## DATASHEET - DILA-31(415V50HZ,480V60HZ)



Contactor relay, 415 V 50 Hz, 480 V 60 Hz, 3 N/O, 1 NC, Screw terminals, AC operation



Part no. Catalog No. No.

DILA-31(415V50HZ,480V60HZ) 276367 Alternate Catalog XTRE10B31C

Similar to illustration

#### **Delivery program**

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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	l <sub>e</sub>	А	4
380 V 400 V 415 V	le	А	4
Contacts			
N/O = Normally open			3 N/O
N/C = Normally closed			1 NC
Contact sequence			$\begin{array}{c} A^{1} \\ A^{1} \\ A^{2} \\$
Instructions			Contact numbers to EN 50011 Coil terminal markings to EN 50005
Code number and version of combination			
Distinctive number			31E
Can be combined with auxiliary contact module			DILA-XHI(V)
Actuating voltage			415 V 50 Hz, 480 V 60 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	x 10 <sup>6</sup>	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		0	
N/O contact		g	7
N/C contact		g g	5
Degree of Protection		y	IP20
Protection against direct contact when actuated from front (EN 50274) Altitude			Finger and back-of-hand proof Max. 2000
Weight		m	1/18X. 2000
AC operated		ka	0.24
		kg 2	0.24
Terminal capacities		mm <sup>2</sup>	
Screw terminals			
Solid		mm <sup>2</sup>	1 × (0,75 - 4) 2 × (0,75 - 2,5)
Flexible with ferrule		mm <sup>2</sup>	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	2 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 <sub>imp</sub>	V AC	6000
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V AC	690
Rated operational voltage	Ue	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		А	
Conventional free air thermal current, 1 pole			
Open			
at 60 °C	I <sub>th</sub> =I <sub>e</sub>	А	16
AC-15			
220 V 230 V 240 V	l <sub>e</sub>	A	4
380 V 400 V 415 V	l <sub>e</sub>	A	4
500 V	l <sub>e</sub>	A	1.5
DC current	U		
Notes			Switch-on and switch-off conditions based on DC-13, time constant as specified.
DC L/R ≤ 15 ms			
Contacts in series:		A	
1	24 V	A	10
1	24 V 60 V	A	6
2	60 V	A	10
1	60 V 110 V	A	3
3	110 V	A	6
3 1	220 V	A	1
3 DC 1/2 < 50 mg	220 V	A	5
DC L/R ≦ 50 ms		٨	
Contacts in series:	24.14	A	
3	24 V	A	4
3	60 V	Α	4
3	110 V	А	2

