## **DATASHEET - DILER-31-G(220VDC)**



Contactor relay, 220 V DC, N/O = Normally open: 3 N/O, N/C = Normally closed: 1 NC, Screw terminals, DC operation



Part no. DILER-31-G(220VDC)
Catalog No. 010269

Alternate Catalog XTRM10A31BD

No

Similar to illustration

Delivery program			
Product range			DILER Mini-contactors
Application			Contactor relays
Description			with interlocked opposing contacts
Connection technique			Screw terminals
Rated operational current			
Conventional free air thermal current, 1 pole			
Open			
at 50 °C	$I_{th} = I_e$	Α	10
AC-15			
220 V 230 V 240 V	I <sub>e</sub>	Α	6
380 V 400 V 415 V	I <sub>e</sub>	Α	3
Contacts			
N/O = Normally open			3 N/O
N/C = Normally closed			1 NC
Contact sequence			A1 13 21 33 43 A2 14 22 34 44
Code number and version of combination			
Distinctive number			31E
For use with			DILE
Actuating voltage			220 V DC
Voltage AC/DC			DC operation
Instructions			Contact numbers to EN 50011 Coil terminal markings to EN 50005 Integrated diode-resistor combination Coil rating 2.6 W

#### **Technical data**

#### General

General			
Standards			IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA
Lifespan, mechanical			
DC 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 - +50
Enclosed		°C	- 25 - 40
Mounting position			
Mounting position			As required, except vertical with terminals A1/A2 at the bottom

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	10
N/C contact		g	8
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	0.211
Terminal capacities		$\text{mm}^2$	
Screw terminals			
Solid		mm <sup>2</sup>	1 x (0.75 - 2.5)
			2 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)
Solid or stranded		AWG	18 - 14 1 x (18 - 14) 2 x (18 - 14)
Stripping length		mm	8
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			Yes
Interlocked opposing contacts to ZH 1/457, including auxiliary contact module		V AC	
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Overvoltage category/pollution degree		V AC	III/3
Rated insulation voltage	U <sub>i</sub>	V AC	690
Rated operational voltage	U <sub>e</sub>	V AC	600
Safe isolation to EN 61140			200
between coil and auxiliary contacts		V AC	300
between the auxiliary contacts		V AC	300
Rated operational current		Α	
Conventional free air thermal current, 1 pole			
Open	11	۸	10
at 50 °C	I <sub>th</sub> =I <sub>e</sub>	Α	10
AC-15			
220 V 230 V 240 V	l <sub>e</sub>	A	6
380 V 400 V 415 V	l <sub>e</sub>	A	3
500 V	I <sub>e</sub>	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	2.5

