

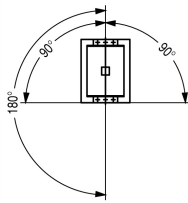
**Contactor relay, 110 V 50 Hz, 120 V 60 Hz, 3 N/O, 1 NC, Push in terminals, AC operation**

**Part no. DILA-31(110V50HZ,120V60HZ)-PI**  
**Catalog No. 199210**  
**Alternate Catalog No. XTREPI10B31A**

### Delivery program

Product range				DILA relays
Application				Contactor relays
Description				Basic devices with positive operation contacts
Connection technique				Push in 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>Code number and version of combination</b>				
Distinctive number				31E
Can be combined with auxiliary contact module				DILA-XHI(V)...-PI
Actuating voltage				110 V 50 Hz, 120 V 60 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	0.23
Terminal capacities		mm <sup>2</sup>	
Push-in terminals			
Solid		mm <sup>2</sup>	1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible		mm <sup>2</sup>	1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible with ferrules		mm <sup>2</sup>	1 x (0,5 - 1,5) 2 x (0,5 - 1,5)
flexible with ultrasonic welded busbar end		mm <sup>2</sup>	1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
flexible with uninsulated wire end ferrule		mm <sup>2</sup>	1 x (0,5 - 2,5) 2 x (0,5 - 2,5)
Solid or stranded		AWG	20 - 14
Stripping length		mm	10
Standard screwdriver			3.0 x 0.5

## 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			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	$\lambda$	$<10^{-8}$ , < 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 $I_{th}$		
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			
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60

### Technical data ETIM 8.0

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 $U_s$ at AC 50HZ		V	110 - 110
Rated control supply voltage $U_s$ at AC 60HZ		V	120 - 120
Rated control supply voltage $U_s$ at DC		V	0 - 0
Voltage type for actuating			AC
Rated operation current $I_e$ , 400 V		A	4
Connection type auxiliary circuit			Spring clamp 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
Number of auxiliary contacts as change-over contact			0
With LED indication			No
Suitable for manual operation			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

--