# **DATASHEET - ZE-4**



Overload relay, Ir= 2.4 - 4 A, 1 N/O, 1 N/C, Direct mounting



Part no.ZE-4Catalog No.014518Alternate CatalogXTOM004AC1No.EL-Nummer4130481(Norway)

## **Delivery program**

Product range			ZE overload relays for mini contactor relays
Phase-failure sensitivity			IEC/EN 60947, VDE 0660 Part 102
Description			Test/off button Reset pushbutton manual/auto Trip-free release
Mounting type			Direct mounting
Setting range			
Overload releases	I <sub>r</sub>	А	2.4 - 4
Contact sequence			97 95 $ \begin{array}{c} 97 95 \\ 1 \\ 1 \\ 1 \\ 1 \\ 2 \\ 4 \\ 6 \\ 98 \\ 96 \end{array}$
Auxiliary contacts			
N/O = Normally open			1 N/O
N/C = Normally closed			1 N/C
For use with			DILEM DIULEM/21/MV
Short-circuit protection			
Type "1" coordination	gG/gL	A	35
Type "2" coordination	gG/gL	A	10
Nataa			

### Notes

Overload trigger: tripping class 10 A

Short circuit protection: observe the maximum permissible fuse of the contactor with direct device mounting.

Suitable for protection of Ex e-motors



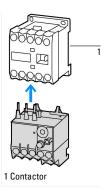
II(2)G [Ex d] [Ex e] [Ex px]

PTB 10 ATEX 3014

Observe manual MN03407003Z-DE/EN.

### Notes

When fitted directly to the contactor a clearance of at least 5 mm is required between the overload relays.



### Technical data General

General			
Standards			IEC/EN 60947, VDE 0660, UL, CSA
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
			Operating range to IEC/EN 60947 PTB: -5 °C - +55 °C
Open		°C	-25 - +50
Enclosed		°C	- 25 - 40
Temperature compensation			Continuous
Weight		kg	0.077
Mechanical shock resistance		g	10 Sinusoidal Shock duration 10 ms
Degree of Protection			IP20
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
Altitude		m	Max. 2000
Main conducting paths			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V	690
Rated operational voltage	U <sub>e</sub>	V AC	690
Safe isolation to EN 61140			
Between auxiliary contacts and main contacts		V AC	300
Between main circuits		V AC	300
Temperatur compensation residual error > 40 °C			≦ 0.25 %/K
Current heat loss (3 conductors)			
Lower value of the setting range		W	2.5
Maximum setting		W	5.7
Terminal capacities		mm <sup>2</sup>	
Solid		mm <sup>2</sup>	1 x (0.75 - 2.5)
Flexible with ferrule		mm <sup>2</sup>	1 x (0.5 - 1.5)
Solid or stranded		AWG	18 - 14
Terminal screw			M3.5
Tightening torque		Nm	1.2
Stripping length		mm	8
Tools			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 x 5.5
Auxiliary and control circuits			
Rated impulse withstand voltage	U <sub>imp</sub>	V	4000
Overvoltage category/pollution degree			111/3
Terminal capacities		mm <sup>2</sup>	
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 (0.5 - 1.5)

			2 x (0.5 - 1.5)
Solid or stranded		AWG	2 x (18 - 12)
Terminal screw			M3.5
Tightening torque		Nm	1.2
Stripping length		mm	8
Tools			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	0.8 × 5.5
Rated insulation voltage	Ui	V AC	500
Rated operational voltage	U <sub>e</sub>	V AC	500
Safe isolation to EN 61140			
between the auxiliary contacts		V AC	250
Conventional thermal current	I <sub>th</sub>	А	6
Rated operational current	le	А	
AC-15			
Make contact			
120 V	Ι <sub>e</sub>	Α	1.5
220 V 230 V 240 V	Ι <sub>e</sub>	А	1.5
380 V 400 V 415 V	Ι <sub>e</sub>	А	0.7
500 V	Ι <sub>e</sub>	А	0.5
Break contact			
120 V	Ie	А	1.5
220 V 230 V 240 V	Ie	А	1.5
380 V 400 V 415 V	Ie	A	0.7
500 V	Ie	A	0.5
DC L/R ≦ 15 ms			
			Switch-on and switch-off conditions based on DC-13, time constant as specified.
24 V	Ie	A	0.9
60 V	Ie	A	0.75
110 V	I <sub>e</sub>	A	0.4
220 V	۱ <sub>e</sub>	A	0.2
Short-circuit rating without welding	-		
max. fuse		A gG/gL	4
Notes			

