DATASHEET - DILAC-40(220VDC)



Contactor relay, 220 V DC, 4 N/O, Spring-loaded terminals, DC operation



DILAC-40(220VDC) Part no. Catalog No. 276460 XTREC10B40BD Alternate Catalog No.

Powering Business Worldwide

Similar to illustration

Delivery program			
Product range			DILA relays
Application			Contactor relays
Description			Basic devices with positive operation contacts
Connection technique			Spring-loaded terminals
Rated operational current			
AC-15			
220 V 230 V 240 V	I _e	Α	4
380 V 400 V 415 V	le	Α	4
Contacts			
N/O = Normally open			4 N/O
Contact sequence			A1 13 23 33 43 A2 14 24 34 44
Instructions			Contact numbers to EN 50011 Coil terminal markings to EN 50005 built-in suppressor circuit' Integrated varistor suppressor circuit.
Code number and version of combination			
Distinctive number			40D
Can be combined with auxiliary contact module			DILA-XHIC(V)
Actuating voltage			220 V DC
Voltage AC/DC			DC operation
Suppressor circuit			built-in
Connection to SmartWire-DT			no
Instructions			Contact numbers to EN 50011 Coil terminal markings to EN 50005 built-in suppressor circuit' Integrated varistor suppressor circuit.

Technical data

General			
Standards			IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA
Lifespan, mechanical			
DC operated	Operations	x 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			
DC operated		kg	0.294
Terminal capacities		mm^2	
Spring-loaded terminals			
Solid		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Flexible with or without ferrule DIN 46228		mm ²	1 x (0,75 - 1.5) 2 x (0,75 - 1.5)
Solid or stranded		AWG	18 - 14
Stripping length		mm	10
Standard screwdriver		mm	0.6 x 3.5
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			111/3
Rated insulation voltage	Ui	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		Α	
Conventional free air thermal current, 1 pole			
Open			
at 60 °C	$I_{th} = I_e$	Α	16
AC-15			
220 V 230 V 240 V	l _e	Α	4
380 V 400 V 415 V	Ie	Α	4
500 V	Ie	Α	1.5
DC current			
Notes			Switch-on and switch-off conditions based on DC-13, time constant as specified.
DC L/R ≦ 15 ms			
Contacts in series:		Α	
1	24 V	Α	10
1	60 V	Α	6
2	60 V	Α	10
1	110 V	Α	3
3	110 V	Α	6
1	220 V	Α	1
3	220 V	Α	5
DC L/R ≦ 50 ms			
Contacts in series:		Α	
3	24 V	Α	4

