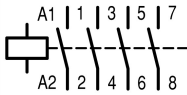




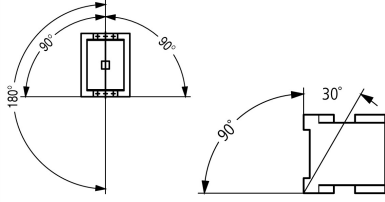
Contactor, 4p, 160A/AC1

Part no. DILMP160(RAC240)
Catalog No. 109915
Eaton Catalog No. XTCF160G00B
EL-Nummer (Norway) 4130409

Delivery program

Product range			Contactors
Application			Contactors for 4 pole electric consumers
Subrange			Contactors up to 200 A, 4 pole
Utilization category			AC-1: Non-inductive or slightly inductive loads, resistance furnaces NAC-3: Normal AC induction motors: starting, switch off during running
Connection technique			Screw terminals
Number of poles			4 pole
Rated operational current			
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
at 40 °C	$I_{th} = I_e$	A	160
at 50 °C	$I_{th} = I_e$	A	150
at 55 °C	$I_{th} = I_e$	A	143
at 60 °C	$I_{th} = I_e$	A	138
Contact sequence			
For use with			DILM150-XHI(A)(V)... DILM1000-XHI(V)...
Actuating voltage			RAC 240: 190 - 240 V 50/60 Hz
Voltage AC/DC			AC operation
Instructions			Contacts to EN 50012. integrated suppressor circuit in actuating electronics

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	$\times 10^6$	10
DC operated	Operations	$\times 10^6$	10
Operating frequency, mechanical			
AC operated	Operations/h		3600
DC operated	Operations/h		3600
Climatic proofing			Damp heat, constant, to IEC 60068-2-3 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Open		°C	-25 - +60
Enclosed		°C	- 25 - 40
Storage		°C	- 40 - 80
Mounting position			
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
Degree of Protection			IP00
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Stripping length		mm	15
Terminal capacity main cable			
Flexible with ferrule		mm ²	1 x (10 - 95) 2 x (10 - 70)
Stranded		mm ²	1 x (16 - 120) 2 x (16 - 95)
Solid or stranded		AWG	8 - 3/0
Flat conductor	Lamellenzahl x Breite x Dicke	mm	2 x (6 x 16 x 0.8)
Terminal screw			M10
Tightening torque		Nm	14
Stripping length		mm	15
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
Terminal screw			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

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	440
between the contacts		V AC	440
Making capacity (cos φ)	Up to 690 V	A	1330 According to IEC/EN 60947
Breaking capacity			
220 V 230 V		A	950
380 V 400 V		A	950
500 V		A	950
660 V 690 V		A	750
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	160
at 50 °C	$I_{th} = I_e$	A	150
at 55 °C	$I_{th} = I_e$	A	143
at 60 °C	$I_{th} = I_e$	A	138
enclosed	I_{th}	A	128
Conventional free air thermal current, 1 pole			
open	I_{th}	A	415
enclosed	I_{th}	A	373
Motor rating	P	kWh	
220/230 V	P	kW	58
240 V	P	kW	63
380/400 V	P	kW	100
415 V	P	kW	109
440 V	P	kW	116
500 V	P	kW	132
690 V	P	kW	174

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
Motor rating	P	kWh	
220 V 230 V	P	kW	30
240V	P	kW	33
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

DC

Rated operational current, open			
DC-1			
60 V	I_e	A	160
110 V	I_e	A	160
220 V	I_e	A	160

Current heat loss

3 pole, at I_{th} (60°)		W	46
Impedance per pole		mΩ	0.6

Magnet systems

Voltage tolerance			
AC operated 50 Hz	Pick-up	$x U_c$	0.8 - 1.15
AC operated 50/60 Hz		$x U_c$	0.8 - 1.15
Drop-out voltage AC operated	Drop-out	$x U_c$	0.25 - 0.6
Power consumption of the coil in a cold state and $1.0 x U_c$			

AC operated 50/60 Hz	Pick-up	VA	180
AC operated 50/60 Hz	Pick-up	W	150
AC operated 50/60 Hz	Sealing	VA	3.1
AC operated 50/60 Hz	Sealing	W	2.3
Duty factor		% DF	100
Changeover time at 100 % U _C (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	28 - 33
Opening delay		ms	35 - 41
Permissible residual current with actuation of A1 - A2 by the electronics (with 0 signal).		mA	≤ 1

