
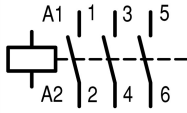




**Contactor, 3p, 75kW/400V/AC3**

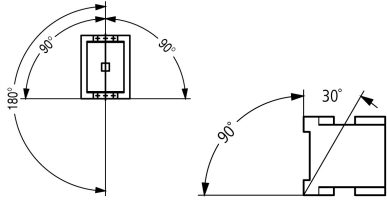
**Part no. DILM150(RAC48)**  
**Article no. 239586**  
**Catalog No. XTCE150G00W**

## 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 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
Pole			3 pole
<b>Rated operational current</b>			
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
<b>Max. rating for three-phase motors, 50 - 60 Hz</b>			
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			
<strong>Instructions</strong>			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

## Technical data

<b>General</b>			
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
<b>Operating frequency, mechanical</b>			
AC operated	Operations/h		3600
DC operated	Operations/h		3600
<b>Climatic proofing</b>			
			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
<b>Ambient temperature</b>			
Open	°C		-25 - +60
Enclosed	°C		- 25 - 40
Storage	°C		- 40 - 80
<b>Mounting position</b>			
			
<b>Mechanical shock resistance (IEC/EN 60068-2-27)</b>			
Half-sinusoidal shock, 10 ms			
<b>Main contacts</b>			
N/O contact	g		10
<b>Auxiliary contacts</b>			
N/O contact	g		7
N/C contact	g		5
<b>Mechanical shock resistance (IEC/EN 60068-2-27) when tabletop-mounted</b>			
Half-sinusoidal shock, 10 ms			
<b>Main contacts</b>			
N/O contact	g		10
<b>Auxiliary contacts</b>			
N/O contact	g		7
N/C contact	g		5
<b>Degree of Protection</b>			IP00
<b>Protection against direct contact when actuated from front (EN 50274)</b>			Finger and back-of-hand proof
<b>Weight</b>			
AC operated	kg		2
DC operated	kg		2.1
<b>Terminal capacity main cable</b>			
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	Lamellenzahl x Breite x Dicke	mm	2 x (6 x 16 x 0.8)
<b>Main cable connection screw/bolt</b>			M10
<b>Tightening torque</b>			Nm 14
<b>Terminal capacity control circuit cables</b>			
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
<b>Control circuit cable connection screw/bolt</b>			M3.5
<b>Tightening torque</b>			Nm 1.2
<b>Tool</b>			
<b>Main cable</b>			
Hexagon socket-head spanner	SW	mm	5
<b>Control circuit cables</b>			

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 EN 61140			
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		A	1500
500 V		A	1500
660 V 690 V		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
AC-3			
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
380 V 400 V	$I_e$	A	150
Motor rating	P	kWh	
220 V 230 V	P	kW	48
240V	P	kW	52
380 V 400 V	P	kW	75
415 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			
220 V 230 V	$I_e$	A	65
240 V	$I_e$	A	65
380 V 400 V	$I_e$	A	65
415 V	$I_e$	A	65
440 V	$I_e$	A	65
500 V	$I_e$	A	65
660 V 690 V	$I_e$	A	50
Motor rating	P	kWh	
220 V 230 V	P	kW	20
240 V	P	kW	22
380 V 400 V	P	kW	33
415 V	P	kW	39
440 V	P	kW	41
500 V	P	kW	47
660 V 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	$I_e$	A	160
220 V	$I_e$	A	40
440 V	$I_e$	A	1

## Current heat loss

3-pole at $I_{th}$		W	30.7
Current heat loss at $I_e$ to AC-3/400 V		W	27
Impedance per pole		mΩ	0.4

## Magnet systems

Voltage tolerance		x $U_c$	
AC operated	Pick-up	x $U_c$	0.8 - 1.15

Drop-out voltage AC operated	Drop-out	$x U_c$	0.25 - 0.6
DC operated	Pick-up	$x U_c$	0.7 - 1.2
DC operated	Drop-out	$x U_c$	0.15 - 0.6
Notes			at least smoothed two-phase bridge rectifier or three-phase rectifier
Power consumption of the coil in a cold state and $1.0 x U_c$			
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
DC operated	Pick-up	W	149
DC operated	Sealing	W	2.1
Duty factor		% DF	100
Switching times at 100 % $U_c$ (approximate values)			
Main contacts			
AC operated			
Closing delay		ms	28 - 33
Opening delay		ms	35 - 41
DC operated			
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	 1
Lifespan, mechanical; Coil 50/60 Hz		$x 10^6$	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

### Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	150
Heat dissipation per pole, current-dependent	$P_{vid}$	W	10.7
Equipment heat dissipation, current-dependent	$P_{vid}$	W	32.1
Static heat dissipation, non-current-dependent	$P_{vs}$	W	2.3
Heat dissipation capacity	$P_{diss}$	W	0
Operating ambient temperature min.		°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 5.0

Low-voltage industrial components (EG000017) / Magnet contactor, AC-switching (EC000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8-27-37-10-03 [AAB718011])		
Rated control supply voltage $U_s$ at AC 50HZ	V	42 - 48
Rated control supply voltage $U_s$ at AC 60HZ	V	42 - 48
Rated control supply voltage $U_s$ at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current $I_e$ at AC-1, 400 V	A	190
Rated operation current $I_e$ at AC-3, 400 V	A	150
Rated operation power at AC-3, 400 V	kW	75
Rated operation current $I_e$ at AC-4, 400 V	A	65
Rated operation power $I_e$ at AC-4, 400 V	kW	33
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
Connection type main current circuit		Screw connection
Number of normally closed contacts as main contact		0
Number of main contacts as normally open contact		3

## Approvals

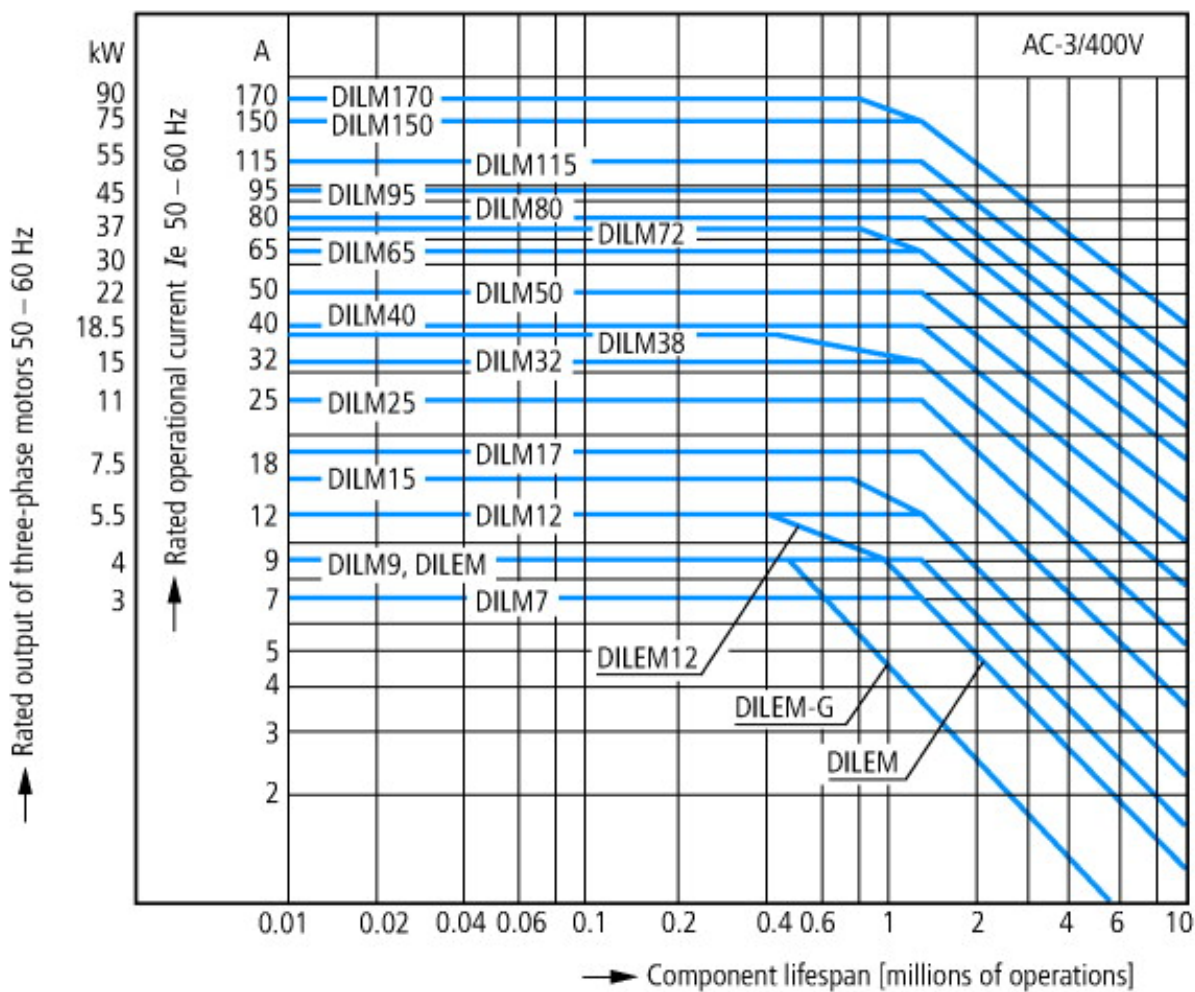
Product Standards		IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.		E29096
UL Category Control No.		NLDX
CSA File No.		012528
CSA Class No.		2411-03, 3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No