Solition				
Source Control circuit reliability	3	60 V	Α	4
Control circuit reliability Short-circuit rating without welding Maximum overcurrent protective device 220 V 230 V 240 V	3	110 V	Α	2
Short-circuit reting without welding	3	220 V	Α	1
Maximum ovarcurrent protective device PKZM0 4 220 V 230 V 240 V PKZM0 4 380 V 300 V 415 V PKZM0 4 Short-circuit protection maximum fuse V 10 500 V A gG/gL 10 Current heat loss at I _{th} W 0.35 DC operated W 0.35 Magnet systems Voltage tolerance Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifier Prick-up voltage 0.8 - 1.1 At 24 V. without auxiliary contact component (40 °C) Pick-up X U _c V _c 0.7 - 1.3 0.7 - 1.3 Power consumption V 3 3 DC operated Y DF 100 duty factor Y DF 100 Changeover time at 100 % U _S (recommended value) ms 3 DC operated Closing delay ms 3 Switching times, DC operated, max. closing delay, max. ms 3 Switching times, DC actuated make contact Opening delay, max. ms 3 Auxiliary contacts ms 1 Piact Duty A G600 A G	Control circuit reliability	Failure rate	λ	$<\!10^{-8},<$ one failure at 100 million operations (at Ue = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)
220 V 230 V 240 V 380 V 400 V 415 V PKZM0 4 Short-circuit protection maximum fuse 500 V PKZM0 5 Souver the set loss at I _m V 0.85 Magnet systems Voltage tolerance DC operated Spring and the set of the set	Short-circuit rating without welding			
Short-circuit protection maximum fuse 500 V Current heat loss at I _{III} DC operated Magnet systems Vulage forerance DC operated Notes Pick-up voltage at 24 V. without auxiliary contact component (40 °C) Pick-up voltage DC operated Pull-in = W seeling Changeover time at 100 % U _S (recommended value) DC operated closing delay Switching times, DC operated, max. closing delay, max. Switching times, DC operated maxe contact Opening delay, max. Axiliary contacts Baing data for approved types Axiliary contacts A g6/gL V 0.85 Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoo	Maximum overcurrent protective device			
Short-circuit protection maximum fuse 500 V Current heat loss at I _{dn} DC operated W 0.85 Magnet systems Voltage tolerance DC operated Notes Character Pick-up voltage at 24 V: without auxiliary contact component (40 °C) Pick-up DC operated Pull-in = sealing duty factor Changeover time at 100 % Us frecommended value) DC operated closing delay Switching times, DC operated, max. closing delay DC operated N/O contact opening delay Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated DC operated A600 P300	220 V 230 V 240 V		PKZM0	4
Current heat loss at I _{th} DC operated W 0.85 Magnet systems Voltage tolerance DC operated Notes Fick-up voltage at 24 V: without auxiliary contact component (40 °C) DC operated DC operated DC operated Pul-in = w Jack Defence DC operated W 3 duty factor Changeover time at 100 % U _S (recommended value) DC operated N/O contact opening delay Switching times, DC operated, max. closing delay DC operated N/O contact opening delay Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Dury AC operated DC operated A600 P300	380 V 400 V 415 V		PKZM0	4
Current heat loss at I _{th} DC operated Magnet systems Voltage tolerance DC operated Notes Pick-up voltage	Short-circuit protection maximum fuse			
DC operated Magnet systems Voltage tolerance DC operated Notes Pick-up voltage at 24 V: without auxiliary contact component (40 °C) Pick-up DC operated DC operated Pull-in = Sealing duty factor Changeover time at 100 % Us (recommended value) DC operated closing delay Switching times, DC operated, max. closing delay, max. Auxiliary contacts Pilot Duty AC operated	500 V		A gG/gL	10
Magnet systems Voltage tolerance Body operated DC operated Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifier pick-up voltage at 24 V: without auxiliary contact component (40 °C) 0.8 - 1.1 DC operation Pick-up voltage voltage at 24 V: without auxiliary contact component (40 °C) V 0.7 - 1.3 Power consumption Pull-in = Variation with pick-up voltage along the pick-up voltage at 24 V: without auxiliary contact of the pick-up voltage at 24 V: voltage	Current heat loss at I _{th}			
Voltage tolerance DC operated Notes Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectifiers or smoothed DC, and the DC operated (40 °C) PSDO DC operated DC, three-phase bridge rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoothed DC, three-phase bridge rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoothed DC, three-phase bridge rectifiers or smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoothed DC, and Smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoothed DC, and Smoothed DC, and Smoothed DC, three-phase bridge rectifiers or smoothed DC, and Smoot	DC operated		W	0.85
DC operated Notes Pick-up voltage at 24 V: without auxiliary contact component (40 °C) Pick-up x U _c DC operation DC operated Pull-in = wealing W 3 duty factor Changeover time at 100 % U _S (recommended value) DC operated closing delay Switching times, DC operated, max. closing delay Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated A600 P300	Magnet systems			
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at 24 V: without auxiliary contact component (40 °C) Pick-up x U _c 0.7 - 1.3 Power consumption DC operation DC operated Pull-in = wsealing duty factor Changeover time at 100 % U _S (recommended value) DC operated closing delay Switching times, DC operated, max. closing delay Switching times, DC operated make contact Opening delay, max. Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated A600 P300	Notes			$Smoothed\ DC, three-phase\ bridge\ rectifiers\ or\ smoothed\ double-wave\ rectification$
Power consumption DC operation DC operated Pull-in = W sealing duty factor Changeover time at 100 % U _S (recommended value) DC operated closing delay Switching times, DC operated, max. closing delay BC operated N/O contact opening delay Switching times, DC actuated make contact Opening delay, max. Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated A600 P300	Pick-up voltage			0.8 - 1.1
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duty factor % DF 100 Changeover time at 100 % U _S (recommended value) DC operated closing delay ms 31 DC operated N/O contact opening delay ms 12 Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated DC operated DC operated A600 DC operated	DC operation			
Changeover time at 100 % U _S (recommended value) DC operated closing delay Switching times, DC operated, max. closing delay DC operated N/O contact opening delay Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated A600 P300	DC operated		W	3
DC operated closing delay Switching times, DC operated, max. closing delay DC operated N/O contact opening delay Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated A600 P300	duty factor		% DF	100
Switching times, DC operated, max. closing delay ms DC operated N/O contact opening delay ms Switching times, DC actuated make contact Opening delay, max. ms 12 Rating data for approved types Auxiliary contacts Pilot Duty AC operated A600 DC operated P300	Changeover time at 100 $\%$ U $\!_{S}$ (recommended value)			
DC operated N/O contact opening delay Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated A600 P300	DC operated closing delay		ms	
Switching times, DC actuated make contact Opening delay, max. Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated DC operated MS 12	Switching times, DC operated, max. closing delay		ms	31
Rating data for approved types Auxiliary contacts Pilot Duty AC operated DC operated P300	DC operated N/O contact opening delay		ms	
Auxiliary contacts Pilot Duty AC operated DC operated P300	Switching times, DC actuated make contact Opening delay, max.		ms	12
Pilot Duty AC operated A600 DC operated P300	Rating data for approved types			
AC operated A600 DC operated P300	Auxiliary contacts			
DC operated P300				
	AC operated			A600
General Use	DC operated			P300
	General Use			
AC V 600	AC		V	600
AC A 15	AC		Α	15
DC V 250	DC		V	250
DC A 1	DC		Α	1

