

DATASHEET - DILA-31(24V50HZ)

Contactor relay, 24 V 50 Hz, N/O = Normally open: 3 N/O, N/C = Normally closed: 1 NC, Screw terminals, AC operation

Powering Business Worldwide™

Part no. DILA-31(24V50HZ)
Catalog No. 276351
Alternate Catalog No. XTRE10B31U
EL-Nummer (Norway) 4130204

Similar to illustration

Delivery program

Product range				DILA relays
Application				Contactor relays
Description				Basic devices with positive operation contacts
Connection technique				Screw terminals
Rated operational current				
AC-15				
220 V 230 V 240 V	I_e	A		4
380 V 400 V 415 V	I_e	A		4
Contacts				
N/O = Normally open				3 N/O
N/C = Normally closed				1 NC
Contact sequence				
Code number and version of combination				
Distinctive number				31E
Can be combined with auxiliary contact module				DILA-XHI(V)...
Actuating voltage				24 V 50 Hz
Voltage AC/DC				AC operation
Connection to SmartWire-DT				no
Instructions				Contact numbers to EN 50011 Coil terminal markings to EN 50005

Technical data

General				
Standards				IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA
Lifespan, mechanical				
AC operated	Operations	$\times 10^6$		20
Maximum operating frequency	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
Ambient temperature, storage		°C		- 40 - 80
Mounting position				
Mounting position				
Mechanical shock resistance (IEC/EN 60068-2-27)				

Half-sinusoidal shock, 10 ms			
Basic unit with auxiliary contact module		g	
N/O contact		g	7
N/C contact		g	5
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
Terminal capacities		mm ²	
Screw terminals			
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
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5 1 x 6
Max. tightening torque		Nm	1.2

Contacts

Positive operating contacts to ZH 1/457, including auxiliary contact module				Yes
Rated impulse withstand voltage	U_{imp}	V AC		6000
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 auxiliary contacts		V AC		400
between the auxiliary contacts		V AC		400
Rated operational current		A		
Conventional free air thermal current, 1 pole				
Open				
at 60 °C	$I_{th} = I_e$	A		16
AC-15				
220 V 230 V 240 V	I_e	A		4
380 V 400 V 415 V	I_e	A		4
500 V	I_e	A		1.5
DC current				
Notes				Switch-on and switch-off conditions based on DC-13, time constant as specified.
DC L/R \leq 15 ms				
Contacts in series:		A		
1	24 V	A		10
1	60 V	A		6
2	60 V	A		10
1	110 V	A		3
3	110 V	A		6
1	220 V	A		1
3	220 V	A		5
DC L/R \leq 50 ms				
Contacts in series:		A		
3	24 V	A		4
3	60 V	A		4
3	110 V	A		2
3	220 V	A		1

Control circuit reliability	Failure rate	λ	10^{-8}, <one failure at 100 million operations (at $U_e = 24\text{ V DC}, U_{\min} = 17\text{ V}, I_{\min} = 5.4\text{ mA}</math></math>$	
Short-circuit rating without welding				
Maximum overcurrent protective device				
220 V 230 V 240 V		PKZM0	4	
380 V 400 V 415 V		PKZM0	4	
Short-circuit protection maximum fuse				
500 V		A gG/gL	10	
Current heat loss at I_{th}				
AC operated		W	0.53	

Magnet systems

Voltage tolerance				
AC operated				
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	$x U_c$	0.8 - 1.1	
Power consumption				
AC operation				
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	VA	24	
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Sealing	VA	3.4	
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Sealing	W	1.4	
duty factor		% DF	100	
Changeover time at 100 % U_S (recommended value)				
AC operated closing delay		ms	15 - 21	
AC operated N/O contact opening delay		ms	9 - 18	

Rating data for approved types

Auxiliary contacts				
Pilot Duty				
AC operated				A600
DC operated				P300
General Use				
AC		V	600	
AC		A	15	
DC		V	250	
DC		A	1	

Design verification as per IEC/EN 61439

Technical data for design verification				
Rated operational current for specified heat dissipation	I_n	A	15.5	
Heat dissipation per pole, current-dependent	P_{vid}	W	0.5	
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.

