# **DATASHEET - DILA-31(24V60HZ)**



Contactor relay, 24 V 60 Hz, N/O = Normally open: 3 N/O, N/C = Normally closed: 1 NC, Screw terminals, AC operation



Part no. DILA-31(24V60HZ)
Catalog No. 276355
Alternate Catalog XTRE10B31B6

No

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	l <sub>e</sub>	Α	4
380 V 400 V 415 V	l <sub>e</sub>	Α	4
Contacts			
N/O = Normally open			3 N/O
N/C = Normally closed			1 NC
Contact sequence			A1 13 21 33 43 TA2 14 22 34 44
Code number and version of combination			
Distinctive number			31E
Can be combined with auxiliary contact module			DILA-XHI(V)
Actuating voltage			24 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**

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			30°
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		$\mathrm{mm}^2$	1 x (0,75 - 4) 2 x (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	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	oimp	V AU	III/3
Rated insulation voltage	Ui	V AC	690
		V AC	
Rated operational voltage	U <sub>e</sub>	V AC	690
Safe isolation to EN 61140		VAC	400
between coil and auxiliary contacts		VAC	400
between the auxiliary contacts		V AC	400
Rated operational current  Conventional free air thermal current, 1 pole		A	
Open			
at 60 °C	I <sub>th</sub> =I <sub>e</sub>	Α	16
AC-15	·m -·e	^	
220 V 230 V 240 V	I <sub>e</sub>	A	4
380 V 400 V 415 V		A	4
	l <sub>e</sub>		
500 V	I <sub>e</sub>	Α	1.5
DC current			0.71
Notes  DC L/R ≦ 15 ms			Switch-on and switch-off conditions based on DC-13, time constant as specified.
DC L/R ≥ 15 ms  Contacts in series:		A	
Contacts in series:	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 ≤ 50 ms			
Contacts in series:		Α	
3	24 V	A	4
3	60 V	Α	4
3	110 V	Α	2
3	220 V	А	1
Control circuit reliability	Failure rate	λ	<10 <sup>-8</sup> , < one failure at 100 million operations

			(at $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA)
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 <sub>th</sub>			
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 60 Hz	Pick-up	VA	30
Single-voltage coil 60 Hz	Sealing	VA	4.4
Single-voltage coil 60 Hz	Sealing	W	1.4
duty factor		% DF	100
Changeover time at 100 % $\mathrm{U}_\mathrm{S}$ (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		Α	15
DC		V	250
DC		Α	1

# Design verification as per IEC/EN 61439

1 .			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	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
EC/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.

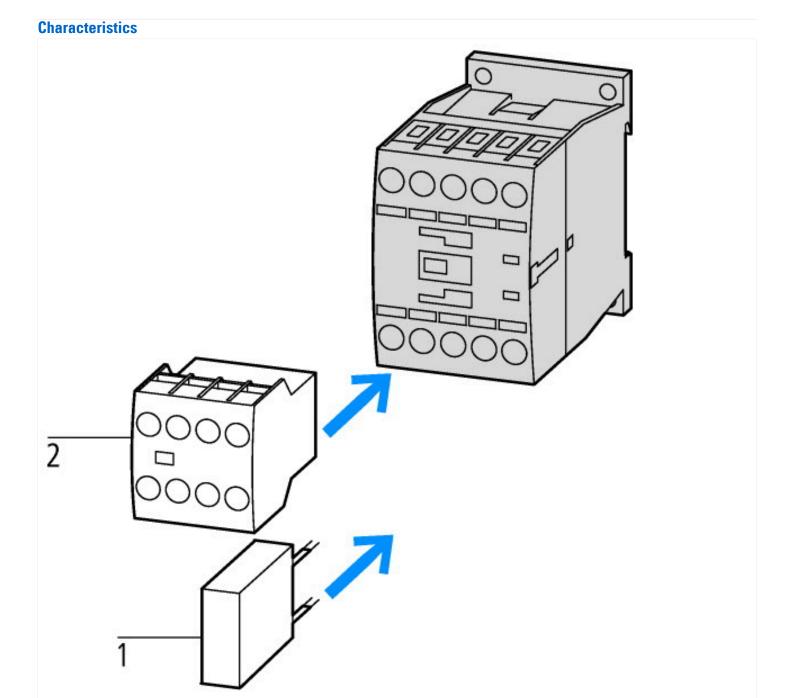
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9 Insulation 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**

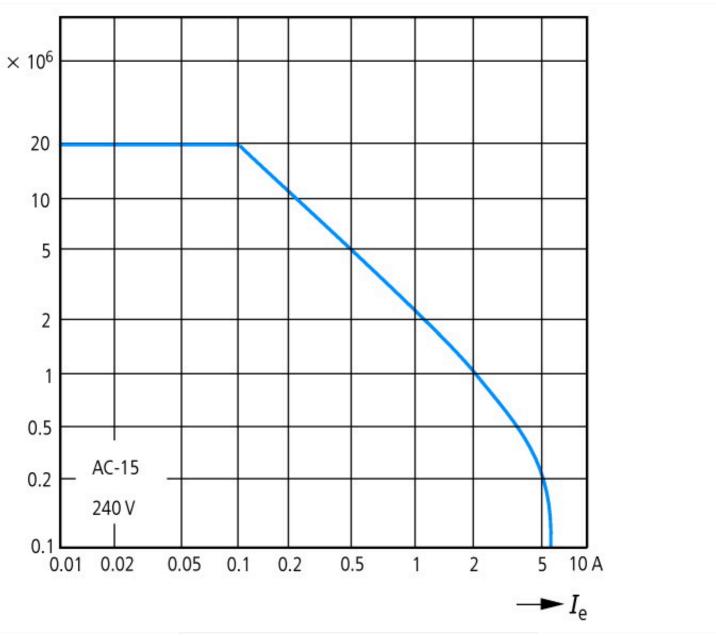
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])		
Rated control supply voltage Us at AC 50HZ	V	0 - 0
Rated control supply voltage Us at AC 60HZ	V	24 - 24
Rated control supply voltage Us at DC	V	0 - 0
Voltage type for actuating		AC
Rated operation current le, 400 V	Α	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