Control circuit reliability Fairer at 20   Stort-circuit rating without velding Fairer at 20   Maximum overcurrent protective device FR2M   20 V 20 V 24 V FR2M   30 V 400 V 415 V FR2M   Stort-circuit protection maximum fuse FR2M   30 V 400 V 415 V FR2M   30 Particitation Stating V FR2M   30 Particitation Stating V FR2M   30 Particitation Stating V FR2M   30 Particitation Stati	-			
Since is a line is a	3	220 V	A	1
Maximu overurent protective deviceImage: state of the stat	Control circuit reliability	Failure rate	λ	<10 <sup>-8</sup> , < one failure at 100 million operations (at U <sub>e</sub> = 24 V DC, U <sub>min</sub> = 17 V, I <sub>min</sub> = 5.4 mA)
280 Y200 Y200 Y200 Y200 Y200 Y200 Y200 Y	Short-circuit rating without welding			
380 400 V459   PK2M   PACM     Shon-circuit protection maximum fuse   PAGM   PagM     500 V   V   V     Soor parted   V   V   V     Acoperated   V   V   V     Magnet Systems   V   V   V     Votage tables   V   V   V     Sone-coll Systems   V   V   V     Sone-coll Systems   V   V   V     Sone-coll Systems   V   V   V   V     Sone-coll Systems   V	Maximum overcurrent protective device			
Short-circl protection maximum fuseMark PowerMark PowerShort-circl protection maximum fuseMark PowerMark 	220 V 230 V 240 V		PKZM0	4
Solv     Aging     Aging     Aging     Aging       Corrent heat loss at la     No     No     No       A Coparad     No     No     No       Magnet systems     No     No     No       A Coparad     No     No     No       Single-voltage coli 50 Hz and dual-voltage coli 50 Hz and dua	380 V 400 V 415 V		PKZM0	4
Current heal loss at Im     Compared     W     Solution       AC operated     W     W     Solution       Magnet systems     M     Solution     Solution       AC operated     M     M     Solution       Magnet systems     M     M     Solution       Magnet systems     M     M     M       Single-voltage coil 50 Hz and dual-voltage coil 50 Hz dol Hz     M     M     M       Single-voltage coil 50 Hz and dual-voltage coil 50 Hz dol Hz     M     M     M       Actor     M     M     M     M       Magnet systems     M	Short-circuit protection maximum fuse			
AC operated     W     B3       Magnet systems     Magnet systems     Magnet systems       Voltage tolerance     Magnet systems     Magnet systems       AC operated     Magnet systems     Magnet systems       A coperated     Magnet systems     Magnet systems       A coperated outspe coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz     Magnet system syst	500 V		A gG/gL	10
Name     Notage tolerance	Current heat loss at I <sub>th</sub>			
Voltage toleranceMarket MarketMarket MarketMarket MarketA CoperatedPick-upXU Market8-11Power consumptionPick-upXU Market8-11A CoperationPick-upXU Market8-11Single-voltage coils 00 Hz and dual-voltage coils 00 Hz, 60 HzPick-upXI Market8-11Single-voltage coils 00 Hz and dual-voltage coils 00 Hz, 60 HzPick-upXI Market3-10duty factorPick-upYU Market3-10duty factorMarketYU Market3-10A Coperated Oxiong delayMarketYU Market3-10Rate fact partnered typesMarketSealingYU MarketPick DutyMarketMarketSealingA Coperated N/0 contact opening delayMarketSealingYU MarketPick DutyMarketMarketSealingA CoperatedMarketMarketMarketA CoperatedMarketMarketMarketA CoperatedMarketMarketMarketA CoperatedMarketMarketMarketA ColonMarketMarketMarketA CoperatedMarketMarketMarketA CoperatedMarketMarketMarketA ColonMarketMarketMarketA ColonMarketMarketMarketA ColonMarketMarketMarketA ColonMarketMarketMarketA Colon<	AC operated		W	0.53
A Coperated     Note-up	Magnet systems			
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz     Pick-up     K Up     Sala       AC operation     Not-up     Value     Adopenation       Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz     Pick-up     Value     Adopenation       Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz     Sealing     Value     Adopenation       Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz     Sealing     Value     Adopenation       duty factor     Sealing     Value     Adopenation     Value       Ad operated losing delay     Sealing     Value     Sealing     Value       Ad operated for approved types     Management     Sealing     Sealing     Sealing       Pilot Duly     Adoperated     Management     Sealing     Sealing     Sealing       Ad Coperated     Management     Management     Sealing     Sealing     Sealing       Ad Coperated     Management     Management     Sealing     Sealing     Sealing       Ad Coperated     Management     Management     Sealing     Sealing     Sealing       Ad Coperated	Voltage tolerance			