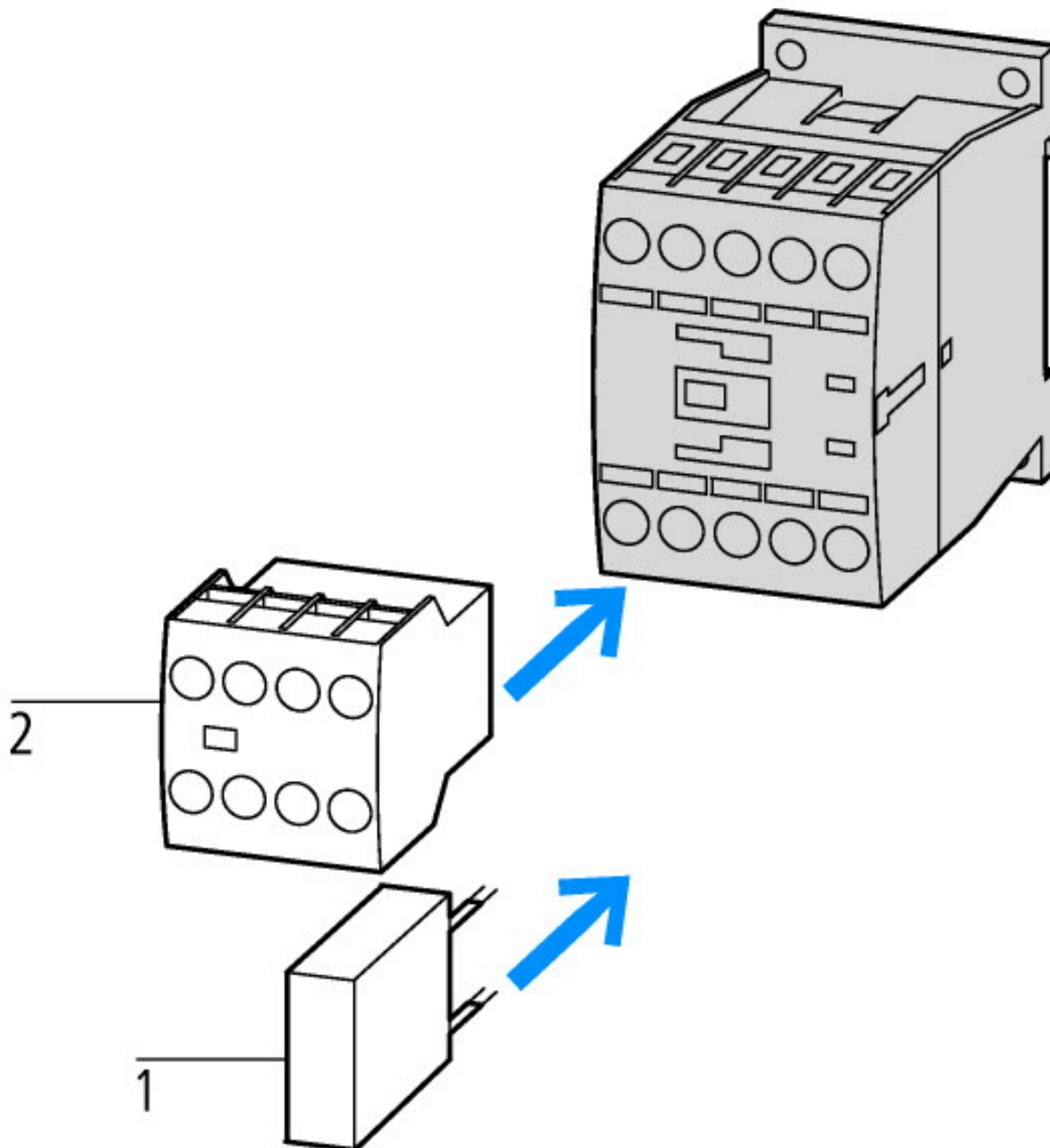
Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Contactor relay (EC000196)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])		
Rated control supply voltage Us at AC 50HZ	V	24 - 24
Rated control supply voltage Us at AC 60HZ	V	0 - 0
Rated control supply voltage Us at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current Ie, 400 V	A	4
Connection type auxiliary circuit		Screw connection
Mounting method		DIN-rail/screw
Interface		No
Number of auxiliary contacts as normally closed contact		2
Number of auxiliary contacts as normally open contact		2
Number of auxiliary contacts as normally closed contact, delayed switching		0
Number of auxiliary contacts as normally open contact, leading		0
With LED indication		No
Number of auxiliary contacts as change-over contact		0
Manual operation possible		No

