DATASHEET - DILM12-10(230V50HZ,240V60HZ)



Contactor, 3 pole, 380 V 400 V 5.5 kW, 1 N/O, 230 V 50 Hz, 240 V 60 Hz, AC operation, Screw terminals



Part no. DILM12-10(230V50HZ,240V60HZ)

Catalog No. 276830 Alternate Catalog XTCE012B10F

No.

EL-Nummer 4130321

(Norway)

(Norway)			
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			
Notes			At maximum permissible ambient temperature (open.)
380 V 400 V	I _e	Α	12
AC-1			
Conventional free air thermal current, 3 pole, 50 - 60 Hz			
Open			
at 40 °C	$I_{th} = I_e$	Α	22
enclosed	I _{th}	Α	18
Conventional free air thermal current, 1 pole			
open	I _{th}	Α	50
enclosed	I _{th}	Α	45
Max. rating for three-phase motors, 50 - 60 Hz			
AC-3			
220 V 230 V	Р	kW	3.5
380 V 400 V	Р	kW	5.5
660 V 690 V	Р	kW	6.5
AC-4			
220 V 230 V	P	kW	2
380 V 400 V	Р	kW	3
660 V 690 V	Р	kW	4.4
Contacts			
N/O = Normally open			1 N/O
Contact sequence			$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Instructions			Contacts to EN 50 012.
Can be combined with auxiliary contact			DILM32-XHI DILA-XHI(V)
Actuating voltage			230 V 50 Hz, 240 V 60 Hz
Voltage AC/DC			AC operation
Connection to SmartWire-DT			no

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical			
AC operated	Operations	x 10 ⁶	10
Operating frequency, mechanical			
AC operated	Operations/h		9000
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			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	5.7
Auxiliary contacts			
N/O contact		g	3.4
N/C contact		g	3.4
Degree of Protection			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude		m	Max. 2000
Weight			
AC operated		kg	0.24
Screw connector terminals			
Terminal capacity main cable			
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	single 18 - 10, double 18 - 14
Stripping length		mm	10
Terminal screw			M3.5
Tightening torque Tool		Nm	1.2
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
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	11.	V AC	8000
	U _{imp}	VAC	III/3
Overvoltage category/pollution degree Rated insulation voltage	Ui	V AC	690
Rated operational voltage	U _e	V AC	690
Safe isolation to EN 61140	O _e	V AU	
between coil and contacts		V AC	400
between the contacts		V AC	400
Making capacity (p.f. to IEC/EN 60947)			
	Up to 690 V	Α	144
Breaking capacity			
220 V 230 V		Α	120
380 V 400 V		Α	120
500 V		A	100
660 V 690 V		Α	70
Short-circuit rating			
Short-circuit protection maximum fuse Type "2" coordination			
400 V	gG/gL 500 V	A	20
690 V		A	20
Type "1" coordination	g 0, g 2 000 v		
400 V	gG/gL 500 V	A	35
690 V		Α	25
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	22
at 50 °C	I _{th} =I _e	Α	21
at 55 °C	I _{th} =I _e	Α	21
at 60 °C	I _{th} =I _e	Α	20
enclosed	I _{th}	Α	18
Conventional free air thermal current, 1 pole			
open	I _{th}	A	50
enclosed	I _{th}	Α	45
AC-3 Rated operational current			
Open, 3-pole: 50 – 60 Hz			
Notes			At maximum permissible ambient temperature (open.)
220 V 230 V	I _e	Α	12
240 V	I _e	Α	12
380 V 400 V	I _e	Α	12
415 V	I _e	Α	12
440V	le	Α	12
500 V	I _e	Α	10
660 V 690 V	I _e	Α	7
380 V 400 V	I _e	Α	12

