



Contactor relay, 48 V 50 Hz, 3 N/O, 1 NC, Screw terminals, AC operation



**Part no.** DILA-31(48V50HZ)  
**Catalog No.** 276352  
**Alternate Catalog No.** XTRE10B31Y

Similar to illustration

### Delivery program

Product range			DILA relays
Application			Contactor relays
Description			Basic devices with positive operation contacts
Connection technique			Screw terminals
<b>Rated operational current</b>			
AC-15			
220 V 230 V 240 V	$I_e$	A	4
380 V 400 V 415 V	$I_e$	A	4
<b>Contacts</b>			
N/O = Normally open			3 N/O
N/C = Normally closed			1 NC
Contact sequence			
<b>Instructions</b>			Contact numbers to EN 50011 Coil terminal markings to EN 50005
<b>Code number and version of combination</b>			
Distinctive number			31E
Can be combined with auxiliary contact module			DILA-XHI(V)...
Actuating voltage			48 V 50 Hz
Voltage AC/DC			AC operation
Connection to SmartWire-DT			no
<b>Instructions</b>			Contact numbers to EN 50011 Coil terminal markings to EN 50005

### Technical data

<b>General</b>			
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 <sup>2</sup>	
Screw terminals			
Solid		mm <sup>2</sup>	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	$U_{imp}$	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	$\lambda$	<math>10^{-8}</math>, <math>< 1</math> 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 $I_{th}$				
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.

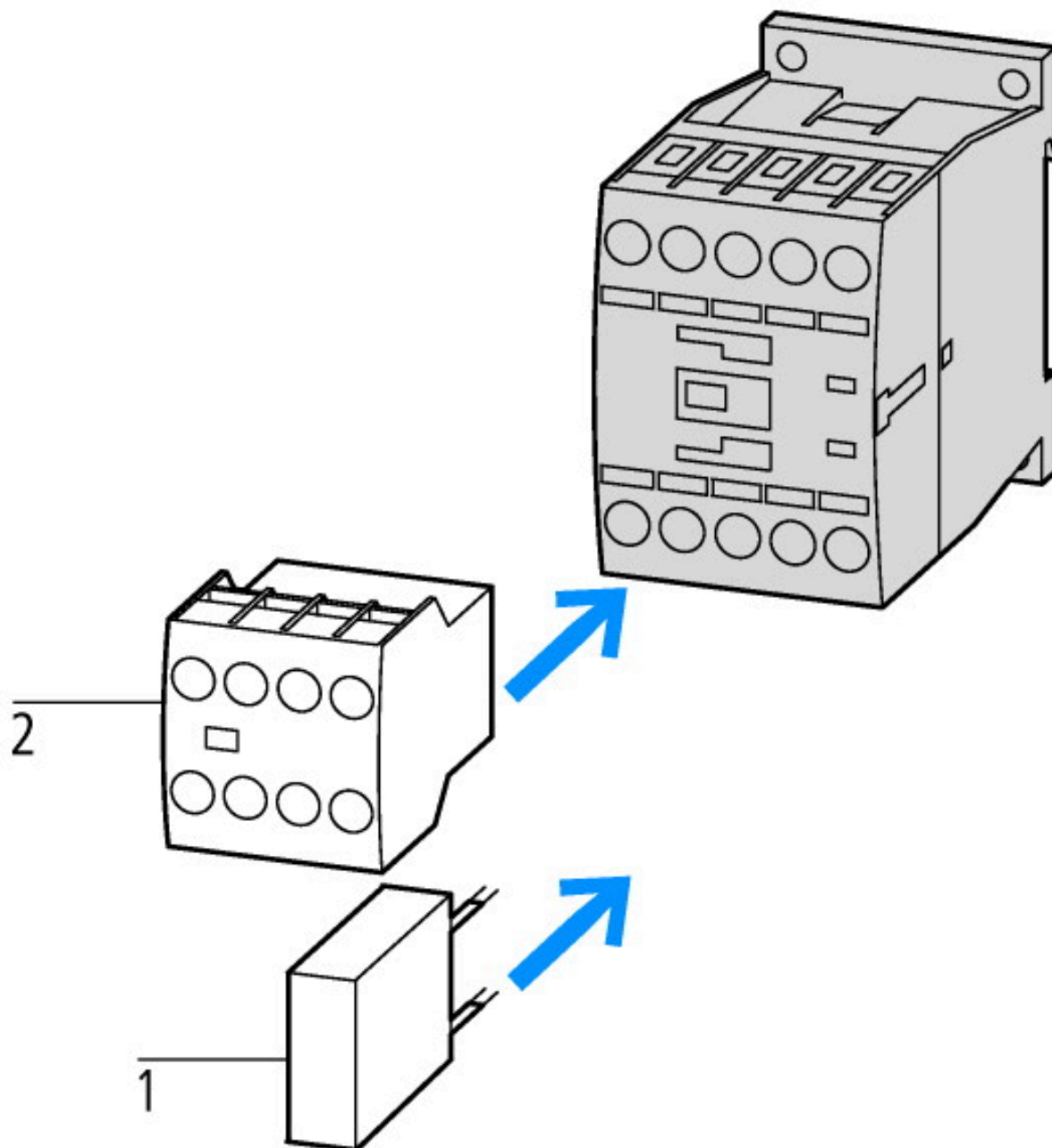
10.5 Protection against electric shock		Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components		Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections		Is the panel builder's 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	48 - 48
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



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





### Additional product information (links)

IL03407013Z (AWA2100-2126) Contactors

IL03407013Z (AWA2100-2126) Contactors

[https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL03407013Z2020\\_05.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407013Z2020_05.pdf)