DATASHEET - ZB12-1,6



Part no.

No.

Catalog No.

EL-Nummer

(Norway)

Alternate Catalog

Overload relay, ZB12, Ir= 1 - 1.6 A, 1 N/O, 1 N/C, Direct mounting, IP20

ZB12-1,6

XTOB1P6BC1

0004131831

278436



Similar to illustration

Delivery program

Product rangeoverload relay 2B up to 150 AProduct rangeIAccessoriesAccessoriesIAccessoriesFrame sizeIDeveload relay SectorPhase-failure sensitivityIIEC[N 00947, VDE 0080 Part 102DescriptionIIEC[N 00947, VDE 0080 Part 102Mounting typeIDeveload relay SectorContract sequenceIINO = Normally openIINO = Normally openIINO = Normally openIINU = Normally openIINU = Normally openIINU = Normally openIIStort-circuit protectionIIType "t" coordinationSigleAStort-circuit protectionSigleAType "t" coordinationSigleAIf type "t" coordinationSigleASigleASigleASigleA	Bonnony program			
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Frame size Image: Size ZB12 Phase-failure sensitivity ECKN 60847, VDE 0660 Part 102 Description Image: Size of Failure Sensitivity Mounting type Image: Size of Failure Sensitivity Mounting type Image: Size of Failure Sensitivity Contact sequence Image: Size of Failure Sensitivity N/O = Normally open Image: Size of Failure Sensitivity N/C = Normally closed Image: Size of Failure Sensitivity For use with Image: Size of Failure Sensitivity Short-circuit protection Image: Size of Failure Sensitivity Type "1" coordination Siglet A Type "1" coordination Siglet A	Product range			Accessories
Phase-failure sensitivity EC/EN 80947, VDE 0600 Part 102 Description Isolation Mounting type Isolation Contact sequence Isolation N/O = Normally open Isolation N/C = Normally closed Isolation For use with Isolation Type "1" coordination Isolation Type "1" coordination Isolation Isolation Isolation Isolation Isolation Isolation Isolation	Accessories			Overload relays
Description Iest off button Mounting type Direct mounting Image: Sect pushbutton manual/auto D	Frame size			ZB12
Mounting type Reset pushbutton manual/auto Trip-free release Mounting type Direct mounting Order to mounting Direct mounting Contact sequence I A 1 - 1.6 Auxiliary contacts I I I I N/O = Normally open I I I I N/C = Normally closed I I I I For use with DIMM polition DIMM politing, DILM12, DILM15, DILM12, DILM15, DILM12, DILM15, DILM12, DILM15, DILM12, DILM12, DILM12, DILM15, DILM12, DILM12, DILM12, DILM15, DILM12, DILM	Phase-failure sensitivity			IEC/EN 60947, VDE 0660 Part 102
IrA1-1.6Contact sequenceIrAIrAuxiliary contactsIrIrIrN/0 = Normally openIrIrIrN/C = Normally closedIrIrIrFor use withIrIrIrShort-circuit protectionIrIrIrType "1" coordinationIrIrIrShort-circuit protectionIrIrIrShort-circuit protectionIrIrIr <t< td=""><td>Description</td><td></td><td></td><td>Reset pushbutton manual/auto</td></t<>	Description			Reset pushbutton manual/auto
Contact sequence Image: Contact sequence Contact sequence Image: Contact sequence Auxiliary contacts Image: Contact sequence N/D = Normally open Image: Contact sequence N/C = Normally closed Image: Contact sequence For use with Image: Contact sequence Short-circuit protection Image: Contact sequence Type "1" coordination G/G/L Auxiliary contacts Image: Contact sequence Image: Contact sequence Image: Contact sequence Image: Contact sequence <td< td=""><td>Mounting type</td><td></td><td></td><td>Direct mounting</td></td<>	Mounting type			Direct mounting
Auxiliary contactsImage: product of the second	с‡	l _r	A	1 - 1.6
N/O = Normally openI N/ON/C = Normally closedI N/CFor use withIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Contact sequence			
N/C = Normally closedIN/CFor use withIN/CShort-circuit protectionIN/CType "1" coordinationIN/CImage: Solution of the protectionImage: Solution of the protection of the protecti	Auxiliary contacts			
For use with DILM7, DILM9, DILM12, DILM15, DILM15, DILM12, DILM15, DILM12, DILM1	N/O = Normally open			1 N/O
Short-circuit protection Image: Vision of the second sec	N/C = Normally closed			1 N/C
Type "1" coordination gG/gL A 25	For use with			DIULM7, DIULM9, DIULM12, SDAINLM12, SDAINLM16,
ф	Short-circuit protection			
Type "2" coordination gG/gL A 6		gG/gL	A	25
	Type "2" coordination	gG/gL	A	6

Notes

Overload release: tripping class 10 A

short-circuit protective device: Observe the maximum permissible fuse of the contactor with direct device mounting.

