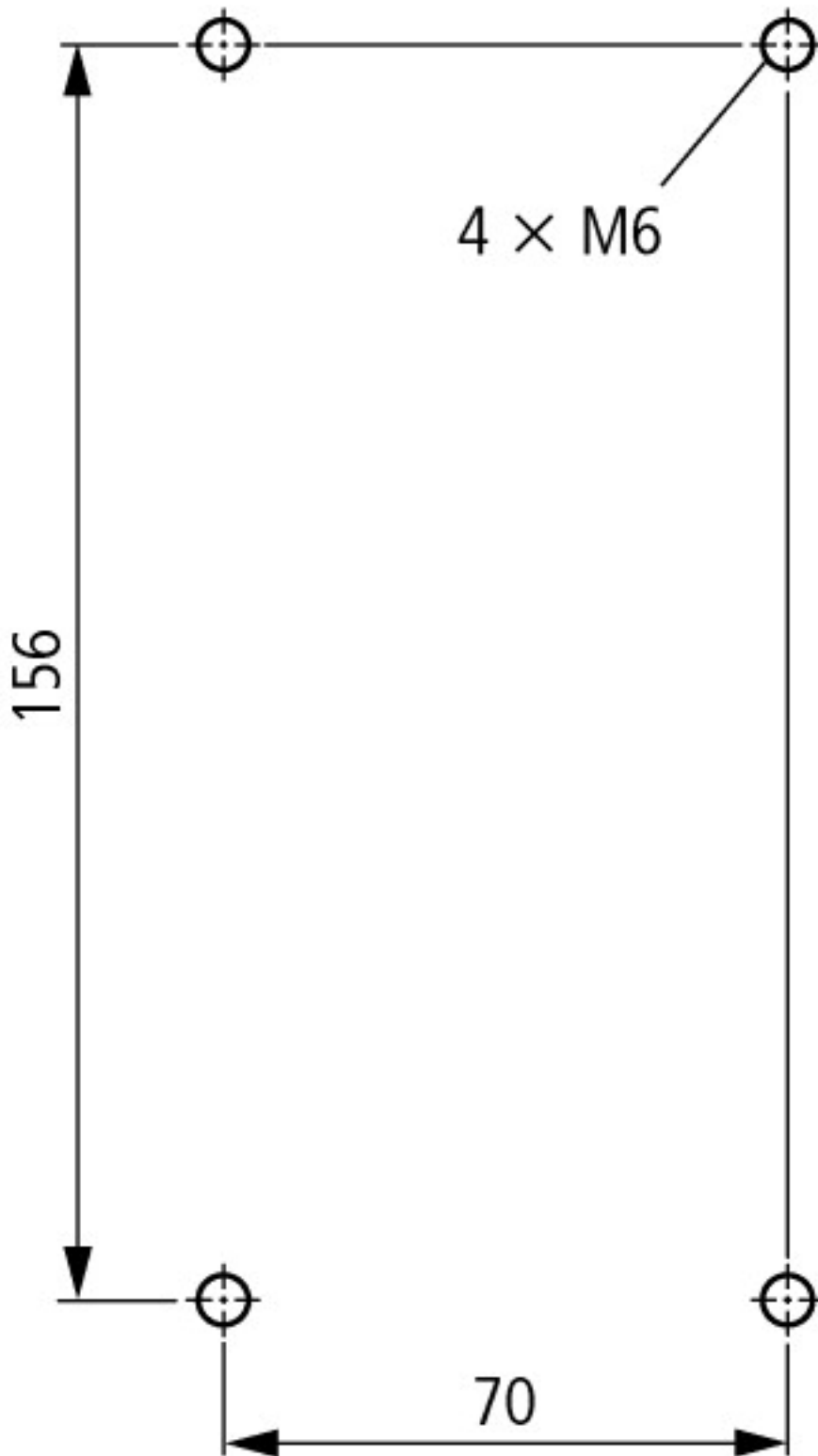
Extreme switching duty  
 Squirrel-cage motor  
 Operating characteristics  
 Inching, plugging, reversing  
 Electrical characteristics  
 Make: up to 6 x rated motor current  
 Break: up to 6 x rated motor current  
 Utilization category  
 100 % AC-4  
 Typical applications  
 Printing presses  
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

## Dimensions





Contacteur avec module de contact auxiliaire



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](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2010_10.pdf)

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

<http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&startpage=5.85>

<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](http://www.moeller.net/binary/ver_techpapers/ver934en.pdf)

X-Start - New Generation:100 years  
 of Moeller contactors - Continous  
 Progress-

[http://www.moeller.net/binary/ver\\_techpapers/ver937en.pdf](http://www.moeller.net/binary/ver_techpapers/ver937en.pdf)

X-Start - Modern Switching Installations Efficiently Fitted and Wired Securely	<a href="http://www.moeller.net/binary/ver_techpapers/ver938en.pdf">http://www.moeller.net/binary/ver_techpapers/ver938en.pdf</a>
Mirror Contacts for Highly-Reliable Information Relating to Safety-Related Control Functions	<a href="http://www.moeller.net/binary/ver_techpapers/ver944en.pdf">http://www.moeller.net/binary/ver_techpapers/ver944en.pdf</a>
Effect of the Cabel Capacitance of Long Control Cables on the Actuation of Contactors	<a href="http://www.moeller.net/binary/ver_techpapers/ver949en.pdf">http://www.moeller.net/binary/ver_techpapers/ver949en.pdf</a>
Motor starters and "Special Purpose Ratings" for the North American market	<a href="http://www.moeller.net/binary/ver_techpapers/ver953en.pdf">http://www.moeller.net/binary/ver_techpapers/ver953en.pdf</a>
Switchgear for Luminaires	<a href="http://www.moeller.net/binary/ver_techpapers/ver955en.pdf">http://www.moeller.net/binary/ver_techpapers/ver955en.pdf</a>
Standard Compliant and Functionally Safe Engineering Design with Mechanical Auxiliary Contacts	<a href="http://www.moeller.net/binary/ver_techpapers/ver956en.pdf">http://www.moeller.net/binary/ver_techpapers/ver956en.pdf</a>
The Interaction of Contactors with PLCs	<a href="http://www.moeller.net/binary/ver_techpapers/ver957en.pdf">http://www.moeller.net/binary/ver_techpapers/ver957en.pdf</a>
Busbar Component Adapters for modern Industrial control panels	<a href="http://www.moeller.net/binary/ver_techpapers/ver960en.pdf">http://www.moeller.net/binary/ver_techpapers/ver960en.pdf</a>