Motor rating	P	kWh	
220 V 230 V	P	kW	3.5
240V	P	kW	4
380 V 400 V	P	kW	5.5
415 V	P	kW	7
440 V	P	kW	7.5
500 V	P	kW	7
660 V 690 V	P	kW	6.5
AC-4			
Open, 3-pole: 50 – 60 Hz			
220 V 230 V	I _e	Α	7
240 V	I _e	Α	7
380 V 400 V		A	7
	l _e		
415 V	I _e	Α	7
440 V	l _e	Α	7
500 V	I _e	Α	6
660 V 690 V	I _e	Α	5
Motor rating	P	kWh	
220 V 230 V	P	kW	2
240 V	Р	kW	2.2
380 V 400 V	P	kW	3
415 V	P	kW	3.4
440 V	P	kW	3.6
500 V	P	kW	3.5
660 V 690 V	P	kW	4.4
DC	-		
Rated operational current, open			
DC-1			
60 V	I _e	Α	20
110 V	I _e	Α	20
220 V		A	15
Current heat loss	l _e	^	10
3 pole, at I _{th} (60°)		W	2.5
Current heat loss at I _e to AC-3/400 V		W	0.9
Impedance per pole		mΩ	2.5
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
Power consumption of the coil in a cold state and 1.0 x $\ensuremath{\text{U}_{\text{S}}}$			
50 Hz	Pick-up	VA	24
50 Hz	Sealing	VA	3.4
50 Hz	Sealing	W	1.4
60 Hz	Pick-up	VA	30
60 Hz	Sealing	VA	4.4
60 Hz	Sealing	W	1.4
Duty factor		% DF	100
Changeover time at 100 % U _S (recommended value)			
Main contacts			
AC operated			
Closing delay		ms	15 - 21
Opening delay		ms	9 - 18
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	HP	3
230 V 240 V	НР	3
460 V	НР	10
480 V 575 V	НР	10
600 V		
Single-phase		
115 V 120 V	HP	1
230 V 240 V	HP	2
General use	Α	20
Auxiliary contacts		
Pilot Duty		
AC operated		A600
DC operated		P300
General Use		
AC	٧	600
AC	Α	10
DC	٧	250
DC	Α	1
Short Circuit Current Rating	SCCR	
Basic Rating		
SCCR	kA	5
max. Fuse	Α	45
max. CB	Α	60
480 V High Fault		
SCCR (fuse)	kA	30/100
max. Fuse	Α	25 Class RK5/45 Class J
600 V High Fault		
SCCR (fuse)	kA	30/100
max. Fuse	Α	25 Class RK5/45 Class J
Special Purpose Ratings		
Electrical Discharge Lamps (Ballast)		
480V 60Hz 3phase, 277V 60Hz 1phase	Α	20
600V 60Hz 3phase, 347V 60Hz 1phase	Α	20
Incandescent Lamps (Tungsten)		
480V 60Hz 3phase, 277V 60Hz 1phase	Α	14
600V 60Hz 3phase, 347V 60Hz 1phase	Α	14
Resistance Air Heating		
480V 60Hz 3phase, 277V 60Hz 1phase	Α	20
600V 60Hz 3phase, 347V 60Hz 1phase	Α	20
Refrigeration Control (CSA only)		
LRA 480V 60Hz 3phase	Α	60
FLA 480V 60Hz 3phase	Α	10
LRA 600V 60Hz 3phase	Α	60
FLA 600V 60Hz 3phase	Α	10
Definite Purpose Ratings (100,000 cycles acc. to UL 1995)		
Definite Purpose Ratings (100,000 cycles acc. to UL 1995) LRA 480V 60Hz 3phase	Α	72
	A A	72 12

200V 60Hz 3phase	HP	2
200V 60Hz 3phase	Α	7.8
240V 60Hz 3phase	НР	2
240V 60Hz 3phase	Α	6.8
480V 60Hz 3phase	НР	7.5
480V 60Hz 3phase	А	11
600V 60Hz 3phase	НР	7.5
600V 60Hz 3phase	Α	9

Design verification as per IEC/EN 61439

=			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	12
Heat dissipation per pole, current-dependent	P _{vid}	W	0.3
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	1.4
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.

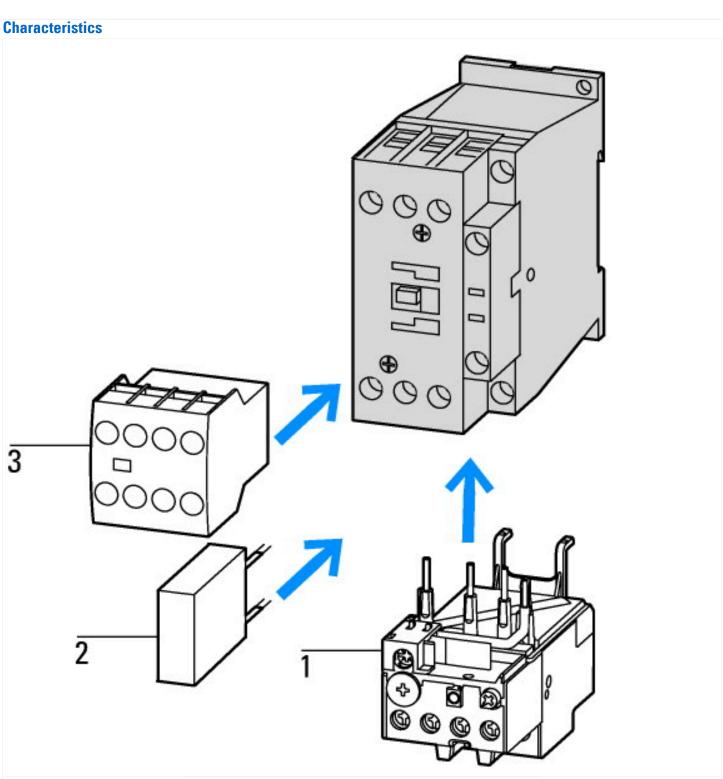
Technical data ETIM 7.0

10001 24.00 21 710				
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@ss10.0.1-27-37-10-03 [AAB718015])				
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		А	22	
Rated operation current le at AC-3, 400 V		Α	12	