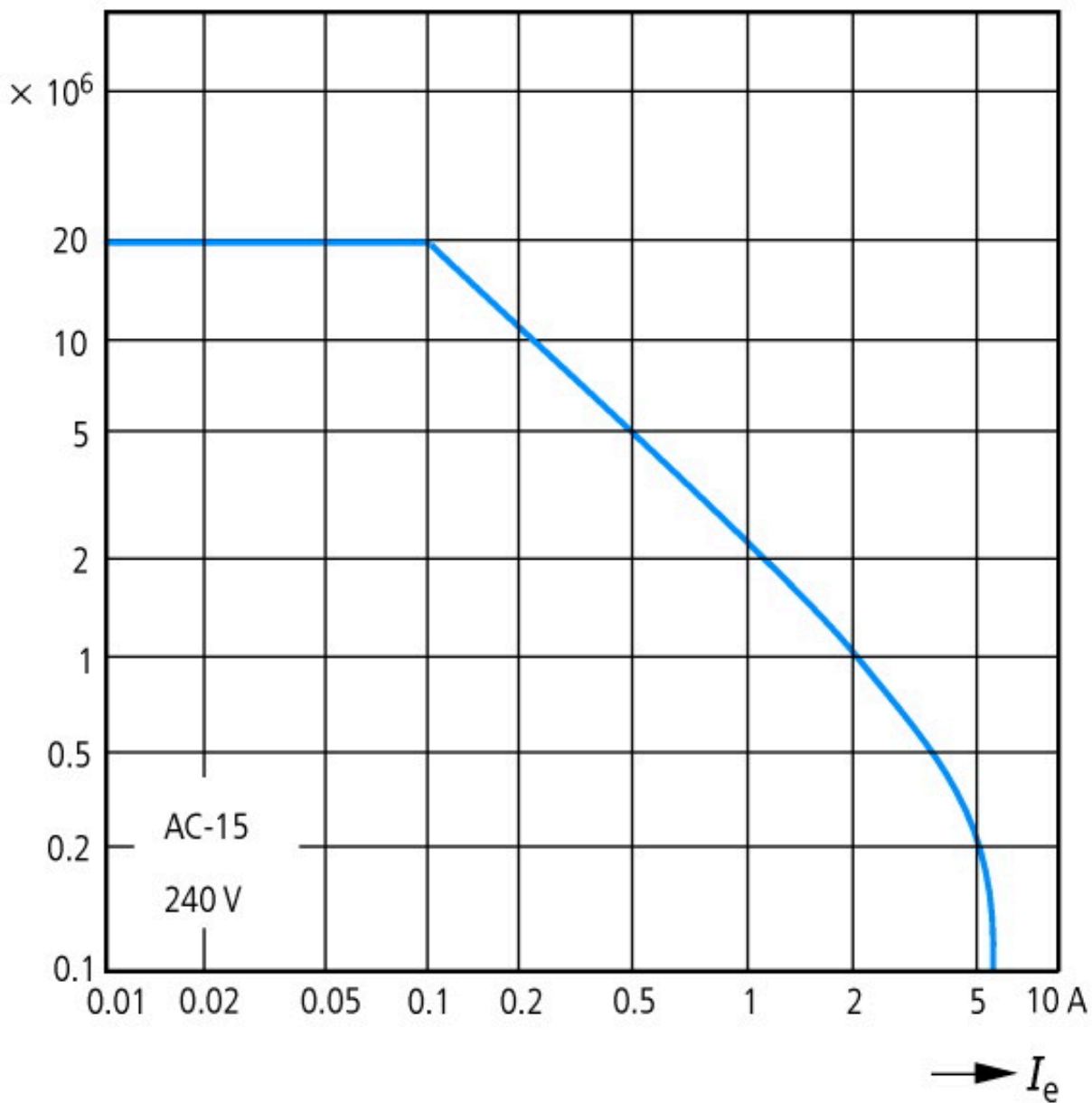
Approvals

Product Standards		IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.		E29184
UL Category Control No.		NKCR
CSA File No.		012528
CSA Class No.		3211-03
North America Certification		UL listed, CSA certified
Specially designed for North America		No