Suitable for protection of Ex e-motors.

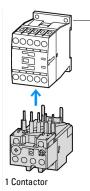


II(2)G [Ex d] [Ex e] [Ex px], II(2)D [Ex p] [Ex t]

PTB 10 ATEX 3010

Observe manual MN03407005Z-DE/EN.

Notes Fitted directly to the contactor



1

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 - +55
Enclosed		°C	- 25 - 40
Temperature compensation			Continuous
Weight		kg	0.141
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
Overvoltage category/pollution degree			111/3
Rated insulation voltage	Ui	V	690
Rated operational voltage	U _e	V AC	690
Safe isolation to EN 61140			
Between auxiliary contacts and main contacts		V AC	440
Between main circuits		V AC	440
Temperatur compensation residual error > 40 $^{\rm o}{\rm C}$			≦ 0.25 %/K
Current heat loss (3 conductors)			
Lower value of the setting range		W	2.2
Maximum setting		W	5.7
Terminal capacities		mm ²	
Solid		mm ²	1 x (1 - 6) 2 x (1 - 6)
Flexible with ferrule		mm ²	1 x (1 - 4) 2 x (1 - 4)
Solid or stranded		AWG	18 - 8
Terminal screw			M4
Tightening torque		Nm	1.8
Stripping length		mm	10
Tools			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	1 x 6
Auxiliary and control circuits			
Rated impulse withstand voltage	U _{imp}	V	4000
Overvoltage category/pollution degree			111/3
Terminal capacities		mm ²	
Solid		mm ²	1 x (0.75 - 4)

			2 x (0.75 - 4)
Flexible with ferrule		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Solid or stranded		AWG	2 x (18 - 14)
Terminal screw			M3.5
Tightening torque		Nm	1.2
Stripping length		mm	8
Tools			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	1 x 6
Rated insulation voltage	Ui	V AC	500
Rated operational voltage	U _e	V AC	500
Safe isolation to EN 61140			
between the auxiliary contacts		V AC	240
Conventional thermal current	I _{th}	А	6
Rated operational current	le	А	
AC-15			
Make contact			
120 V	Ι _e	А	1.5
220 V 230 V 240 V	Ie	А	1.5
380 V 400 V 415 V	I _e	А	0.5
500 V	I _e	А	0.5
Break contact			
120 V	۱ _e	A	1.5
220 V 230 V 240 V	I _e	A	1.5
380 V 400 V 415 V	I _e	A	0.9
500 V	l _e	A	0.8
DC L/R ≦ 15 ms			
			Switch-on and switch-off conditions based on DC-13, time constant as specified.
24 V	le	A	0.9
60 V	Ι _e	A	0.75
110 V	l _e	A	0.4
220 V	l _e	A	0.2
Short-circuit rating without welding	·		
max. fuse		A gG/gL	6
Notes		0-70-	

Notes

Notes Ambient air temperature: Operating range to IEC/EN 60947, PTB: -5°C to +55°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		B300 at opposite polarity B600 at same polarity
DC operated		R300
Short Circuit Current Rating	SCCR	
600 V High Fault		
SCCR (fuse)	kA	100
max. Fuse	А	3 Class J/CC

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	А	1.6
Heat dissipation per pole, current-dependent	P _{vid}	W	1.9
Equipment heat dissipation, current-dependent	P _{vid}	W	5.7
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	55
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 leafiet (IL) is observed.