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



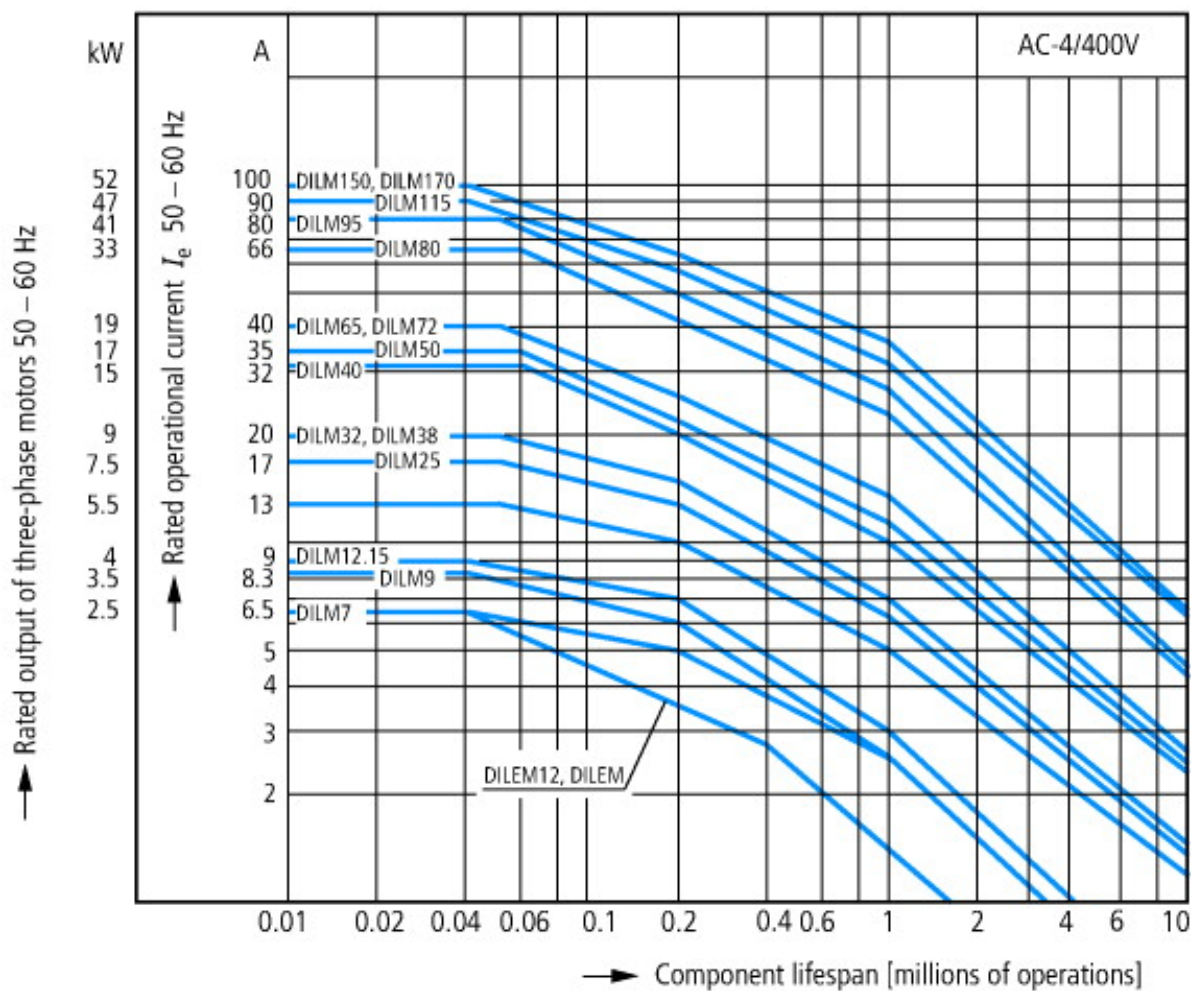
on the side: 2 x DILM820-XHI(V)11-SI; 2 x DILM820-XHI(V)11-SA  
 on the side: 2 x DILM1000-XHI(V)11-SI; surface mounting: 1 x DILM150-XHIA22  
 on the side: 2 x DILM1000-XHI(V)11-SI; surface mounting: 1 x DILM150-XHIA11  
 on the side: 2 x DILM1000-XHI(V)11-SA; surface mounting: 1 x DILM150-XHI (4 pole)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