Design verification as per IEC/EN 61439

Technical data for design verification Rated operational current for specified heat dissipation Heat dissipation per pole, current-dependent Pvid V 0.8 Equipment heat dissipation, current-dependent Pvid V 0 Static heat dissipation, non-current-dependent Pvid V 0 Static heat dissipation, non-current-dependent Pvis V 0 Operating ambient temperature min. Operating ambient temperature max. C C Operating ambient temperature max. ID.2.3 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 abnormal heat and fire due to internal electric effects				
Heat dissipation per pole, current-dependent Pvid W 0 Static heat dissipation, current-dependent Pvs W 3 Heat dissipation capacity Pdiss W 0 Operating ambient temperature min. Operating ambient temperature max. Operating ambient temperature max. Operating ambient temperature max. Operating ambient temperature max. 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 Meets the product standard's requirements. Meets the product standard's requirements.	Technical data for design verification			
Equipment heat dissipation, current-dependent Pvid W 0 Static heat dissipation, non-current-dependent Pvs W 3 Heat dissipation capacity Operating ambient temperature min. Operating ambient temperature max. Operating ambient temperature max. 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 Meets the product standard's requirements.	Rated operational current for specified heat dissipation	In	Α	15.5
Static heat dissipation, non-current-dependent P _{vs} W 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 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 Meets the product standard's requirements.	Heat dissipation per pole, current-dependent	P _{vid}	W	0.8
Heat dissipation capacity Pdiss W 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.	Equipment heat dissipation, current-dependent	P_{vid}	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 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 Meets the product standard's requirements. Meets the product standard's requirements. Meets the product standard's requirements.	Static heat dissipation, non-current-dependent	P_{vs}	W	3
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.	Heat dissipation capacity	P _{diss}	W	0
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.	Operating ambient temperature min.		°C	-25
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 10.2.3.3 Verification of resistance of insulating materials to abnormal heat Meets the product standard's requirements. Meets the product standard's requirements.	Operating ambient temperature max.		°C	60
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.	IEC/EN 61439 design verification			
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. Meets the product standard's requirements.	10.2 Strength of materials and parts			
10.2.3.2 Verification of resistance of insulating materials to normal heat Meets the product standard's requirements. Meets the product standard's requirements.	10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat 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.
				Meets the product standard's requirements.

