



Contactor, 3p+1N/C, 11kW/400V/AC3

Part no. DILM25-01(RDC24)
Article no. 277178
Catalog No. XTCE025C01TD



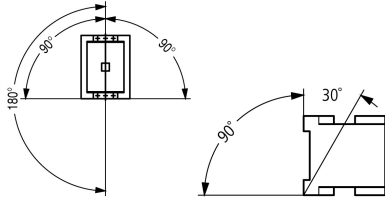
Delivery program

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
			IE3
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	25
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	A	45
enclosed	I_{th}	A	36
Conventional free air thermal current, 1 pole			
open	I_{th}	A	100
enclosed	I_{th}	A	90
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	P	kW	7.5
380 V 400 V	P	kW	11
660 V 690 V	P	kW	14
AC-4			
220 V 230 V	P	kW	3.5
380 V 400 V	P	kW	6
660 V 690 V	P	kW	8.5
Contacts			
N/C = Normally closed			1 NC
Contact sequence			
Instructions			
Can be combined with auxiliary contact			DILA-XHI(V).. DILM32-XHI11-S
Voltage AC/DC			DC operation

Technical data

General

Standards			IEC/EN 60947, VDE 0660, UL, CSA
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Lifespan, mechanical		
AC operated	Operations	$\times 10^6$ 10
DC operated	Operations	$\times 10^6$ 10
Operating frequency, mechanical		
AC operated	Operations/h	5000
DC operated	Operations/h	5000
Climatic proofing		
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	6.9
Auxiliary contacts		
N/O contact	g	5.3
N/C contact	g	3.5
Degree of Protection		
IP00		
Protection against direct contact when actuated from front (EN 50274)		
Finger and back-of-hand proof		
Weight		
AC operated	kg	0.42
DC operated	kg	0.48
Terminal capacity main cable		
Solid	mm ²	1 x (0.75 - 16) 2 x (0.75 - 10)
Flexible with ferrule	mm ²	1 x (0.75 - 16) 2 x (0.75 - 10)
Stranded	mm ²	1 x 16
Solid or stranded	AWG	18 - 6
Main cable connection screw/bolt		
M5		
Tightening torque		
Nm 3.2		
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 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded	AWG	18 - 14
Control circuit cable connection screw/bolt		
M3.5		
Tightening torque		
Nm 1.2		
Tool		
Main cable		
Pozidriv screwdriver	Size	2

Standard screwdriver		mm	0.8 x 5.5 1 x 6
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 (p.f. to IEC/EN 60947)			
	Up to 690 V	A	350
Breaking capacity			
220 V 230 V		A	250
380 V 400 V		A	250
500 V		A	250
660 V 690 V		A	150
Short-circuit rating			
Short-circuit protection maximum fuse			
Type "2" coordination			
400 V	gG/gL 500 V	A	35
690 V	gG/gL 690 V	A	35
Type "1" coordination			
400 V	gG/gL 500 V	A	100
690 V	gG/gL 690 V	A	50

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	45
at 50 °C	$I_{th} = I_e$	A	43
at 55 °C	$I_{th} = I_e$	A	42
at 60 °C	$I_{th} = I_e$	A	40
enclosed	I_{th}	A	36
Conventional free air thermal current, 1 pole			
open	I_{th}	A	100
enclosed	I_{th}	A	90
AC-3			
Rated operational current			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I_e	A	25
240 V	I_e	A	25
380 V 400 V	I_e	A	25
415 V	I_e	A	25
440V	I_e	A	25
500 V	I_e	A	25
660 V 690 V	I_e	A	15
380 V 400 V	I_e	A	25
Motor rating	P	kWh	
220 V 230 V	P	kW	7.5

240V	P	kW	8.5
380 V 400 V	P	kW	11
415 V	P	kW	14.5
440 V	P	kW	15.5
500 V	P	kW	17.5
660 V 690 V	P	kW	14
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I _e	A	13
240 V	I _e	A	13
380 V 400 V	I _e	A	13
415 V	I _e	A	13
440 V	I _e	A	13
500 V	I _e	A	13
660 V 690 V	I _e	A	10
Motor rating	P	kWh	
220 V 230 V	P	kW	3.5
240 V	P	kW	4
380 V 400 V	P	kW	6
415 V	P	kW	6.5
440 V	P	kW	7
500 V	P	kW	8
660 V 690 V	P	kW	8.5

