

Overload relay,  $I_r = 9 - 12$  A, 1 N/O, 1 N/C, Direct mounting

**Part no.** ZE-12  
**Catalog No.** 014752  
**Alternate Catalog No.** XTOM012AC1  
**EL-Nummer (Norway)** 4110000

## 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		
<b>Setting range</b>	$I_r$	A	9 - 12
Overload releases			
<b>Auxiliary contacts</b>			
N/O = Normally open			1 N/O
N/C = Normally closed			1 N/C
For use with			DILEM DIULEM/21/MV
<b>Short-circuit protection</b>			
Type "1" coordination		gG/gL	A
			35
Type "2" coordination		gG/gL	A
			20

## 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)D [Ex p] [Ex t]

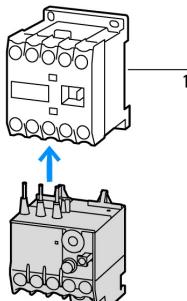
II(2)G [Ex d] [Ex e] [Ex px]

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.



1 Contactor

## Technical data

### 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		0.078
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	$U_{imp}$	V AC	6000
Oversupply category/pollution degree			III/3
Rated insulation voltage	$U_i$	V	690
Rated operational voltage	$U_e$	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	4.2
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	$U_{imp}$	V	4000
Oversupply category/pollution degree			III/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 x 5.5
Rated insulation voltage	$U_i$	V AC	500
Rated operational voltage	$U_e$	V AC	500

Safe isolation to EN 61140			
between the auxiliary contacts	V AC	250	
Conventional thermal current	$I_{th}$	A	6
Rated operational current	$I_e$	A	
AC-15			
Make contact			
120 V	$I_e$	A	1.5
220 V 230 V 240 V	$I_e$	A	1.5
380 V 400 V 415 V	$I_e$	A	0.7
500 V	$I_e$	A	0.5
Break contact			
120 V	$I_e$	A	1.5
220 V 230 V 240 V	$I_e$	A	1.5
380 V 400 V 415 V	$I_e$	A	0.7
500 V	$I_e$	A	0.5
DC L/R $\leq$ 15 ms			Switch-on and switch-off conditions based on DC-13, time constant as specified.
24 V	$I_e$	A	0.9
60 V	$I_e$	A	0.75
110 V	$I_e$	A	0.4
220 V	$I_e$	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			
AC operated		D300	
DC operated		R300	
General Use			
AC	V	240 V/1,5 A 600 V/0,6 A	
Short Circuit Current Rating	SCCR		
Basic Rating			CB for max. 480 V
Notes			
SCCR	kA	5	
max. Fuse	A	45	
max. CB	A	16	

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	12
Heat dissipation per pole, current-dependent	$P_{vid}$	W	1.4
Equipment heat dissipation, current-dependent	$P_{vid}$	W	4.2
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
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) / 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	A	9 - 12
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 A
Reset function input		No
Reset function automatic		Yes
Reset function push-button		Yes