Power consumption     Prover consumption     Prover consumption     Prover consumption       A C operation     Pick-up     VA     4       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     VA     3.4       duty factor     Sealing     VB     14       changeover time at 100 % Ug (recommended value)     VA     5.2     15.2       A C operated closing delay     MS     15.2     15.2       A C operated N/O contact opening delay     MS     9.18     15.2       Aktiliary contacts     MS     9.10     16.2       Pilot Duty     MS     A600     16.2     16.2       A C operated     MS     9.20     16.2     16.2       A C operated     MS     9.20     16.2     16.2     16.2       A C operated     MS     MS     16.2     16.2     16.2     16.2       A C operated     MS     MS     16.2     16.2     16.2     16.2     16.2	AC operated			
AC operationImage: Constraint of the second sec	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	x U <sub>c</sub>	0.8 - 1.1
Note of the second se	Power consumption			
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 VA 1.4   duty factor % D F 10   Changeover time at 100 % Us (recommended value) ms 15 - 21   AC operated closing delay ms 9 - 18   Rating data for approved types ms 9 - 18   Rutiliary contacts Marce Marce   Pilot Duty Marce Marce Marce   AC operated Marce Marce Marce   Act operated science Marce Marce Marce   Act operated Marce Marce Marcee   Act operated Marcee Marcee Marcee   Ac	AC operation			
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz Sealing W 1.4   duty factor % DF 10   Changeover time at 100 % U <sub>S</sub> (recommended value) % DF 10   AC operated closing delay ms 15 - 21   AC operated N/O contact opening delay ms 9 - 18   Rating data for approved types ms 9 - 18   Akting vontacts Mathematical Mathemathematical Mathematical Mathematical Mathematical Mathematical M	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Pick-up	VA	24
duty factor     % DF     100       Changeover time at 100 % U <sub>S</sub> (recommended value)	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Sealing	VA	3.4
Changeover time at 100 % U <sub>S</sub> (recommended value) Image: Change over time at 100 % U <sub>S</sub> (recommended value)   AC operated closing delay ms 15 - 21   AC operated N/O contact opening delay ms 9 - 18   Rating data for approved types   Aktion operated N/O contact opening delay ms 9 - 18   Auxiliary contacts   Pilot Duty M Monotonic operated   AC operated M Monotonic operated   DC operated M Monotonic operated   General Use M Monotonic operated   AC Monotonic operated Monotonic operated   AC Monotonic operated Monotonic operated   AC Monotonic operated Monotonic operated   Monotonic operated Monotonic operated Monotonic operated   Monotonic operated Monotonic operated Monotonic operated   AC Monotonic operated Monotonic operated   Monotonic operated Monotonic operated	Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz	Sealing	W	1.4
AC operated closing delay ms 5 - 21   AC operated N/O contact opening delay ms 9 - 18   Rating data for approved types   Akilary contacts Max Max   Pilot Duty Max A600   AC operated Max Max	duty factor		% DF	100
AC operated N/O contact opening delay ms 9 - 18   Rating data for approved types Auxiliary contacts Image: Second Sec	Changeover time at 100 $\%~\text{U}_{S}$ (recommended value)			
Rating data for approved types     Auxiliary contacts   Image: Sector Secto	AC operated closing delay		ms	15 - 21
Auxiliary contacts Image: Marking the state of the st	AC operated N/O contact opening delay		ms	9 - 18
Pilot DutyPilot DutyAC operatedPilot DoperatedDC operatedPilot PilotGeneral UsePilot PilotACPilot PilotACPilot PilotACPilot PilotDCPilot PilotDCPilot PilotPilot Pilot	Rating data for approved types			
AC operatedA600DC operatedP300General UseIACIACIACIDCIDCI	Auxiliary contacts			
DC operated Model   General Use Model   AC Model   AC AC   DC AC   DC V   BC V	Pilot Duty			
General Use V 600   AC V 600   AC A A   DC V 50	AC operated			A600
AC     V     600       AC     A     15       DC     V     250	DC operated			P300
AC A 15 DC V 250	General Use			
DC V 250	AC		V	600
	AC		А	15
DC A 1	DC		V	250
	DC		А	1