DC

Rated operational current, open			
DC-1			
60 V	I _e	A	40
110 V	I _e	A	40
220 V	I _e	A	40
440 V	I _e	A	2.9
DC-3			
60 V	I _e	A	35
110 V	I _e	A	35
220 V	I _e	A	10
440 V	I _e	A	0.6
DC-5			
60 V	I _e	A	35
110 V	I _e	A	35
220 V	I _e	A	10
440 V	I _e	A	0.6

Current heat loss

3-pole at I _{th}		W	11.4
Current heat loss at I _e to AC-3/400 V		W	4.2
Impedance per pole		mΩ	2.7

Magnet systems

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
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 - 0.6
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	52
50 Hz	Sealing	VA	7.1
50 Hz	Sealing	W	2.1
60 Hz	Pick-up	VA	67
60 Hz	Sealing	VA	8.7
60 Hz	Sealing	W	2.6
50/60 Hz	Pick-up	VA	62 58
50/60 Hz	Sealing	VA	9.1 6.5
50/60 Hz	Sealing	W	2.5 2
DC operated	Pick-up	W	12
DC operated	Sealing	W	0.5
Duty factor		% DF	100
Changeover time at 100 % U _C (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	16 - 22
Opening delay		ms	8 - 14
DC operated		ms	
Closing delay		ms	47
Opening delay		ms	30
Arcing time		ms	10
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	25
Heat dissipation per pole, current-dependent	P _{vid}	W	1.4
Equipment heat dissipation, current-dependent	P _{vid}	W	4.2
Static heat dissipation, non-current-dependent	P _{vs}	W	0.9
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 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 Us at AC 50HZ	V	0 - 0
Rated control supply voltage Us at AC 60HZ	V	0 - 0
Rated control supply voltage Us at DC	V	24 - 27
Voltage type for actuating		DC
Rated operation current Ie at AC-1, 400 V	A	45
Rated operation current Ie at AC-3, 400 V	A	25
Rated operation power at AC-3, 400 V	kW	11
Rated operation current Ie at AC-4, 400 V	A	13
Rated operation power Ie at AC-4, 400 V	kW	6
Modular version		No
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as normally closed contact		1
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

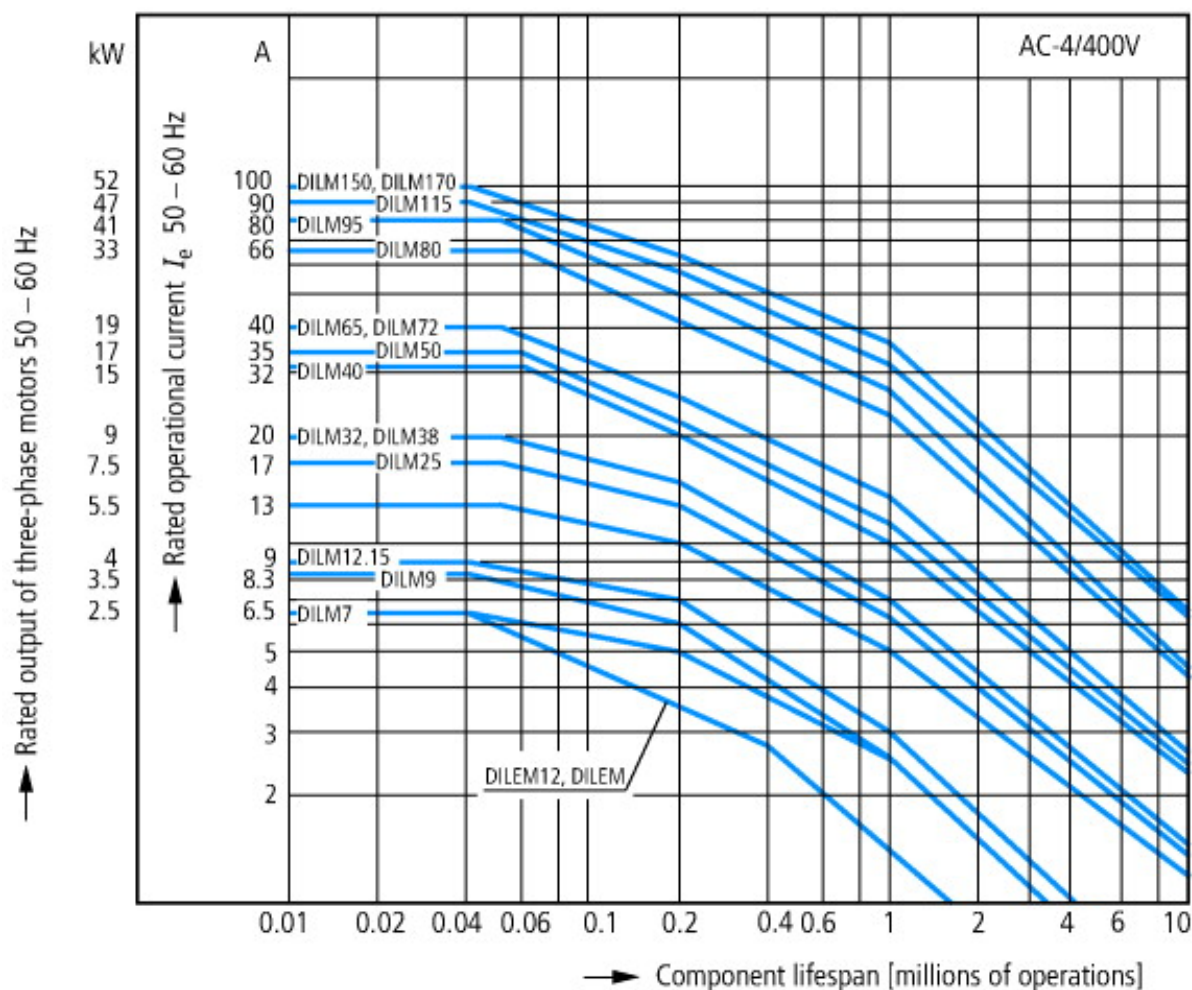
Product Standards		IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.		E29096
UL Category Control No.		NLDX
CSA File No.		012528
CSA Class No.		2411-03, 3211-04
North America Certification		UL listed, CSA certified
Specially designed for North America		No