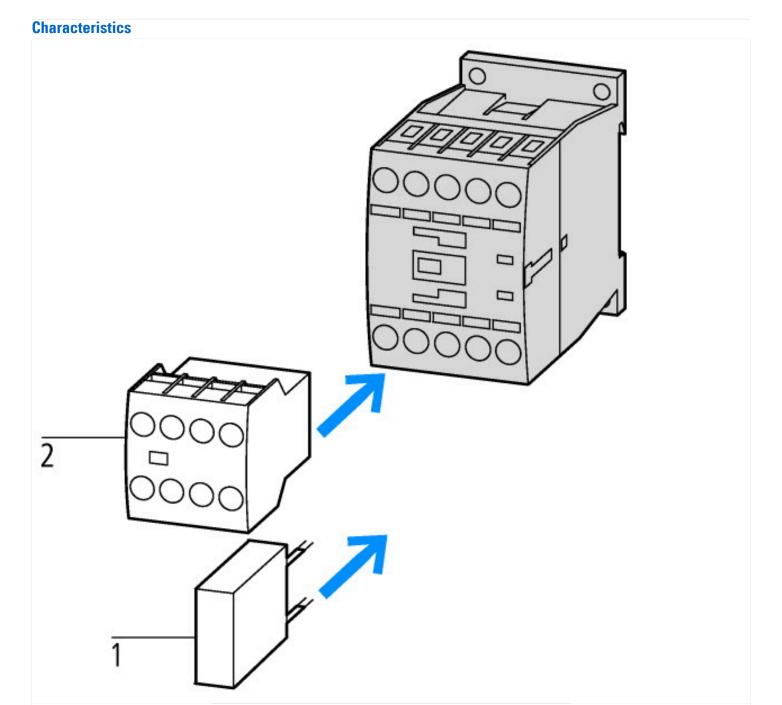
10.2.4 Resistance to ultra-violet (UV) radiation	Meets the product standard's requirements.
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product 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 switch gear must lobserved.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must lobserved.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

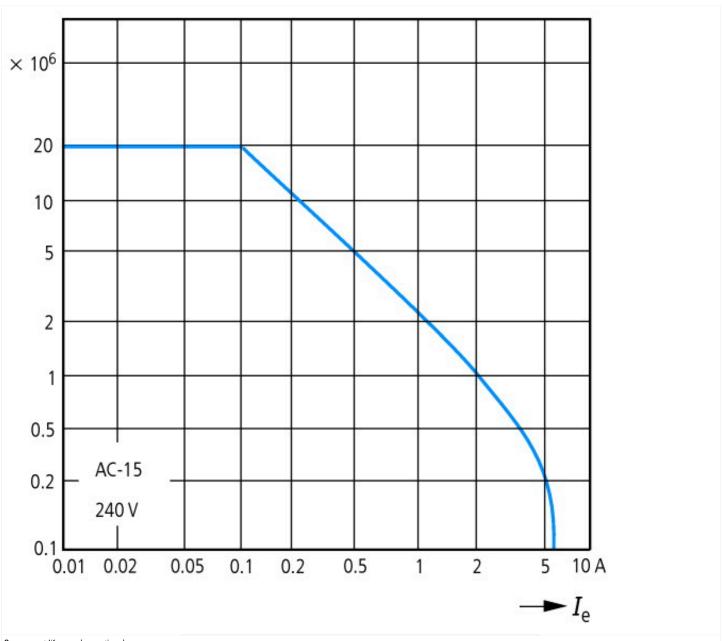
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])			
Rated control supply voltage Us at AC 50HZ	V	0 - 0	
Rated control supply voltage Us at AC 60HZ	V	0 - 0	
Rated control supply voltage Us at DC	V	220 - 220	
Voltage type for actuating		DC	
Rated operation current le, 400 V	Α	4	
Connection type auxiliary circuit		Spring clamp connection	
Mounting method		DIN-rail/screw	
Interface		No	
Number of auxiliary contacts as normally closed contact		0	
Number of auxiliary contacts as normally open contact		4	
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	