Voltage tolerance  DC operated  Notes Pick-up voltage at 24 V: without auxiliary contact component (40 °C) PC operated  DC operated N/O contact opening delay DC operated With auxiliary contact module Max. closing delay DC operated With auxiliary contact module Max. closing delay DC operated With auxiliary contact module Max. closing delay  BC operated With auxiliary contact module Max. clo				
Source   Control circuit reliability	2	60 V	Α	2.5
Control circuit ratiability	3	110 V	Α	1.5
Short-circuit rating without welding	3	220 V	Α	0.5
Maximum overcurront protective device         KPCMD         4           220 V 230 V 240 V 240 V 140 V 150 V         KPCMD         4           380 V 400 V 415 V         KPCMD         4           500 V         Sobric-circiti protection maximum fuse         FVEXMD         4           500 V         A g6/gl         6           Current beat Loss t Im         KPCMD         1           DC operated         NOTE         NOTE           Mostres Systems         SWEXMD         4           Pick-up voltage         SWEXMD         4           A 25 V. without suddiary contact component (40 °C)         Pick-up voltage         085 - 1.3           at 24 V. without suddiary contact component (40 °C)         Pick-up voltage         07 - 1.3           clury factor         SWEXMD         30 P           DC operated         SWEXMD         30 P           DC operated William         W         2 S           clury factor         SWEXMD         30 P           DC operated William         W         2 S           clury factor         SWEXMD         30 P           Choperated William         SWEXMD         30 P           Choperated Will factorize pering delay         m         m         2 P	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         PKZM0         4           380 V 400 V 15 V         PKZM0         4           580 V - Frictive protection maximum fuse         V         A 66/GL           500 V         A 66/GL         10           Current heat loss at l <sub>m</sub> V         V           DC Operated         V         V           Magnet systems         V         Y           Wallage tolerance           DC Operated         V         V         20           Notes         Smoothed DC, three-phase bridge restifiers or smoothed double-wave rectification.         Notes         Notes at 24 V. without suciliary contact component (40 °C)         Pick-up off St. up at 24 V. without suciliary contact component (40 °C)         Pick-up off St. up at 24 V. without suciliary contact component (40 °C)         Pick-up off St. up at 24 V. without suciliary contact component (40 °C)         Pick-up at 24 V. without suciliary contact component (40 °C)         Pick-up at 24 V. without suciliary contact component (40 °C)         Pick-up at 24 V. without suciliary contact component (40 °C)         Pick-up at 24 V. D. St.	Short-circuit rating without welding			
Sa0 V 400 V 415 V   Short-circuit protection maximum fuse	Maximum overcurrent protective device			
Short-circuit protection maximum fuse	220 V 230 V 240 V		PKZM0	4
	380 V 400 V 415 V		PKZM0	4
SOOV   Current heat loss at In   Currenth	Short-circuit protection maximum fuse			
Current heat loss at Iqn         W         Interpretation         W         1.1           Magnet systems         Voltage tolarance         W         5.00         5.0	500 V		A gG/gL	6
DC operated   Washingtown	500 V		A fast	10
Magnet systems         Voltage tolerance         Feature 1         Feature 2         Feature 3         Modes         Modes         Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification 0.85 - 1.3         Modes 1.3         Modes 2.4 · Without auxiliary contact component (40 °C)         Pick-up voltage 2.4 · Without auxiliary contact component (40 °C)         Pick-up voltage 2.4 · Without auxiliary contact component (40 °C)         Pick-up voltage 2.4 · Without auxiliary contact component (40 °C)         Pick-up voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact component (40 °C)         Pill-in = voltage 2.4 · Without auxiliary contact module Aux closing dalay         Pill-	Current heat loss at I <sub>th</sub>			
Votage tolerance         Fight	DC operated		W	1.1
DC operated         Notes         Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification           Pick-up voltage         0.85 - 1.3           at 24 V: without auxiliary contact component (40 °C)         Pick-up x U <sub>c</sub> voltage         7 - 1.3           DC operation         Pull-in = sealing         W         2           DC operated         Pull-in = sealing         W D         2           DC operated Closing delay         W         2         2           DC operated With auxiliary contact module Max. closing delay         m         5 - 25           DC operated With auxiliary contact module Max. closing delay         m         10 - 25           Ac Operated         M         M         10 - 25           Pilot Duy         AC Operated         M         460           AC Operated         M         460           General Use         V         600           AC         AC         0         0	Magnet systems			