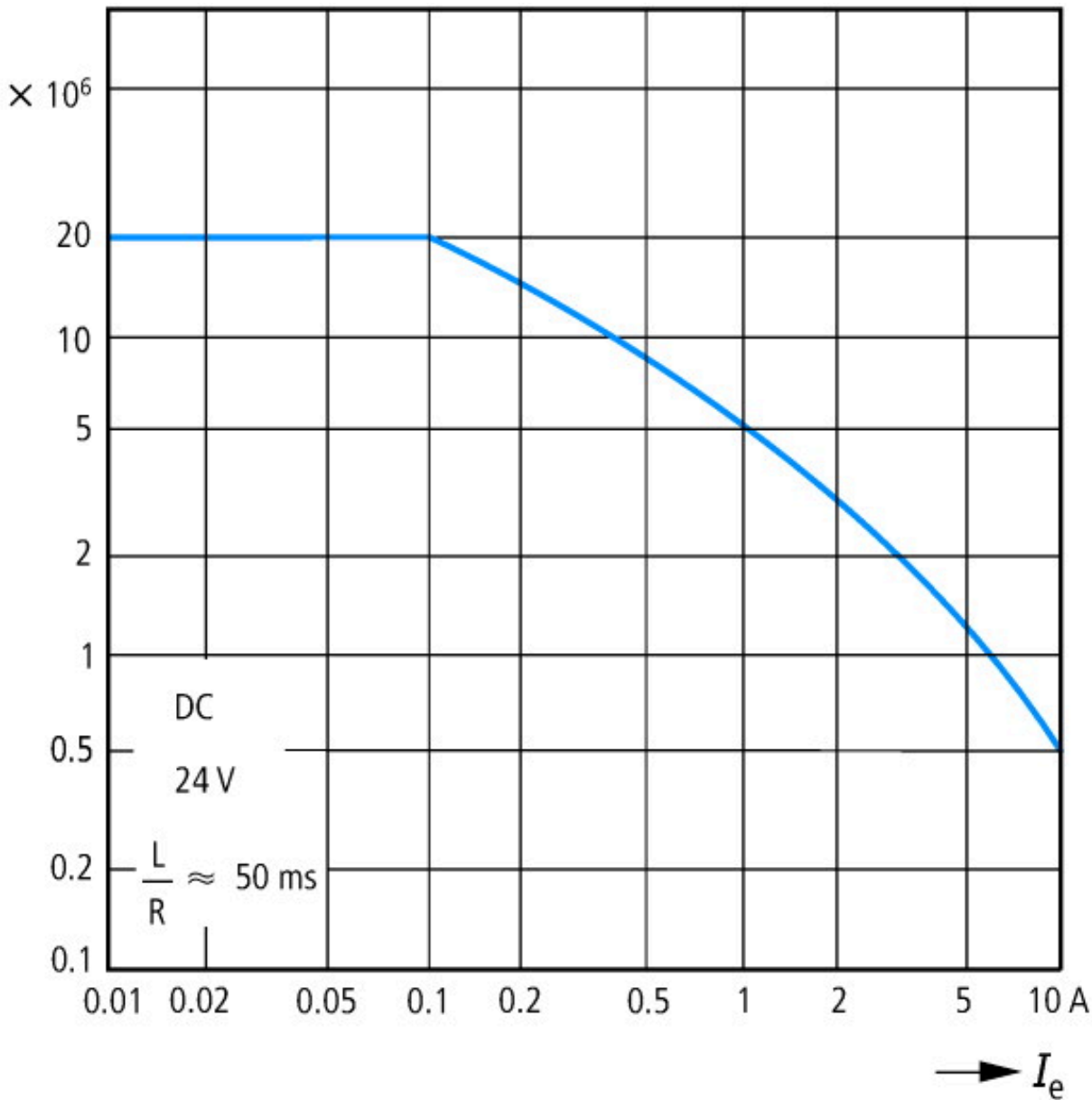
Characteristics



1: Suppressor
2: Auxiliary contact module

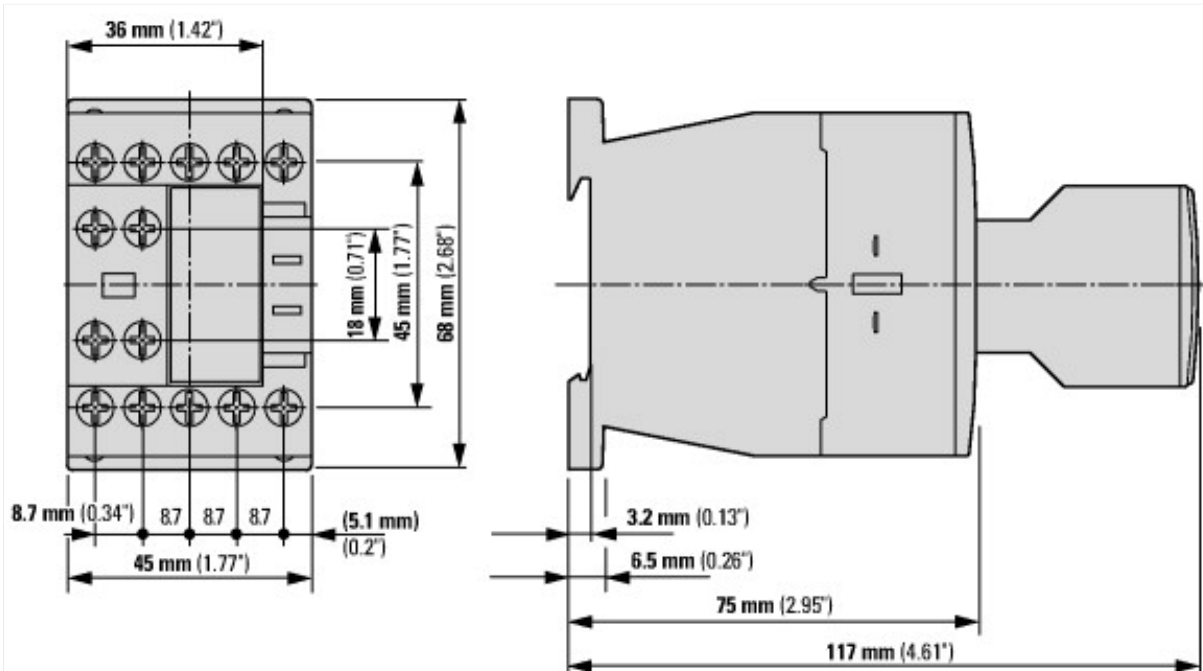