Technical data ETIM 7.0

Low-voltage industrial components (EG000017) / Thermal overload relay (EC000106)

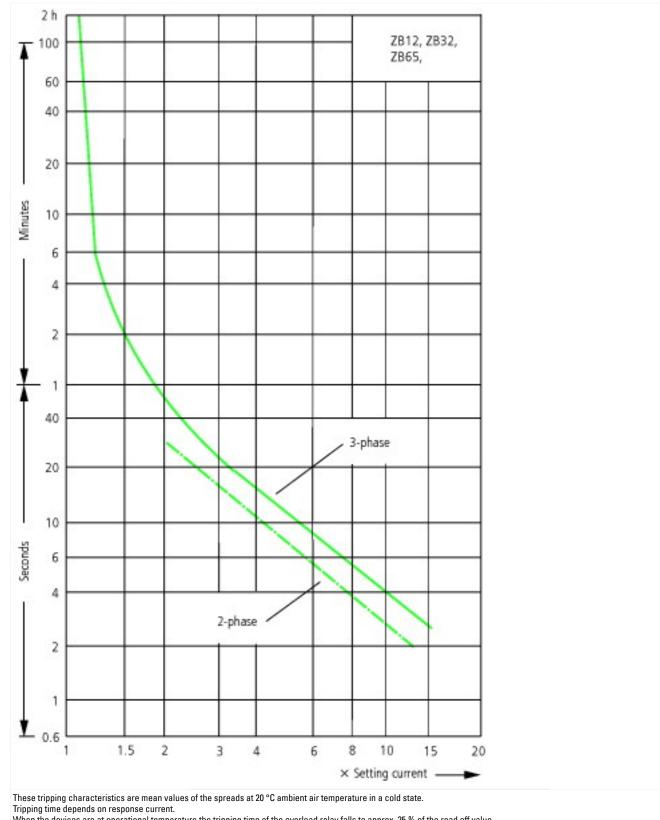
Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Thermal overload relay (ecl@ss10.0.1-27-37-15-01 [AKF075014])		
Adjustable current range	А	1 - 1.6
Max. rated operation voltage Ue	V	690
Mounting method		Direct attachment
Type 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

- pp	
Product Standards	IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; 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	No
Suitable for	Branch circuits

Max. Voltage Rating	600 V AC
Degree of Protection	IEC: IP20, UL/CSA Type: -

Characteristics



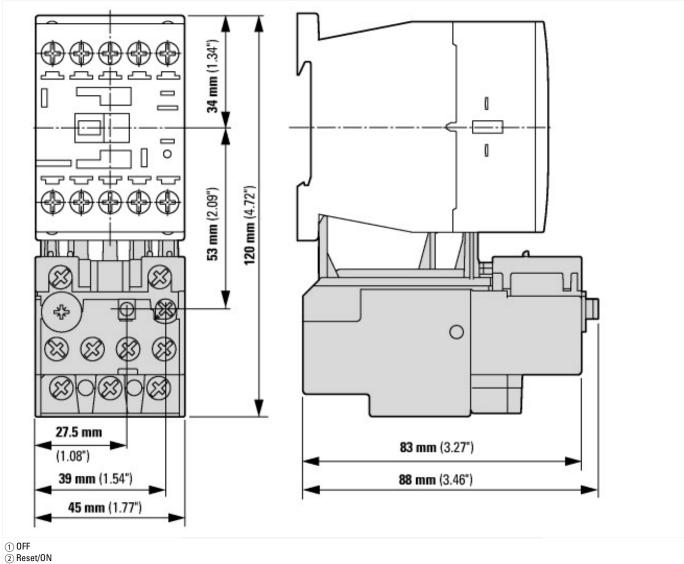
When the devices are at operational temperature the tripping time of the overload relay falls to approx. 25 % of the read off value.

1: Minimum level, 3-phase

2: Maximum level, 3-phase

3: Minimum marker, 2-phase 4: Highest marker, 2-phase

Dimensions



Additional product information (links)

	- 1 - 7	
IL03407015Z (AWA2300-2114) Overload relay		
IL03407015Z (AWA2300-2114) Overload relay	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407015Z2020_06.pdf	
IL03407195Z Sealable shroud		
IL03407195Z Sealable shroud	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407195Z2018_06.pdf	
MN03407004Z (AWB2300-1527D/GB) ZB12/XTOBBC1 and ZB32/XTOBCC1 overload relays, overload monitoring of Ex e motors		
MN03407004Z (AWB2300-1527D/GB) ZB12/ XTOBBC1 and ZB32/XTOBCC1 overload relays, overload monitoring of Ex e motors - Deutsch / English	https://es-assets.eaton.com/DOCUMENTATION/AWB_MANUALS/MN03407004Z_DE_EN.pdf	