Rating data for approved types

Switching capacity			
Maximum motor rating			
Three-phase			
200 V 208 V		HP	25
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	110
600V 60Hz 3phase, 347V 60Hz 1phase		A	110
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
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	160
Heat dissipation per pole, current-dependent	P_{vid}	W	12.1
Equipment heat dissipation, current-dependent	P_{vid}	W	36.3
Static heat dissipation, non-current-dependent	P_{vs}	W	2.3
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			
10.2.3.1 Verification of thermal stability of enclosures			
10.2.3.2 Verification of resistance of insulating materials to normal heat			
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			
10.2.4 Resistance to ultra-violet (UV) radiation			
10.2.5 Lifting			
10.2.6 Mechanical impact			
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 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			

Technical data ETIM 6.0

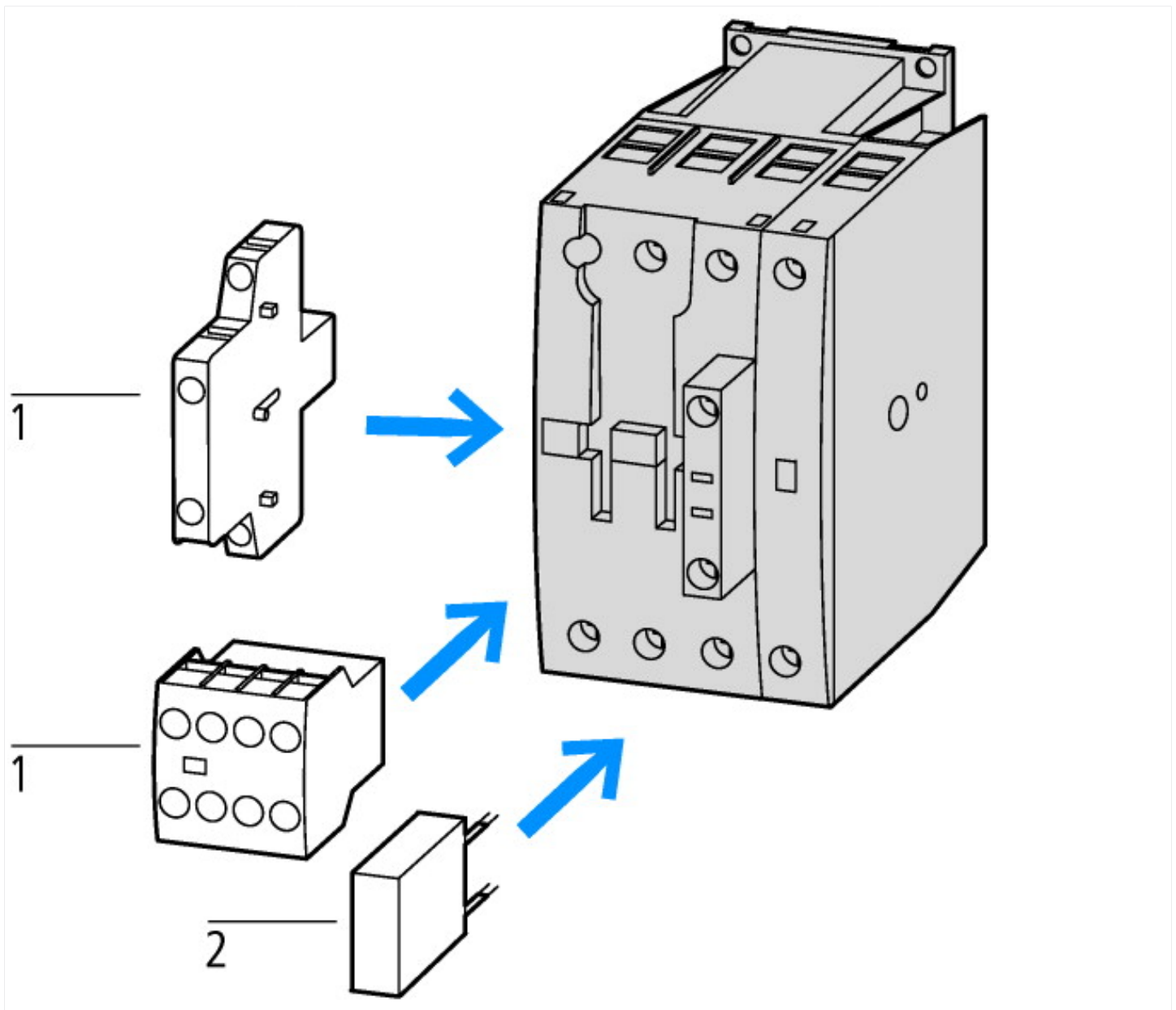
Low-voltage industrial components (EG000017) / Power contactor, AC switching (EC000066)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Power contactor, AC switching (ecl@ss8.1-27-37-10-03 [AAB718012])		
Rated control supply voltage U_s at AC 50HZ	V	190 - 240
Rated control supply voltage U_s at AC 60HZ	V	190 - 240
Rated control supply voltage U_s at DC	V	0 - 0