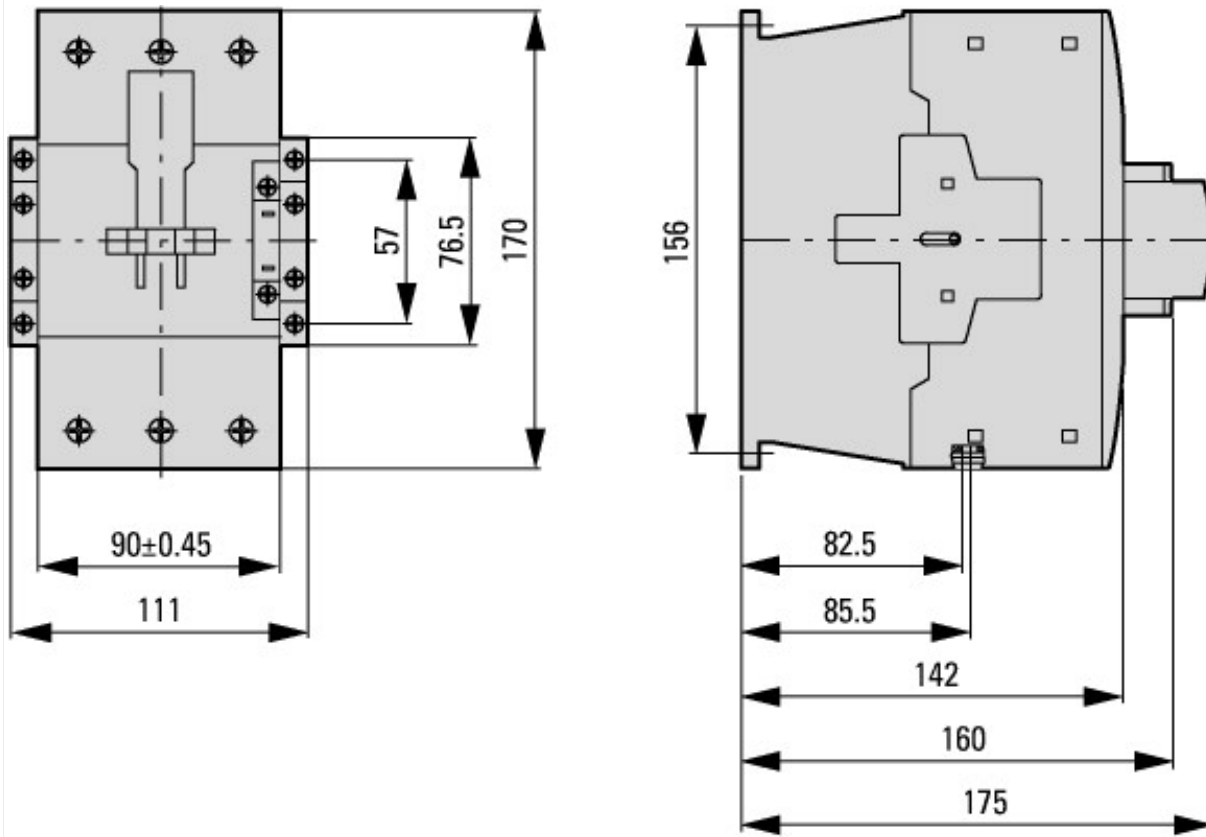


Break: up to 1 x rated motor current  
 Utilization category  
 100 % AC-3  
 Typical applications  
 Compressors  
 Lifts  
 Mixers  
 Pumps  
 Escalators  
 Agitators  
 Fans  
 Conveyor belts  
 Centrifuges  
 Hinged flaps  
 Bucket-elevators  
 Air conditioning system  
 General drives in manufacturing and processing machines