Notes Pick-up voltage at 24 V. without auxiliary contact component (40 °C)  DC operation  DC operation  DC operated  DC operated N/O contact opening delay DC operated N/O contact opening delay DC operated With auxiliary contact module Max. closing delay DC operated With auxiliary contact module Max. closing delay DC operated VID contact opening delay DC operated With auxiliary contact module Max. closing delay Ac operated DC operated AC operated	Voltage tolerance			
Pick-up voltage         24 V: without auxiliary contact component (40 °C)         Pick-up         x U <sub>c</sub> 0.7 - 1.3           Power consumption         Power consumption         V	DC operated			
Power consumption  DC operation  DC operated  DC operated N/O contact opening delay  DC operated With auxiliary contact module Max. closing delay  DC operated With auxiliary contact module Max. closing delay  Pilot Duty  AC operated  DC operated  DC operated  AC operated  AC A	Notes			Smoothed DC, three-phase bridge rectifiers or smoothed double-wave rectification
Power consumption DC operated  DC operated  Pull-in = sealing W 23  duty factor  Changeover time at 100 % Us (recommended value)  DC operated Closing delay  DC operated N/O contact opening delay  DC operated With auxiliary contact module Max. closing delay  Rating data for approved types  Auxiliary contacts  Pilot Duty  AC operated  DC operated  AC operated  AC AC AC AC AC  DC ODC Operated  Pull-in = w 2 a a a a a a a a a a a a a a a a a a	Pick-up voltage			0.85 - 1.3
DC operated         Pull-in = sealing         W         2.3           duty factor         MD         100           Changeover time at 100 % U <sub>S</sub> (recommended value)         WD         25 - 35           DC operated Closing delay         MS         25 - 25           DC operated With auxiliary contact module Max. closing delay         MS         70           Rating data for approved types         Y         4600           AC operated         Pilot Duty         A600           AC operated         P300         P300           General Use         V         600           AC         AC         A         10           AC         AC         A         10           DC         DC         V         250	at 24 V: without auxiliary contact component (40 °C)	Pick-up	x U <sub>c</sub>	0.7 - 1.3
DC operated  Pull-in = sealing W 23  duty factor	Power consumption			
duty factor     % DF     100       Changeover time at 100 % U <sub>S</sub> (recommended value)     ms     26 - 35       DC operated N/O contact opening delay     ms     15 - 25       DC operated With auxiliary contact module Max. closing delay     ms     70       Rating data for approved types       Auxiliary contacts     Image: Company of the contact opening delay     Image: Company of the contact opening delay       Pilot Duty     AC operated     A600       DC operated     P300       General Use     V     600       AC     AC     A     10       AC     AC     A     10       DC     DC     Y     250	DC operation			
Changeover time at 100 % U <sub>S</sub> (recommended value)  DC operated Closing delay  DC operated N/O contact opening delay  DC operated With auxiliary contact module Max. closing delay  Rating data for approved types  Auxiliary contacts  Pilot Duty  AC operated  DC operated  AC  AC  AC  DC  DC  DC  DC  DC  DC  DC	DC operated		W	2.3
DC operated closing delay  DC operated N/O contact opening delay  DC operated With auxiliary contact module Max. closing delay  Rating data for approved types  Auxiliary contacts  Pilot Duty  AC operated  DC operated  AC  AC  AC  DC  DC  DC  DC  DC  DC  DC	duty factor		% DF	100
DC operated N/O contact opening delay  DC operated With auxiliary contact module Max. closing delay  Rating data for approved types  Auxiliary contacts  Pilot Duty  AC operated  DC operated  AC  AC  AC  AC  DC  DC  DC  DC  DC  DC	Changeover time at 100 % $\mathrm{U}_{\mathrm{S}}$ (recommended value)			
DC operated With auxiliary contact module Max. closing delay  Rating data for approved types  Auxiliary contacts  Pilot Duty  AC operated  DC operated  AC  AC  AC  AC  AC  AC  AC  AC  AC  A	DC operated closing delay		ms	26 - 35
Rating data for approved types           Auxiliary contacts	DC operated N/O contact opening delay		ms	15 - 25
Auxiliary contacts       Pilot Duty       4600         AC operated       A600         DC operated       P300         General Use       V         AC       V       600         AC       A       10         DC       V       250	DC operated With auxiliary contact module Max. closing delay		ms	70
Pilot Duty       A600         AC operated       P300         General Use       V 600         AC       A 10         DC       V 250	Rating data for approved types			
AC operated       A600         DC operated       P300         General Use       V         AC       V       600         AC       A       10         DC       V       250	Auxiliary contacts			
DC operated       P300         General Use       V       600         AC       A       10         DC       V       250	Pilot Duty			
General Use         V         600           AC         A         10           DC         V         250	AC operated			A600
AC       V       600         AC       A       10         DC       V       250	DC operated			P300
AC	General Use			
DC V 250	AC		V	600
	AC		Α	10
DC A 0.5	DC		V	250
	DC		Α	0.5

