DATASHEET - DILER-22-G-EA(24VDC)

Contactor relay, 24 V DC, N/O = Normally open: 2 N/O, N/C = Normally closed: 2 NC, Screw terminals, DC operation



Part no. DILER-22-G-EA(24VDC)

Catalog No. 189978

Delivery program

Donvoiry 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	l _e	Α	6
380 V 400 V 415 V	l _e	Α	3
Contacts			
N/O = Normally open			2 N/O
N/C = Normally closed			2 NC
Code number and version of combination			
Distinctive number			22E
Actuating voltage			24 V DC
Voltage AC/DC			DC operation
Instructions			Contact numbers to EN 50011 Coil terminal markings to EN 50005 Integrated diode-resistor combination

Technical data

General

Lifespan, mechanical DC operated Operations x 108 20 Maximum operating frequency Operations/h Climatic proofing Ambient temperature Open	General			
DC operated Operations x 106 20 20 20 20 20 20 20 20 20 20 20 20 20	Standards			IEC/EN 60947, EN 60947-5-1, VDE 0660, UL, CSA
Maximum operating frequency Climatic proofing Ambient temperature Open Open Cc -25 - +50 Enclosed Mounting position Mounting position Mechanical shock resistance (IEC/EN 60088-2-27) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module N/C contact N/C contact Ogene of Protection Protection against direct contact when actuated from front (EN 50274) Altitude DC operated DC operated DC operated Terminal capacities Operations/h Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-78 Damp heat, constant, to IEC 60068-2-70 Damp heat, constant, t	Lifespan, mechanical			
Climatic proofing Ambient temperature Open C - 25 - 450 Enclosed C - 25 - 40 Mounting position Mounting position Mechanical shock resistance (IEC/EN 60068-2-77) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module g 10 N/C contact N/C contact g 10 N/C contact f 10 N/C contact f 10 N/C contact f 10 N/C contact f 10 Degree of Protection against direct contact when actuated from front (EN 50274) Altitude m 10 Meight 10 De operated kg 0.211 Terminal capacities are in the interest and in the minal shock in the minals Aliman and interest and in the contact when actual and in the conta	DC operated	Operations	x 10 ⁶	20
Ambient temperature Open °C -25 - +50 Enclosed °C -25 - 40 Mounting position Mounting position Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module N/C contact N/C contact Opere of Protection Protection against direct contact when actuated from front (EN 50274) Altitude DC operated Terminal capacities Damp heat, cyclic, to IEC 60068-2-30 app heat, cyclic, to IEC 60068-2-30 Damp heat, cyclic, to IEC 60068-2-30 app app heat, cyclic, to IEC 60068-2-30 app app app app app app app app app ap	Maximum operating frequency	Operations/h		9000
Open °C -25 - 50 Enclosed °C -25 - 40 Mounting position Mounting position Mounting position Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module g 10 N/O contact g 10 N/C contact g 10 N/C contact l g 10 Protection against direct contact when actuated from front (EN 50274) Altitude m m max. 2000 m Weight DC operated b kg 0.211 Terminal capacities mounting position **C -25 - 40 **As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with except vertical with terminals A1/A2 at the bottom As required, except vertical with except vertical with terminals A1/A2 at the bottom As required, except vertical with except vertical vertica	Climatic proofing			
Enclosed Mounting position Mounting position Mounting position Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module N/O contact N/C contact N/C contact Protection against direct contact when actuated from front (EN 50274) Altitude DC operated DC operated Terminal capacities Protection Mounting position As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with except and excep	Ambient temperature			
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Mounting position Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module N/C contact N/C contact Degree of Protection Protection against direct contact when actuated from front (EN 50274) Altitude DC operated DC operated Resistance (IEC/EN 60068-2-27) As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with terminals A1/A2 at the bottom As required, except vertical with except and except an	Enclosed		°C	- 25 - 40
Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module N/C contact N/C contact N/C contact Protection Protection against direct contact when actuated from front (EN 50274) Altitude DC operated Reg Reg Reg Reg Reg Reg Reg R	Mounting position			
Half-sinusoidal shock, 10 ms Basic unit with auxiliary contact module N/O contact N/C contact N/C contact Protection Protection against direct contact when actuated from front (EN 50274) Altitude DC operated DC operated Terminal capacities N/B ontact module g 10 10 10 10 10 10 10 10 10 10 10 10 10	Mounting position			As required, except vertical with terminals A1/A2 at the bottom
Basic unit with auxiliary contact module N/O contact N/C contact Degree of Protection Altitude DC operated DC operat	Mechanical shock resistance (IEC/EN 60068-2-27)			
N/O contact N/C contact Degree of Protection Protection against direct contact when actuated from front (EN 50274) Altitude Weight DC operated Terminal capacities D () 10 10 10 120 120 120 120 120	Half-sinusoidal shock, 10 ms			
N/C contact g 8 Degree of Protection Protection against direct contact when actuated from front (EN 50274) Altitude Meight DC operated Terminal capacities B 8 P20 Finger and back-of-hand proof m max. 2000 m max. 2000 m Against direct contact when actuated from front (EN 50274) m max. 2000 m max. 2000 m mm² Left direct contact when actuated from front (EN 50274) mm² Left direct contact when actuated from front (EN 50274) mm² I provided Max. 2000 m mm² Left direct contact when actuated from front (EN 50274) mm² Left direct conta	Basic unit with auxiliary contact module		g	
Degree of Protection Protection against direct contact when actuated from front (EN 50274) Altitude Meight DC operated Terminal capacities IP20 Finger and back-of-hand proof max. 2000 m	N/O contact		g	10
Protection against direct contact when actuated from front (EN 50274) Altitude Meight DC operated Terminal capacities Terminal capacities Finger and back-of-hand proof m max. 2000 m kg 0.211 Terminal capacities	N/C contact		g	8
Altitude m max. 2000 m Weight DC operated kg 0.211 Terminal capacities mm ²	Degree of Protection			IP20
Weight DC operated kg 0.211 Terminal capacities mm ²	Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
DC operated kg 0.211 Terminal capacities mm ²	Altitude		m	max. 2000 m
Terminal capacities mm ²	Weight			
•	DC operated		kg	0.211
Screw terminals	Terminal capacities		mm^2	
	Screw terminals			