# Design verification as per IEC/EN 61439

Technical data for design verification			
•	1	٨	15.5
Rated operational current for specified heat dissipation	In	A	15.5
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.5
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	1.4
Heat dissipation capacity	P <sub>diss</sub>	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.

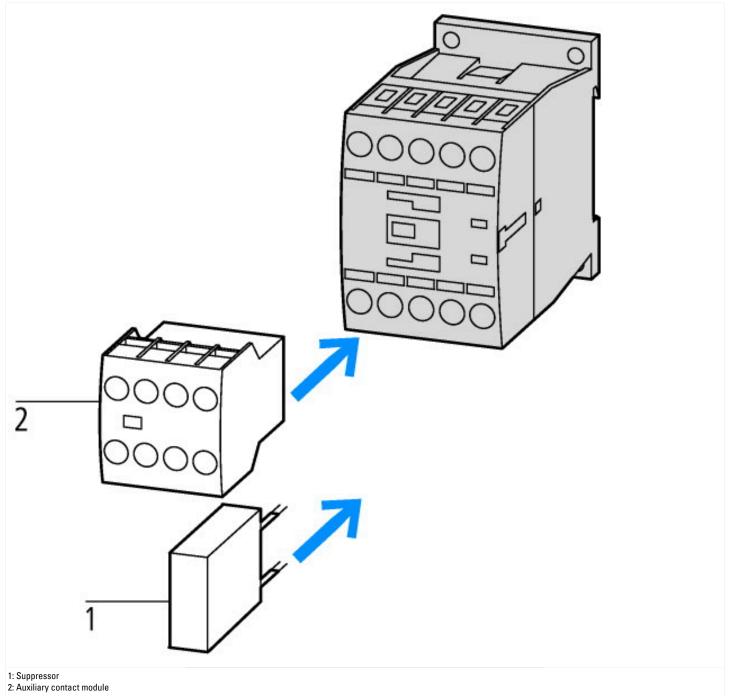
## **Technical data ETIM 7.0**

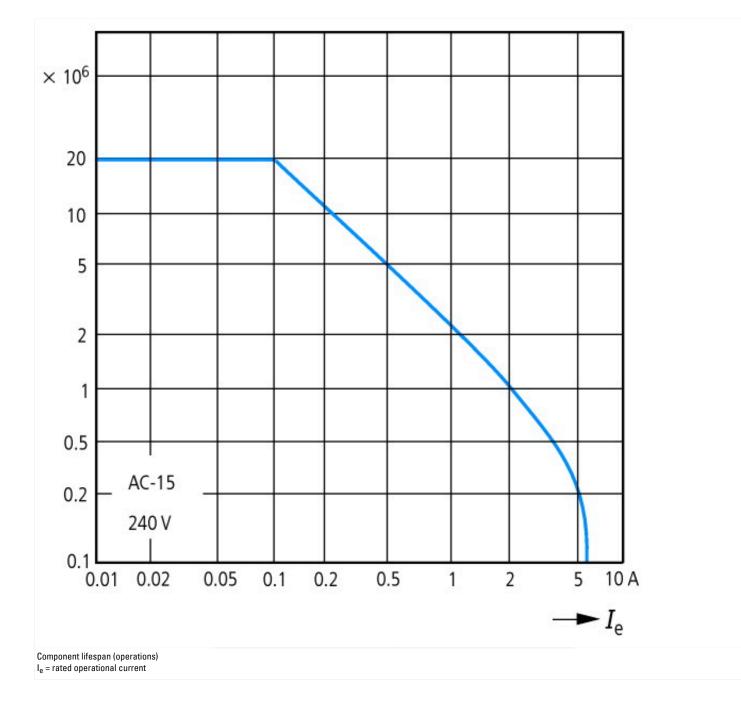
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)

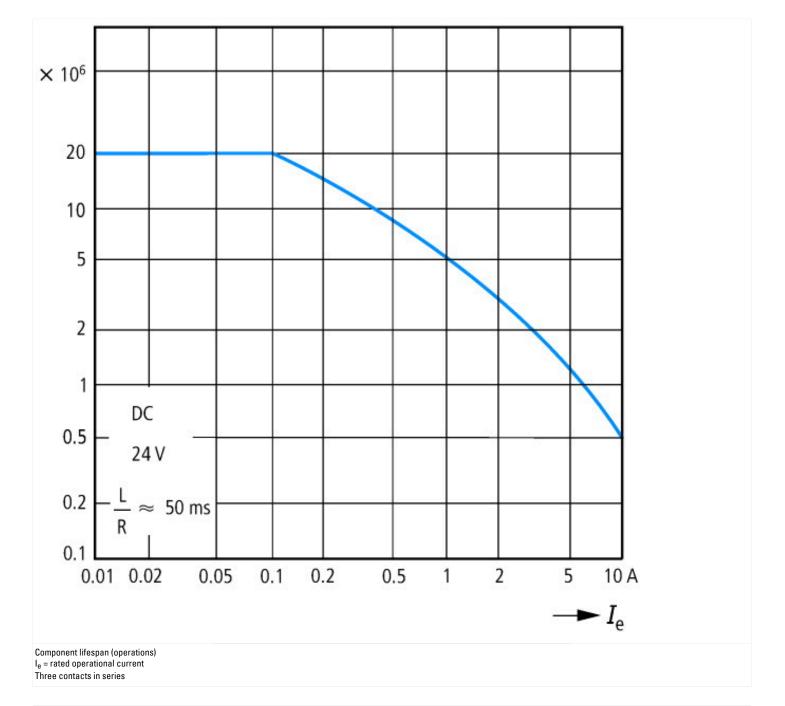
Electric engineering, automation, process control engineering / Low-voltage switch te	chnology / Contact	or (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])
	•,	
Rated control supply voltage Us at AC 50HZ	V	415 - 415
Rated control supply voltage Us at AC 60HZ	V	480 - 480
Rated control supply voltage Us at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current le, 400 V	А	4
Connection type auxiliary circuit		Screw connection
Mounting method		DIN-rail/screw
Interface		No
Number of auxiliary contacts as normally closed contact		1
Number of auxiliary contacts as normally open contact		3
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**