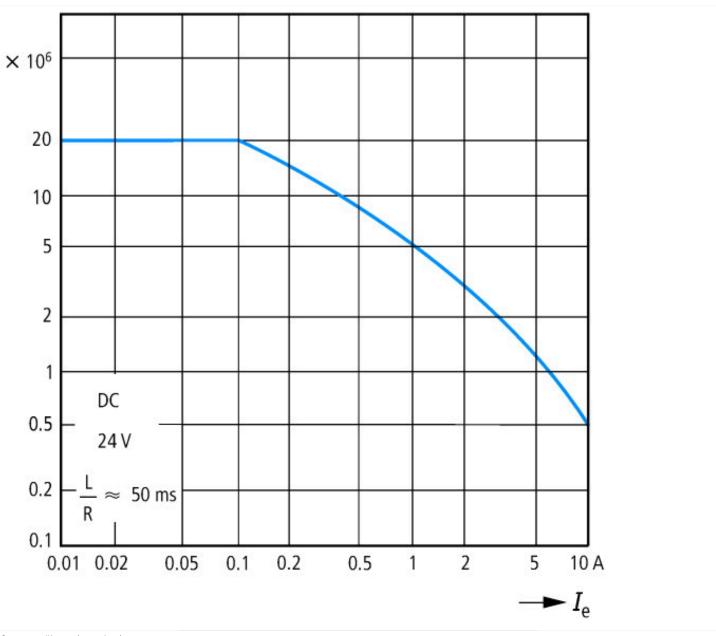
Approvals

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



1: Suppressor 2: Auxiliary contact module

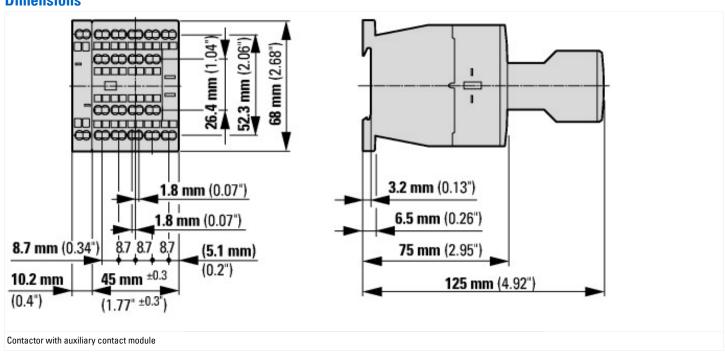


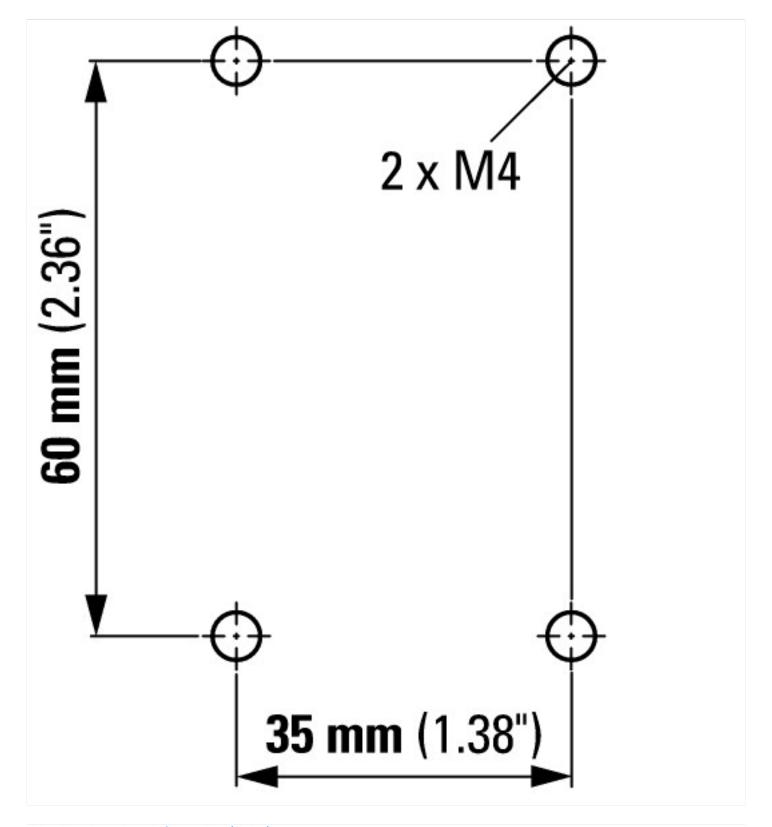


Component lifespan (operations) I_e = rated operational current

Three contacts in series

Dimensions





Additional product information (links)

IL03407013Z (AWA2100-2126) Contactors

IL03407013Z (AWA2100-2126) Contactors

https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2020_05.pdf