Component lifespan (operations)
 I_e = rated operational current

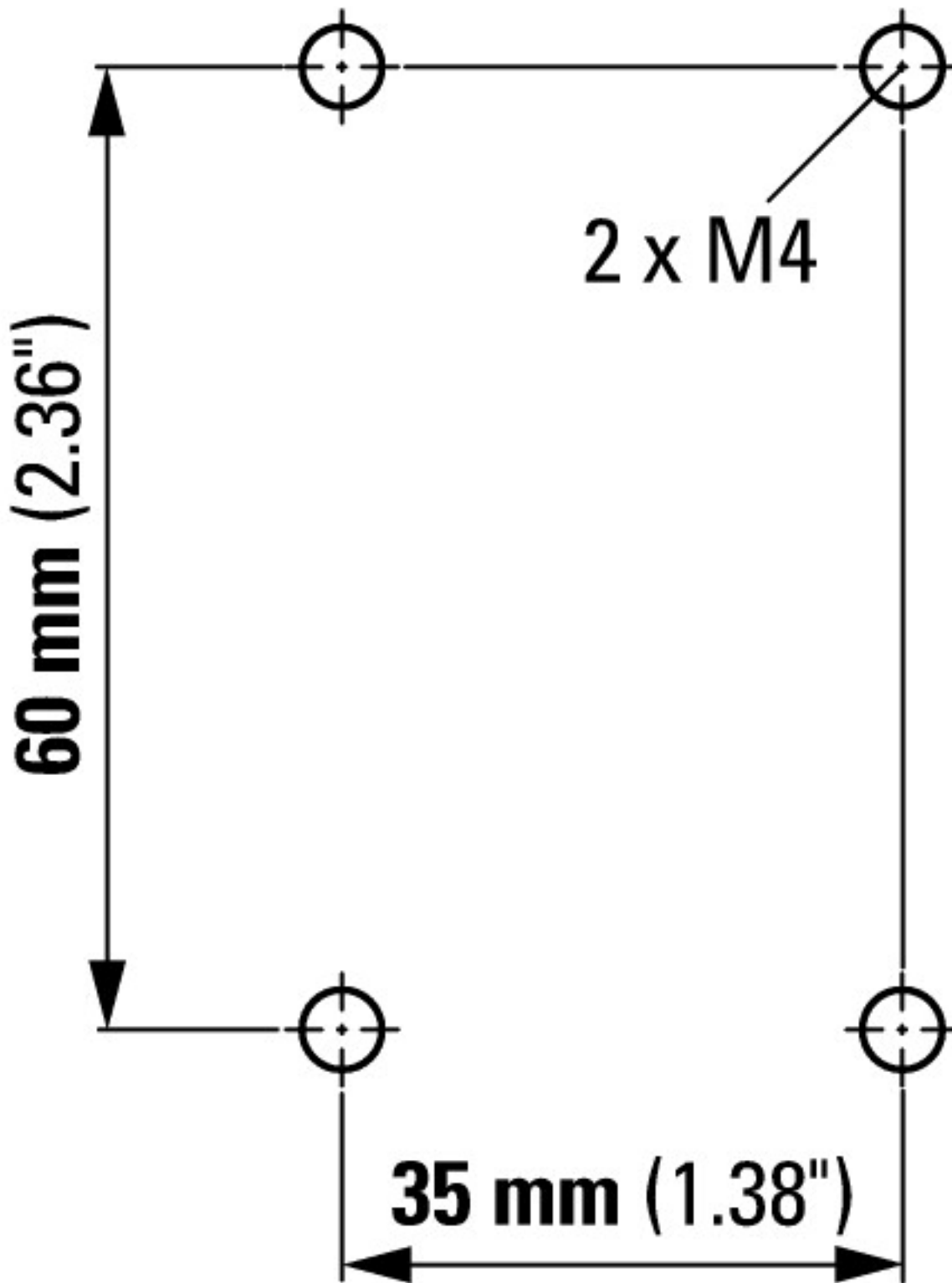


Component lifespan (operations)
 I_e = rated operational current
 Three contacts in series

Dimensions



Contactors with auxiliary contact module





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