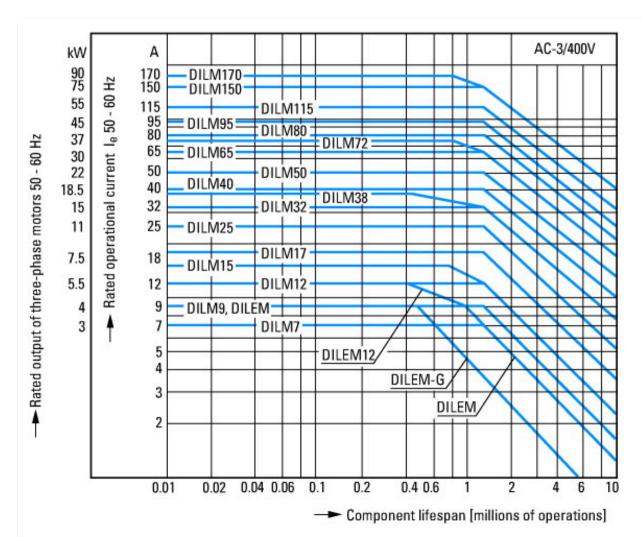
Rated operation power at AC-3, 400 V	kW	5.5
Rated operation current le at AC-4, 400 V	Α	7
Rated operation power at AC-4, 400 V	kW	3
Rated operation power NEMA	kW	7.4
Modular version		No
Number of auxiliary contacts as normally open contact		1
Number of auxiliary contacts as normally closed contact		0
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		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 Lifts