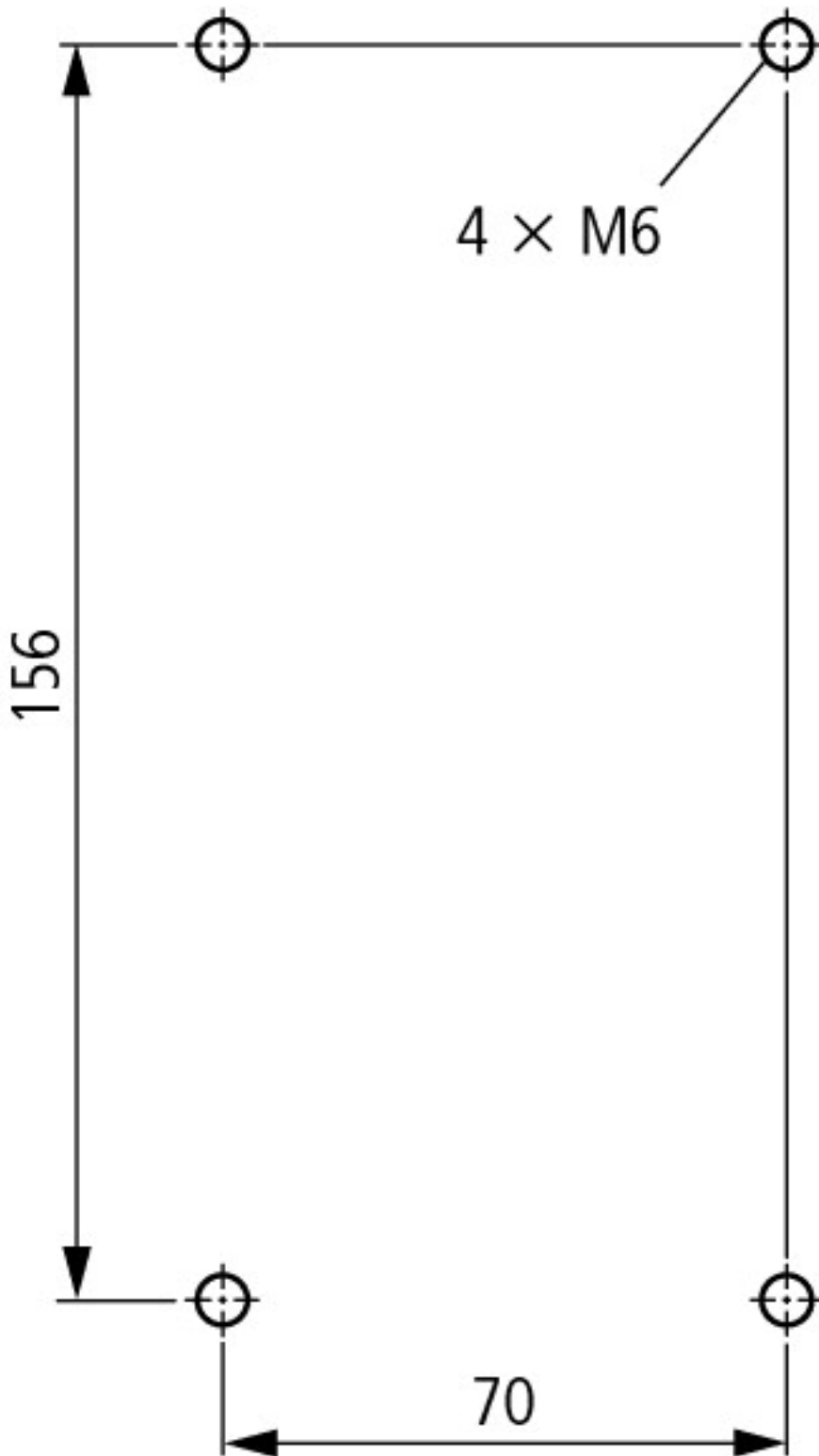


Extreme switching duty  
 Squirrel-cage motor  
 Operating characteristics  
 Inching, plugging, reversing  
 Electrical characteristics  
 Make: up to 6 x rated motor current  
 Break: up to 6 x rated motor current  
 Utilization category  
 100 % AC-4  
 Typical applications  
 Printing presses  
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

## Dimensions



Contacteur 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	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2010_10.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407039Z2010_10.pdf</a>
UL/CSA: Approved rating data	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.84">http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.84</a>
UL/CSA: UL/CSA: Special Purpose Rating	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.85">http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.85</a>
UL/CSA: UL/CSA: Short Circuit Current Rating (SCCR)	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.86">http://de.ecat.moeller.net/flip-cat/?edition=HPLTE&amp;startpage=5.86</a>
Switchgear of Power Factor Correction Systems	<a href="http://www.moeller.net/binary/ver_techpapers/ver934en.pdf">http://www.moeller.net/binary/ver_techpapers/ver934en.pdf</a>
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 Cable 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>