# **Design verification as per IEC/EN 61439**

In	Α	6
P <sub>vid</sub>	W	0.4
P <sub>vid</sub>	W	0
P <sub>vs</sub>	W	2.3
P <sub>diss</sub>	W	0
	°C	-25
	°C	50
		Meets the product standard's requirements.
		Meets the product standard's requirements.
		Meets the product standard's requirements.
		Meets the product standard's requirements.
	P <sub>vid</sub> P <sub>vid</sub> P <sub>vs</sub>	P <sub>vid</sub> W P <sub>vid</sub> W P <sub>vs</sub> W P <sub>diss</sub> W °C °C

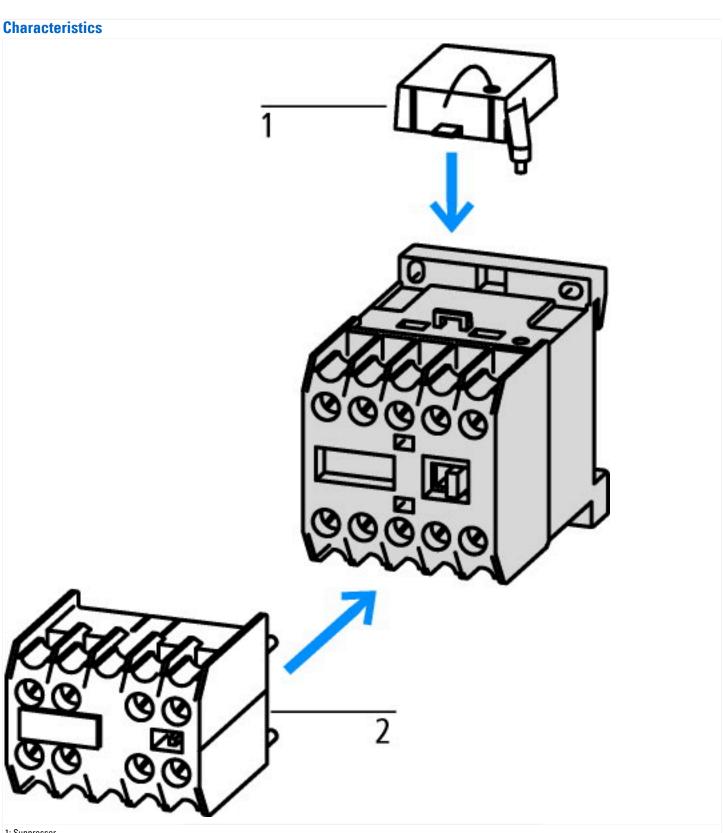
10.2.4 Resistance to ultra-violet (UV) radiation	Meets the product standard's requirements.
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product 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**

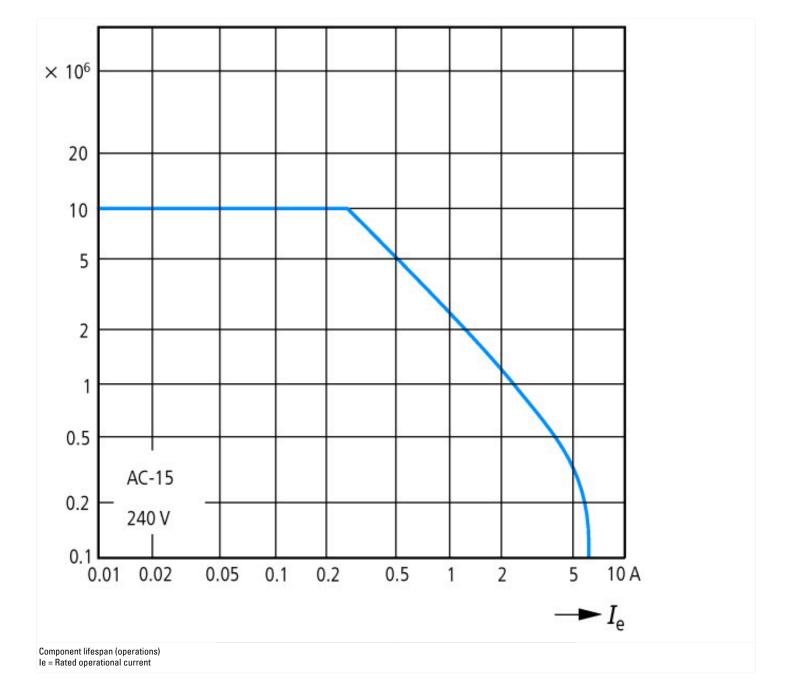
Low-voltage industrial components (EG000017) / Contactor relay (EC000196)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Contactor relay (ecl@ss10.0.1-27-37-10-01 [AAB716014])		
Rated control supply voltage Us at AC 50HZ	V	0 - 0
Rated control supply voltage Us at AC 60HZ	V	0 - 0
Rated control supply voltage Us at DC	V	220 - 220
Voltage type for actuating		DC
Rated operation current le, 400 V	А	3
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