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



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

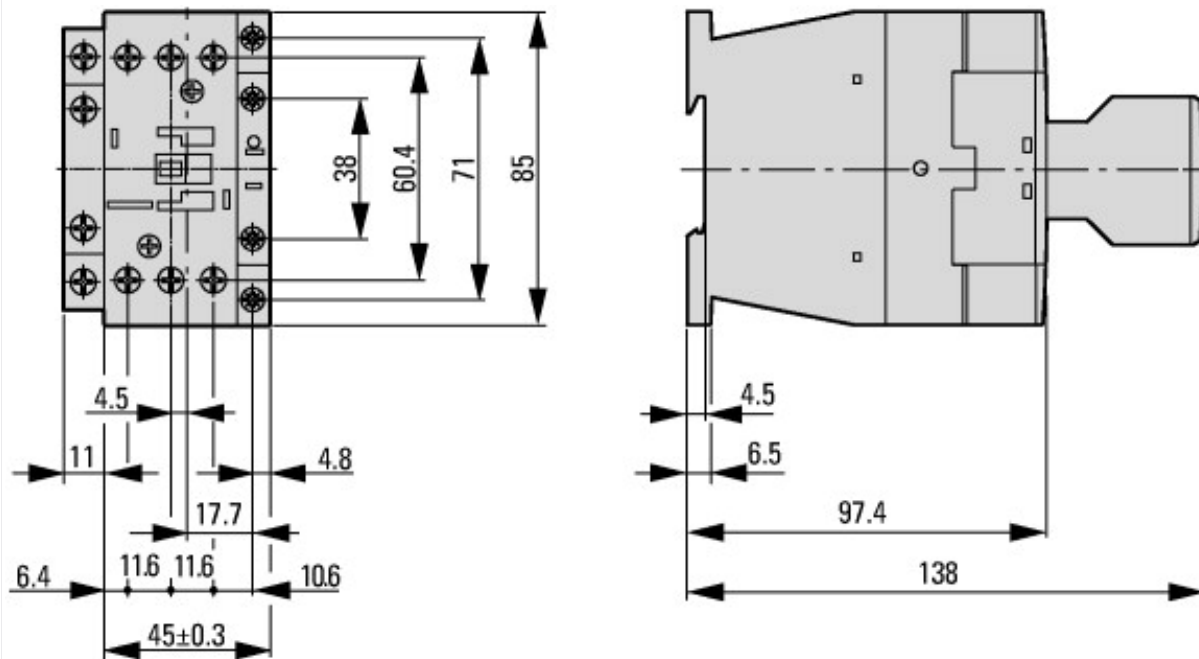
Utilization category

100 % AC-1

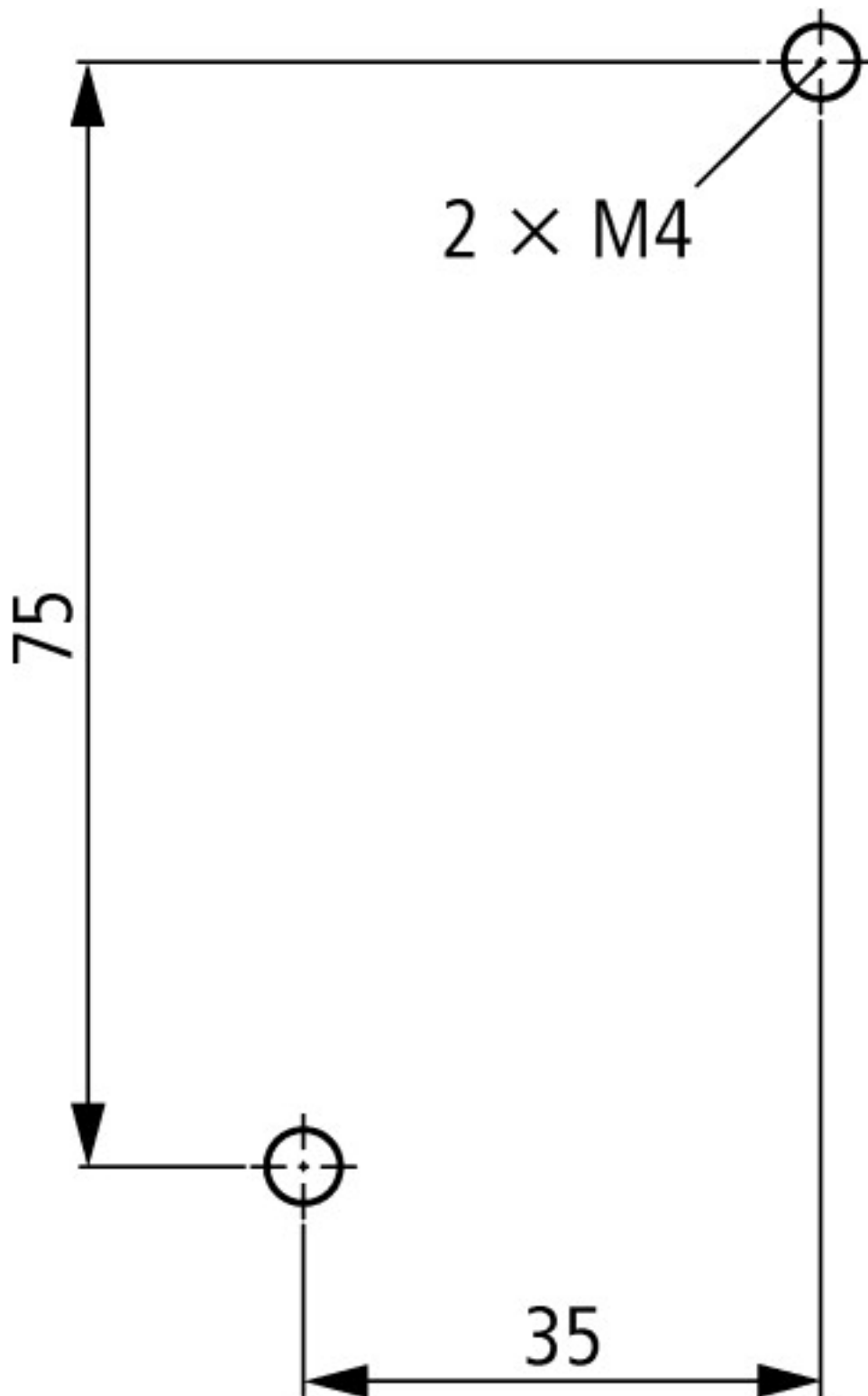
Typical examples of application

Electric heat

Dimensions



Contactor with auxiliary contact module



Lateral clearance to earthed parts: 6 mm

Additional product information (links)

IL03407014Z (AWA2100-2127) Contactor

IL03407014Z (AWA2100-2127) Contactor	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407014Z2012_03.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