Compressors

Mixers Pumps

Escalators

Agitators

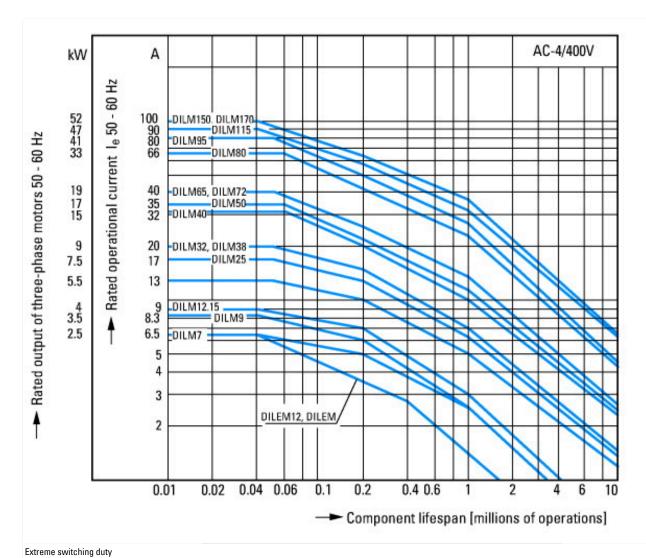
Fans

Conveyor belts Centrifuges

Hinged flaps Bucket-elevators

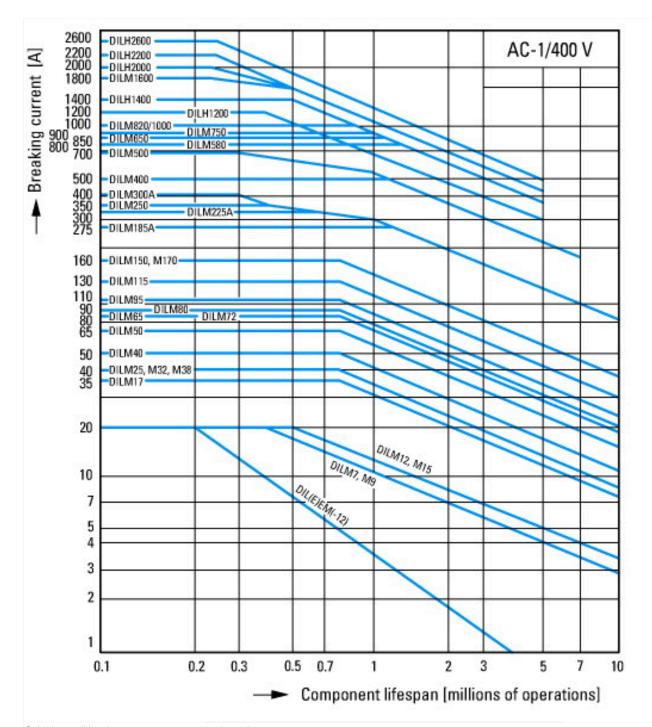
Air conditioning system

General drives in manufacturing and processing machines



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

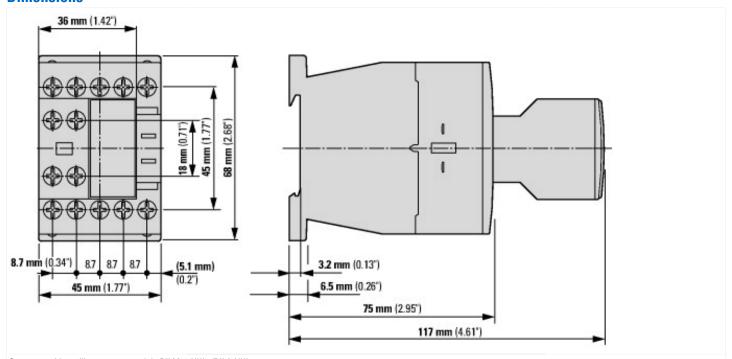
Switch on: 1 x rated operational current Switch off: 1 x rated operational current

Utilization category 100 % AC-1

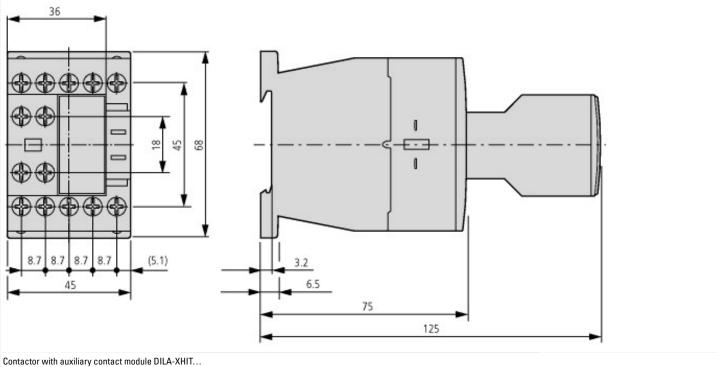
Typical examples of application

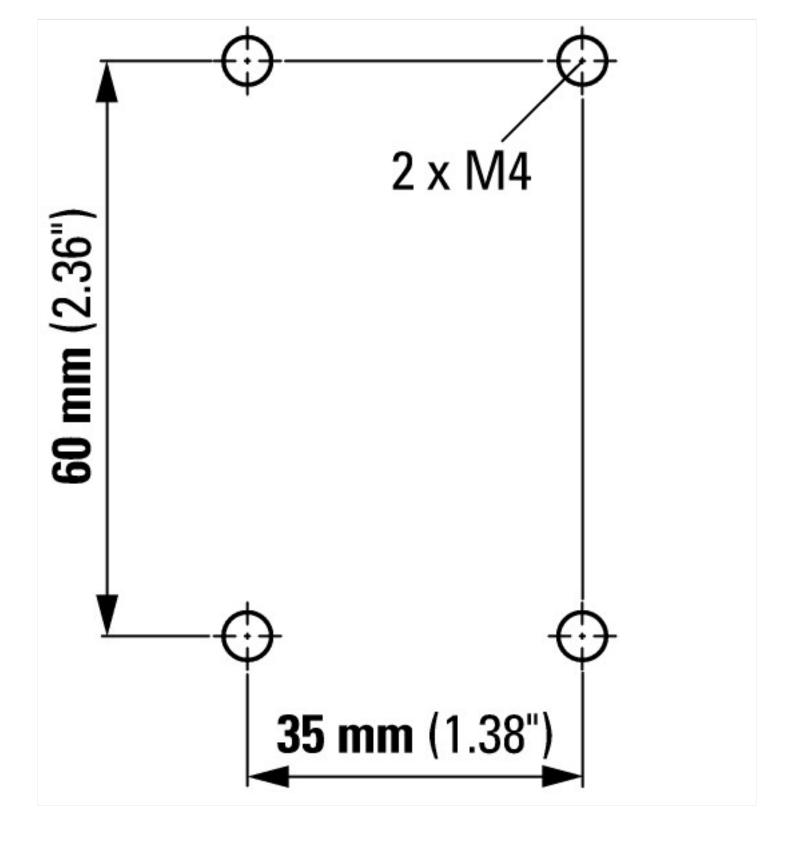
Electric heat

Dimensions



Contactor with auxiliary contact module DILM32-XHI.../DILA-XHI...





13 / 13