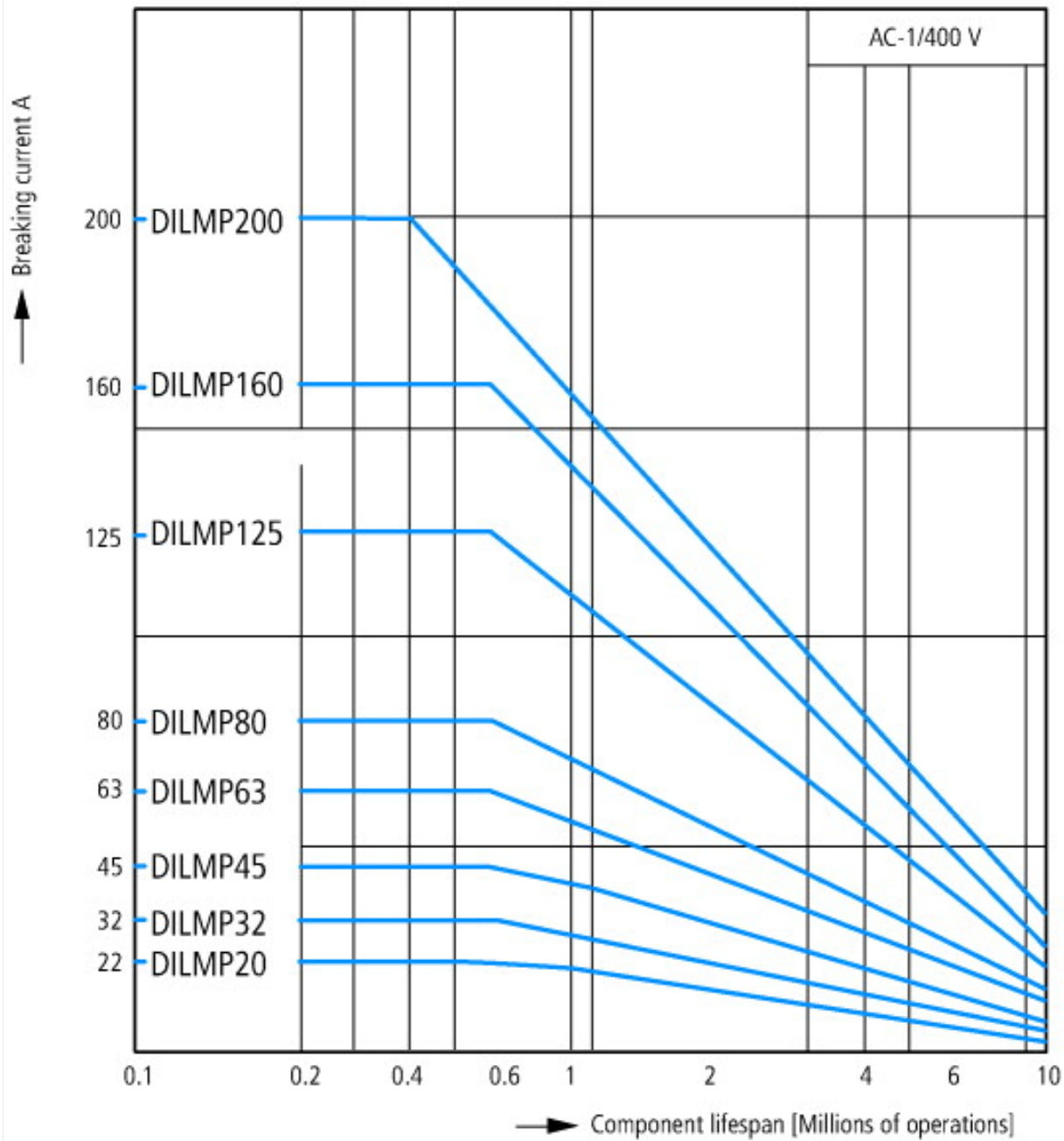
Voltage type for actuating		AC
Rated operation current I _e at AC-1, 400 V	A	160
Rated operation current I _e at AC-3, 400 V	A	95
Rated operation power at AC-3, 400 V	kW	45
Rated operation current I _e at AC-4, 400 V	A	65
Rated operation power I _e at AC-4, 400 V	kW	33
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		0
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		4

