

Part no.

Article no.

Catalog No.

ZB12-16 290168 XTOB016BC1



Delivery program

Product range			Overload relay ZB up to 150 A
Frame size			ZB12
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
द	I _r	A	12 - 16
Contact sequence			$\begin{array}{c c} & & & & & & & & \\ \hline & & & & & & \\ 2 & 4 & 6 & 98 & 96 & A2 & 14/ \\ & & & & & & & \\ 2 & 2 & 4 & 6 & 98 & 96 & A2 & 14/ \\ & & & & & & \\ & & & & & & \\ & & & & $
Auxiliary contacts			
N/O = Normally open			1 N/O
N/C = Normally closed			1 N/C
For use with			DILM7, DILM9, DILM12, DILM15, DIULM7, DIULM9, DIULM12, SDAINLM12, SDAINLM16, SDAINLM22
Short-circuit protection			
Type "1" coordination	gG/gL	A	50
Type "2" coordination	gG/gL	A	25
Notes			

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 EEx°e-motors.



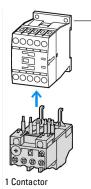
II(2)G [Ex d] [Ex e] [Ex px], II(2)D [Ex p] [Ex t]

PTB 04 ATEX 3022

Observe manual AWB2300-1527D/GB.

Notes

Fitted directly to the contactor



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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	0.15
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
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 °C			≦ _{0.25 %/K}
Current heat loss (3 conductors)			
Lower value of the setting range		W	3
Maximum setting		W	5.4
Terminal capacities		mm ²	
Solid		mm ²	2 x (1 - 6)
Flexible with ferrule		mm ²	2 x (1 - 4)
Solid or stranded		AWG	18 - 8
Terminal screw			M4
Tightening torque		Nm	1.8
Tools			
Pozidriv screwdriver		Size	2
Standard screwdriver		mm	1 x 6
Auxiliary and control circuits			
Rated impulse withstand voltage	U _{imp}	V	6000
Overvoltage category/pollution degree			11/3
Terminal capacities		mm ²	
Solid		mm ²	2 x (0.75 - 4)
Flexible with ferrule		mm ²	2 x (0.75 - 2.5)
Solid or stranded		AWG	2 x (18 - 14)

TopicImage: space of the series o	Terminal screw			M3.5
Paidri varewdriverImageSize	Tightening torque		Nm	0.8 - 1.2
Standard screwdriverininininRated overdition to lotingVAC50Rated operational voltageVAC50Safe isoliton to Kb 1140VAC50between the auxiliary contactsVAC24International currentVAC74Rated operational currentIn74Rated operational currentIn74Make contactIn5120 VIn5200 V200 V200 V200 V200 V200 V200 V200In74International currentIn849International CurrentIn8415International CurrentIn8415International CurrentIn8415International CurrentIn8415International CurrentIn8415International CurrentIn1515International Curre	Tools			
Relational on valueInVACSolRelational on valueInSolSolBated operational voltageInSolSolbetween the auxiliary contactsInVACValueConventional thermal currentInSolSolRelational currentInInSolAct 15InInSolAct 20 v230 v240 v240 v240 v240 v240 v240 v240 v24	Pozidriv screwdriver		Size	2
Rate operational voltageUpVACBolSetional termsVaVaVaDetween the auxiliary contactsNaVaVaConventional termsNaASaRated operational currentIVaSaAct-15IIIMake contactISaSa20 V 200 V240 VAISaSa300 V400 V45 VAISaSa300 V400 V45 VAISaSa20 V230 V240 VAISaSa300 V400 V45 VAIISa300 V400 V45 VAIISa300 V400 V45 VAIII300 V400 V4	Standard screwdriver		mm	1 x 6
She is is is in the saviliary contactsImage: same same same same same same same same	Rated insulation voltage	Ui	V AC	500
between the auxiliary contactsImage: NetworkVectorVec	Rated operational voltage	U _e	V AC	500
Conventional thermal current Index A A B Rated operational current IA A A AC-15 IA A Index	Safe isolation to EN 61140			
Add operational current Image: Particular State operational current Image: Particular State operational current AC-15 Image: Particular State operational current Image: Particular State operational current Make contact Image: Particular State operational current Image: Particular State operational current 120 V Image: Particular State operational current Image: Particular State operational current Image: Particular State operational State operational Current 120 V Image: Particular State operational Current Image: Particular State operational Current Image: Particular State operational Current 120 V Image: Particular State operational Current Image: Particular State operational Current Image: Particular State operational Current 120 V Image: Particular State operational Current Image: Particular State operational Current Image: Particular State operational Current 120 V Image: Particular State operational Current Image: Particular State operational Current Image: Particular State operational Current 120 V Image: Particular State operational Current Image: Particular State operational Current Image: Particular State operational Current 120 V Image: Particular State operational Current Image: Partin State operational Current <	between the auxiliary contacts		V AC	240
AC-15 Make contact Mode Met	Conventional thermal current	I _{th}	А	6
Make contactImage: set of the	Rated operational current	le	А	
IQVIQAAIQVIQAIIQVIQAIIQVIQAIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQVIQIIIQUIQIIIQUIQIIIQUIQIIIQUIQIIIQUIQIIIQUIQIIIQUIQUIIIQUIQUIIIQUIQUIIIQUIQUIIIQUIQUIIIQUIQUIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQUIIIIQU <td>AC-15</td> <td></td> <td></td> <td></td>	AC-15			
20 V 230 V 240 V In In In In In In In In In In In In In In	Make contact			
العام المراحة العام المراحة العام المراحة العام المراحة العام المراحة	120 V	l _e	А	1.5
бой к к к к Бой К 5 <td>220 V 230 V 240 V</td> <td>le</td> <td>А</td> <td>1.5</td>	220 V 230 V 240 V	le	А	1.5
Break contact Image:	380 V 400 V 415 V	le	А	0.5
120 V 120 V <td< td=""><td>500 V</td><td>le</td><td>А</td><td>0.5</td></td<>	500 V	le	А	0.5
20 V 230 V 240 V Ie A 15 380 V 400 V 415 V Ie A 09 500 V Ie A 08 60 V Ie A 09 60 V Ie A 09 10 V Ie A 09 220 V Ie A 09 10 V Ie A 09 200 V Ie A 02 10 V Ie Ie 02 10 V Ie Ie 02 10 V Ie Ie 02	Break contact			
380 ¥ 400 ¥ 415 ¥ Ie A .9 500 V Ie A .8 DC-13 L/R - 15 ms - - - 24 V Ie A .9 60 V Ie A 110 V Ie A 220 V Ie A Nets Ie A Nets Ie Ie	120 V	le	А	1.5
500 V Index second	220 V 230 V 240 V	le	А	1.5
DC-13 L/R - 15 ms P P P 24 V le A .9 .9 60 V le A .9 .9 10 V le A .9 .9 220 V le A .9 .9 Notes Nets .9 .9 .9 Notes .9 .9 .9 .9	380 V 400 V 415 V	le	А	0.9
24V A A 60V B A 10V B A 220V B A Notes B A Notes A A	500 V	le	А	0.8
60 V Ie A .75 110 V Ie A .40 220 V Ie A .40 Notes Ie A .40 Short-cruit rating without welding Ie Ie Ie	DC-13 L/R - 15 ms			
110 V Ie A 0.4 220 V Ie A 0.2 Notes Ie A Rated operational current DC-13, 60 V: N/O auxiliary contact 0.6 A Short-circuit rating without welding Image: State S	24 V	le	А	0.9
220 V Ie A 0.2 Notes Notes A A Short-circuit rating without welding A A	60 V	le	А	0.75
Notes Notes Short-circuit rating without welding Image: Constraint of the second seco	110 V	le	А	0.4
Short-circuit rating without welding	220 V	le	А	0.2
	Notes			Rated operational current DC-13, 60 V: N/O auxiliary contact 0.6 A
max. fuse A gG/gL 6	Short-circuit rating without welding			
	max. fuse		A gG/gL	6