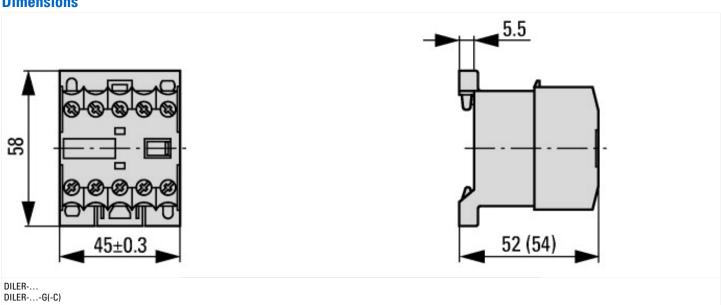
Product Standards	IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	012528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Specially designed for North America	No

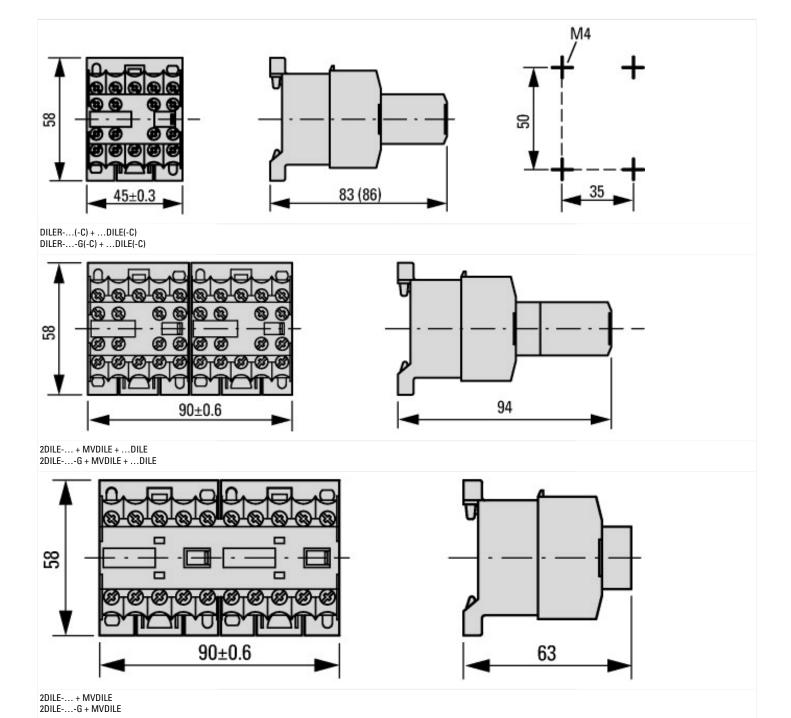


1: Suppressor 2: Auxiliary contact module



# **Dimensions**





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

IL03407009Z (AWA2100-0882) Mini contactor relay

IL03407009Z (AWA2100-0882) Mini contactor relay

https://es-assets.eaton.com/DOCUMENTATION/AWA\_INSTRUCTIONS/IL03407009Z2020\_05.pdf