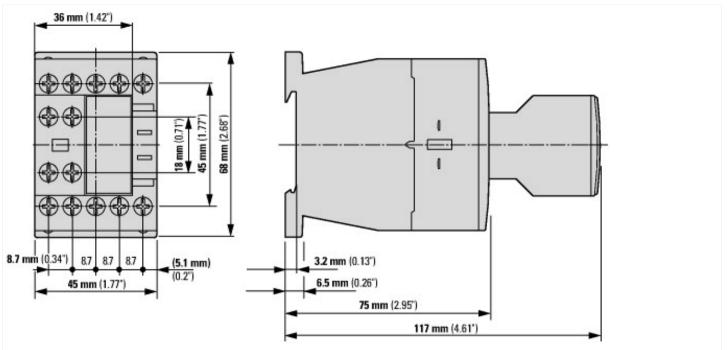
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	012528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Specially designed for North America	No

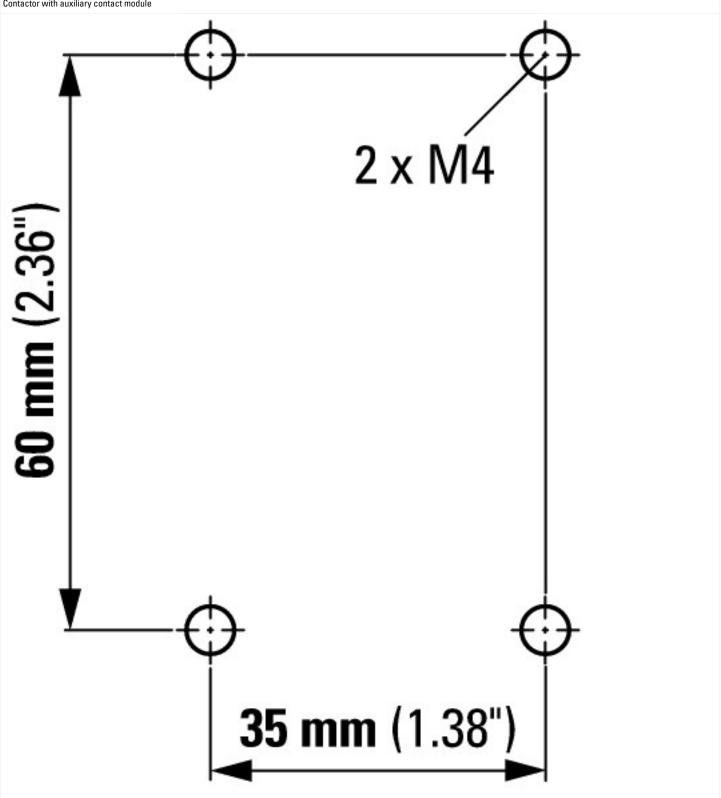






#### **Dimensions**





## Additional product information (links)

IL03407013Z (AWA2100-2126) Contactors

IL03407013Z (AWA2100-2126) Contactors

https://es-assets.eaton.com/DOCUMENTATION/AWA\_INSTRUCTIONS/IL03407013Z2020\_05.pdf