#### Notes Ambient air temperature: Operating range to IEC/EN 60947, PTB: -5°C to +50°C Main circuits terminal capacity solid and flexible conductors with ferrules: When using 2 conductors use equal cross-sections. Rating data for approved types Auxiliary contacts Pilot Duty D300 AC operated DC operated R300 General Use AC ۷ 240 V/1,5 A 600 V/0,6 A Short Circuit Current Rating SCCR **Basic Rating** Notes CB for max. 480 V SCCR kA 5 А 15 max. Fuse max. CB 15 А

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

Technical data for design verification				
Rated operational current for specified h	eat dissipation	In	А	4
Heat dissipation per pole, current-depen	dent	P <sub>vid</sub>	W	1.9

10.11 Short-circuit rating Image: Constraint of the specifications for the switchgear multiple of t	Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	5.7
Operating ambient temperature min.     Construction       Operating ambient temperature max.     102       IEC/EN 61439 design verification     102       102.2 Strength of materials and parts     Meets the product standard's requirements.       102.2.2 Overification of terisstance     Meets the product standard's requirements.       102.2.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects     Meets the product standard's requirements.       102.2.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects     Meets the product standard's requirements.       102.2.4 Resistance to ultra-violet (UV) radiation     Meets the product standard's requirements.       102.2.5 Urifing     Does not apply, since the entire switchgear needs to be evaluated.       102.7 Inscriptions     Meets the product standard's requirements.       103.2 Begree of protection of ASSEMBLIES     Does not apply, since the entire switchgear needs to be evaluated.       104.2 Clearances and creepage distances     Is the panel builder's responsibility.       103.2 Degree of protection of solutions     Is the panel builder's responsibility.       104.2 Internal electric strength     Is the panel builder's responsibility.       105.2 Protection against electrich shock     Does not apply, since the entire switchg	Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Operating ambient temperature max.     C     50       IEC/EN 61439 design verification	Heat dissipation capacity	P <sub>diss</sub>	W	0
IECE/N 61438 design verification   Image: Comparison of the second state of the se	Operating ambient temperature min.		°C	-25
10.2 Strength of materials and parts     10.2.2 Corrosion resistance     10.2.2.3.1 Verification of thermal stability of enclosures     10.2.3.2 Verification of resistance of insulating materials to normal heat     10.2.3.2 Verification of resistance of insulating materials to abnormal heat     10.2.3.2 Verification of resistance of insulating materials to abnormal heat     10.2.3.3 Verification of resistance of insulating materials to abnormal heat     10.2.4 Resistance to ultra-violet (UV) radiation     10.2.5 Lifting     10.2.6 Mechanical impact     10.2.7 Inscriptions     10.3 Degree of protection of ASSEMBLIES     10.3 Degree of protection of ASSEMBLIES     10.5 Protection against electric shock     10.6 Incorporation of switching devices and components     10.7 Internal electric is shock     10.8 Incorporation of switching devices and components     10.9.2 Power-frequency electric strength     10.8 Incorporation of switching devices maged     10.9.2 Power-frequency electric strength     10.8 Incorporation of existance of insulating material     10.9.2 Power-frequency electric strength     10.8 Incorporation of switching devices and components     10.9 Incurporation of witching devices and components     10.8 Incorporation of switching devices and components </td <td>Operating ambient temperature max.</td> <td></td> <td>°C</td> <td>50</td>	Operating ambient temperature max.		°C	50
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	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.	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) / Thermal overload relay (EC000106)				
Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Thermal overload relay (ecl@ss10.0.1-27-37-15-01 [AKF075014])				
Adjustable current range	А	2.4 - 4		
Max. rated operation voltage Ue	V	690		
Mounting method		Direct attachment		
Type of electrical connection of main circuit		Screw connection		
Number of auxiliary contacts as normally closed contact		1		
Number of auxiliary contacts as normally open contact		1		
Number of auxiliary contacts as change-over contact		0		
Release class		CLASS 10		
Reset function input		No		
Reset function automatic		Yes		
Reset function push-button		Yes		