Solid		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Florible with format-			2 X (0.75 - 2.5)
Flexible with ferrule		mm ²	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			
Interlocked opposing 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	600
Safe isolation to EN 61140			
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			
at 50 °C	I _{th} =I _e	Α	10
AC-15			
220 V 230 V 240 V	I _e	A	6
380 V 400 V 415 V	l _e	Α	3
500 V		A	1.5
DC current	l _e	^	1.0
Notes			Switch-on and switch-off conditions based on DC-13, time constant as specified.
			Switch-on and Switch-on conditions based on DC-13, time constant as specified.
DC L/R ≤ 15 ms Contacts in series:		A	
1	24 V	A	2.5
2	60 V		2.5
3	110 V	A	1.5
3	220 V	A	0.5
Control circuit reliability	Failure rate		
	railure rate	λ	$<10^{-8}$, $<$ 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	
380 V 400 V 415 V		PKZM0	4
Short-circuit protection maximum fuse			
500 V		A gG/gL	
500 V		A fast	10
Current heat loss at I _{th}			
DC operated		W	1.1
Magnet systems			
Voltage tolerance			
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 _c	0.7 - 1.3
Power consumption			
DC operation			

DC operated	Pull-in = sealing	W	2.3
duty factor		% DF	100
Changeover time at 100 % U_S (recommended value)			
DC operated closing delay		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			
Pilot Duty			
AC operated			A600
DC operated			P300
General Use			
AC		V	600
AC		Α	10
DC		V	250
DC		Α	0.5

Design verification as per IEC/EN 61439

Design verincation as per illo/liv 01433			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	6
Heat dissipation per pole, current-dependent	P _{vid}	W	0.4
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	2.3
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	50
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 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 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	24 - 24	
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		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	
Number of auxiliary contacts as change-over contact		0	
With LED indication		No	
Suitable for manual operation		No	