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

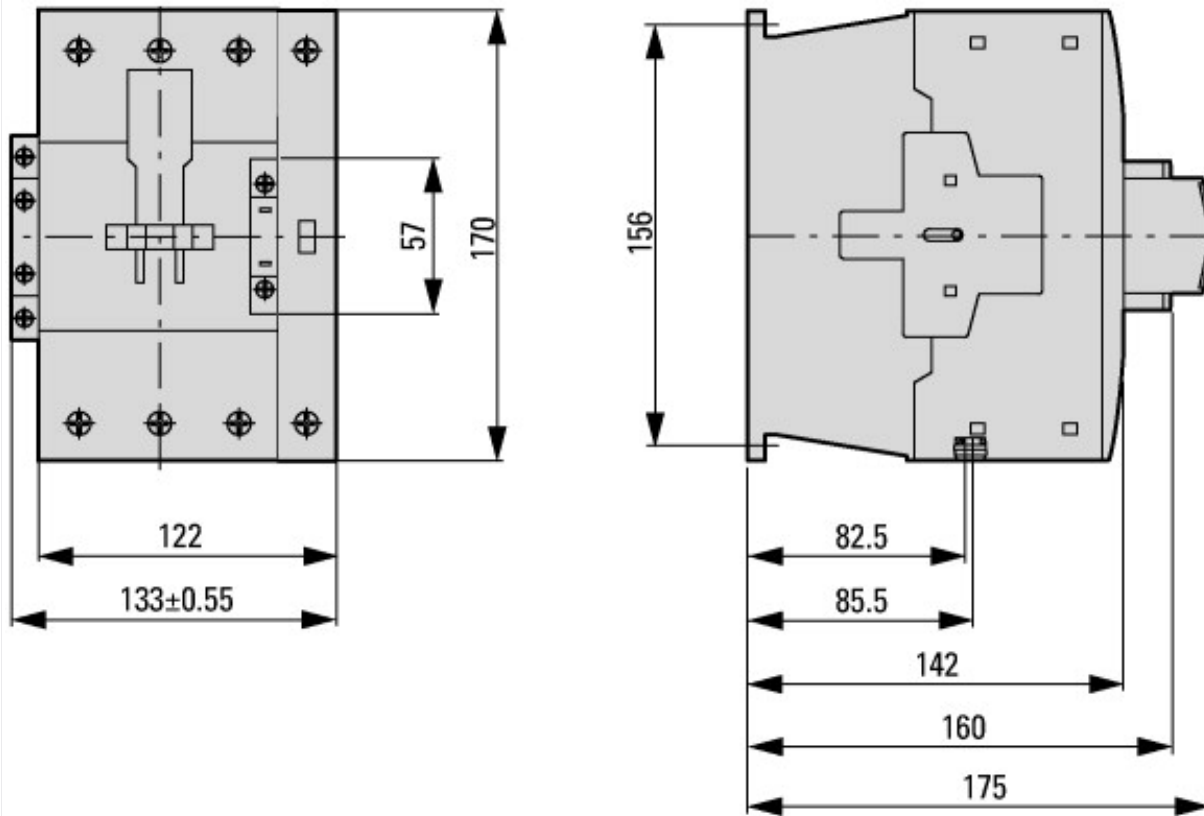
Characteristics



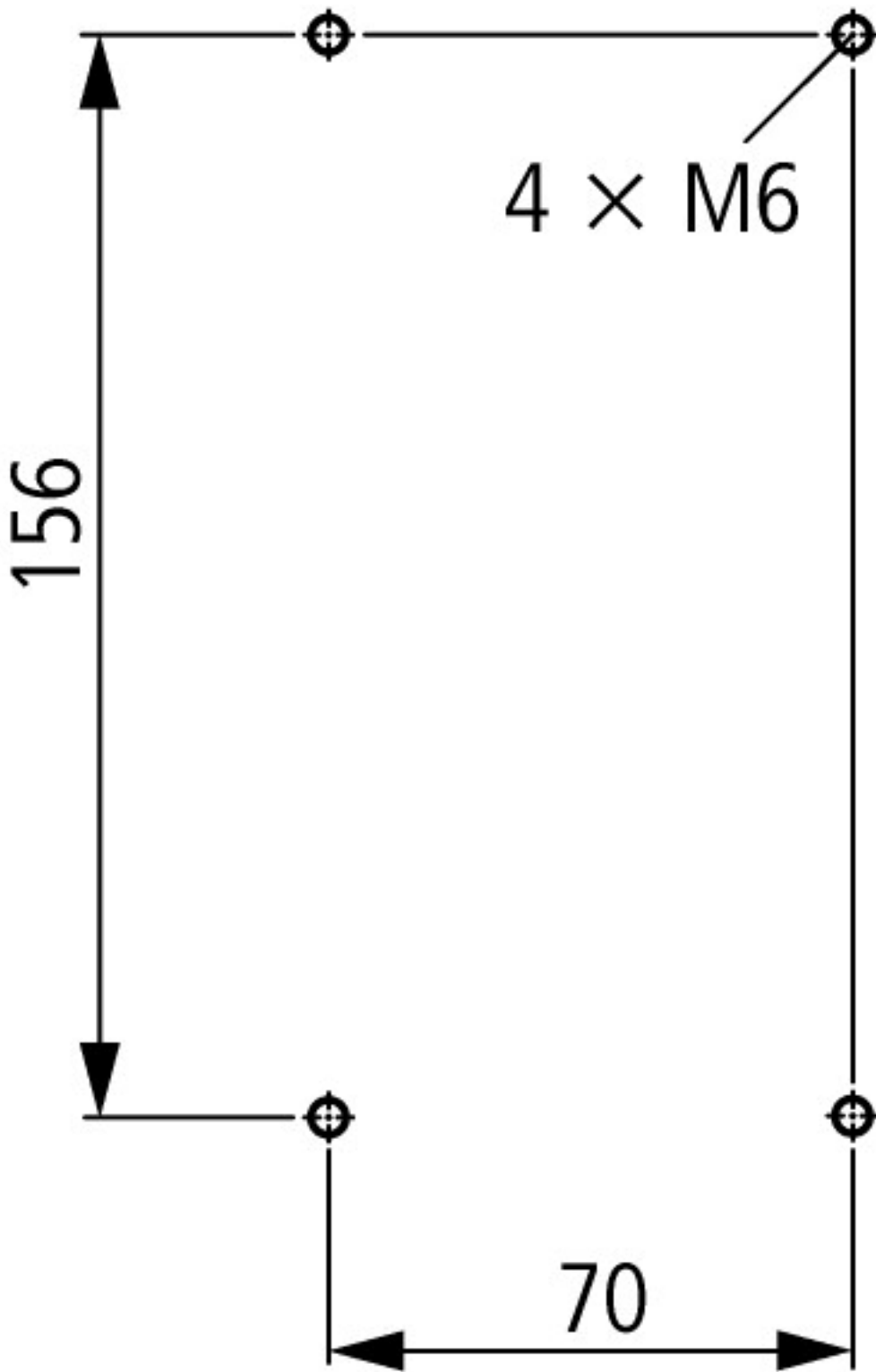


Switching conditions for 4 pole, non-motor loads
 Operating characteristics
 Non inductive and slightly inductive loads
 Electrical characteristics
 Switch on: 1 x rated operational current
 Switch off: 1 x rated operational current
 Utilization category
 100 % AC-1
 Typical examples of application
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

Dimensions



Contactors



distance at side to earthed parts: 10 mm

DILMP125
 DILMP160
 DILMP200

Additional product information (links)

IL03407049Z (AWA2100-2356) 4 pole Contactor

IL03407049Z (AWA2100-2356) 4 pole Contactor ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407049Z2012_01.pdf

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

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 Cabel 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