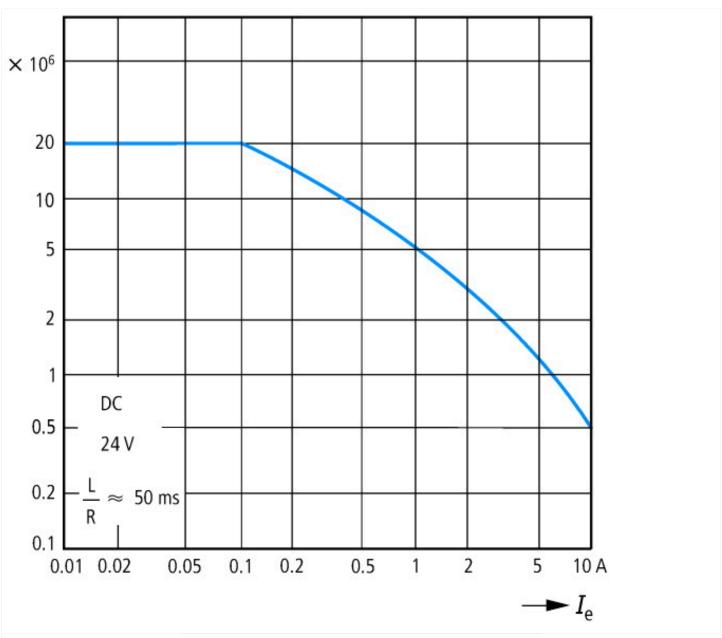
# **Approvals**

• •	
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



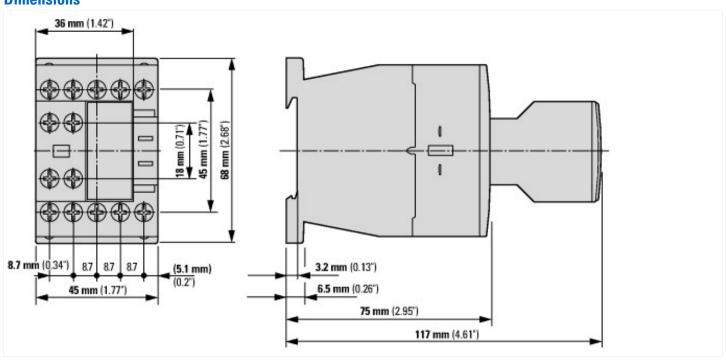
1: Suppressor 2: Auxiliary contact module

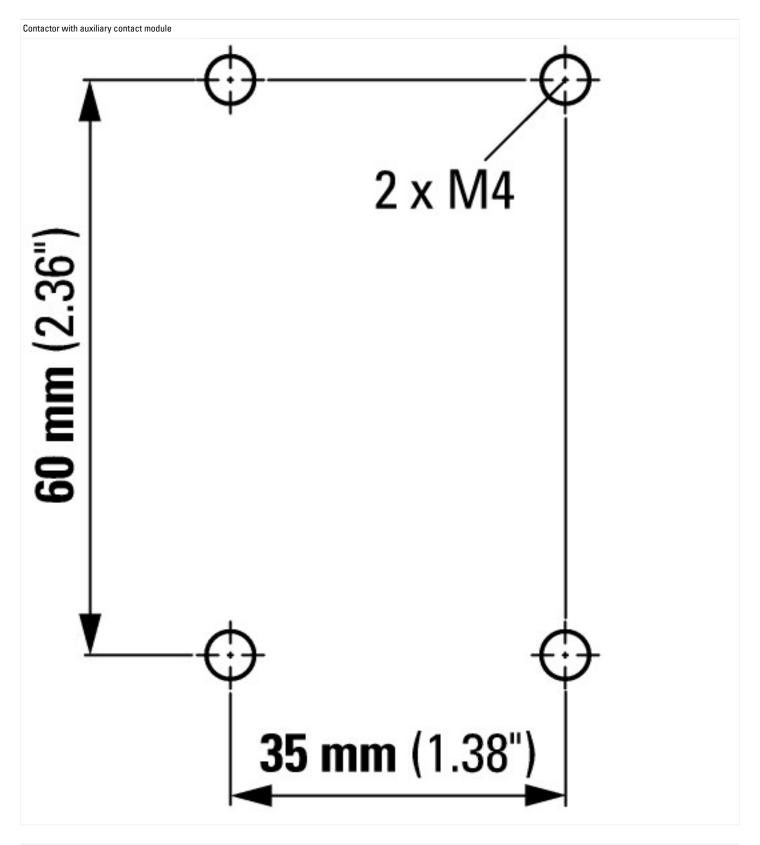




$$\label{eq:component lifespan (operations)} \begin{split} & l_e = \text{rated operational current} \\ & \text{Three contacts in series} \end{split}$$

### **Dimensions**





#### **Assets (links)**

**Declaration of CE Conformity** 00002875

**Instruction Leaflets** 

IL03407013Z2018\_07

#### **Additional product information (links)**

IL03407013Z (AWA2100-2126) Contactors

IL03407013Z (AWA2100-2126) Contactors

ftp://ftp.moeller.net/DOCUMENTATION/AWA\_INSTRUCTIONS/IL03407013Z2020\_05.pdf