# **Approvals**

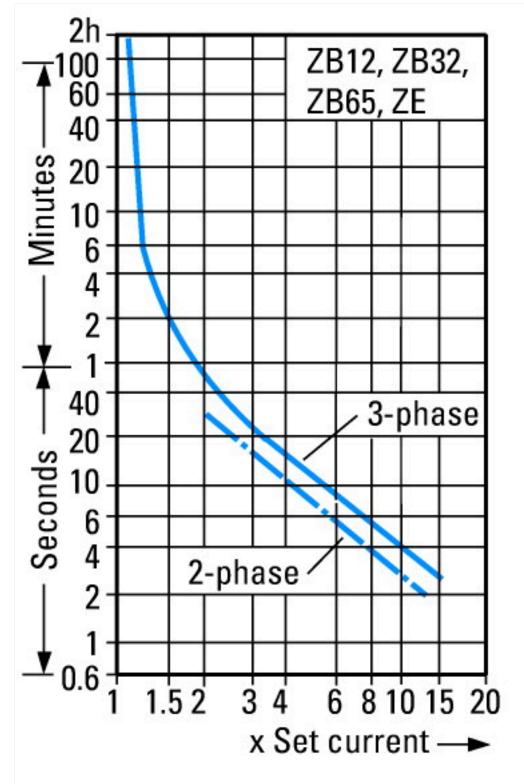
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Product Standards	UL 508; CSA-C22.2 No. 14; IEC/EN 60947-4-1; IEC/EN 60947-5-1; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	12528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified

Specially designed for North America	
Suitable for	
Max. Voltage Rating	
Degree of Protection	

# **Characteristics**

Branch circuits 600 V AC

IEC: IP20, UL/CSA Type: -



These tripping characteristics are mean values of the spreads at 20 °C ambient air temperature in a cold state.

Tripping time depends on response current.

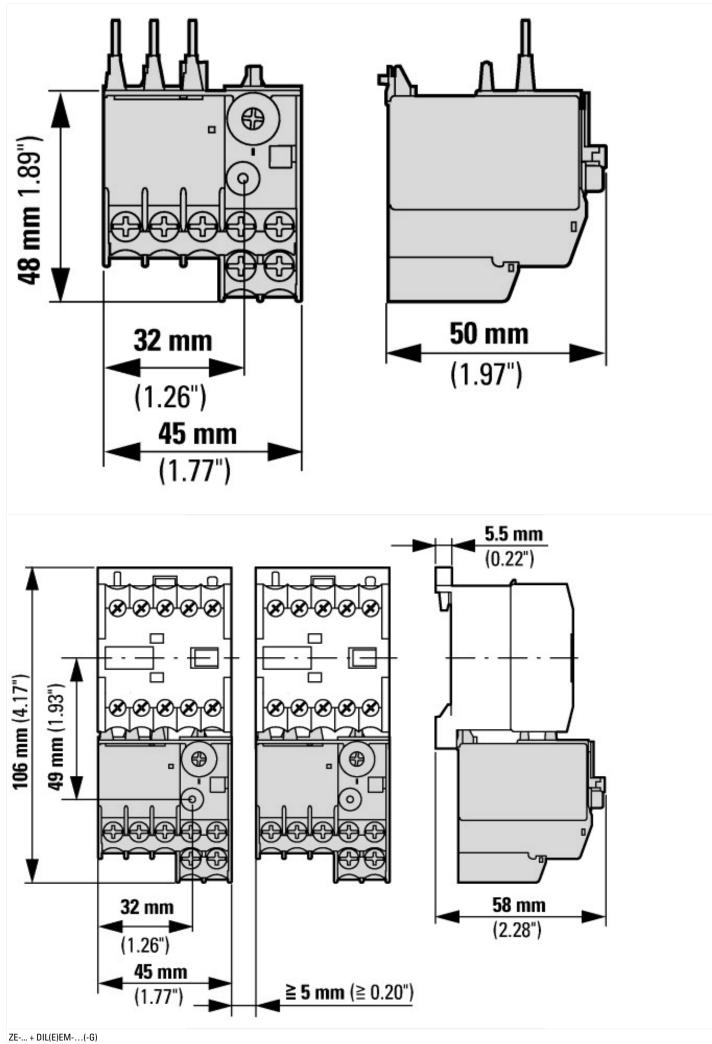
When the devices are at operational temperature the tripping time of the overload relay falls to approx. 25 % of the read off value.

1: Minimum level, 3-phase

2: Maximum level, 3-phase

3: Minimum marker, 2-phase

4: Highest marker, 2-phase



09/09/2020

IL03407007Z (AWA2300-0883) Overload relay

IL03407007Z (AWA2300-0883) Overload relay

lay https://es-assets.eaton.com/DOCUMENTATION/AWA\_INSTRUCTIONS/IL03407007Z2018\_03.pdf