Design verification as per IEC/EN 61439

Design vermeation as per 120/214 01455			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	А	16
Heat dissipation per pole, current-dependent	P _{vid}	W	1.8
Equipment heat dissipation, current-dependent	P _{vid}	W	5.4
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 leaflet (IL) is observed.

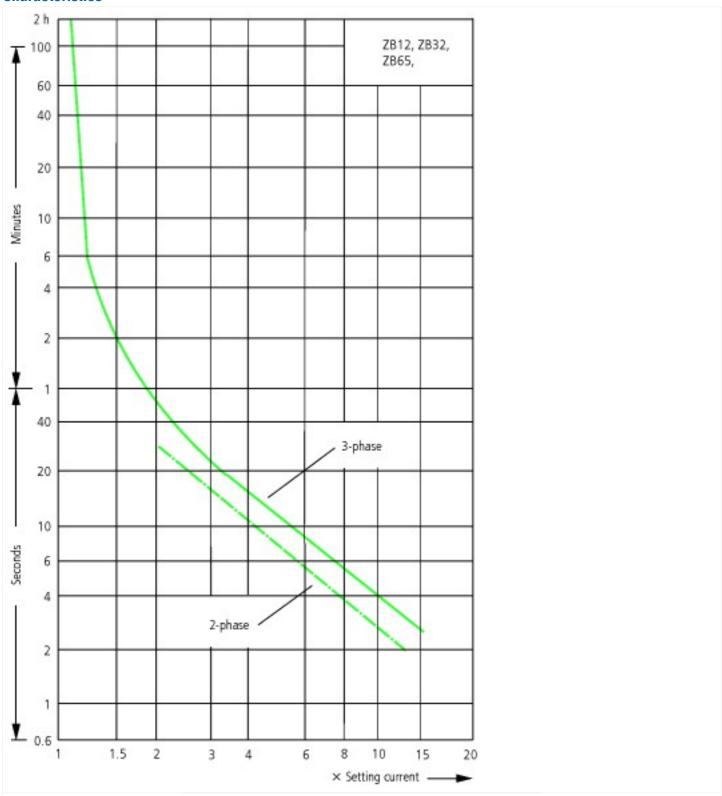
Technical data ETIM 6.0

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@ss8.1-27-37-15-01 [AKF075011])		
Adjustable current range	А	12 - 16
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

Approvals

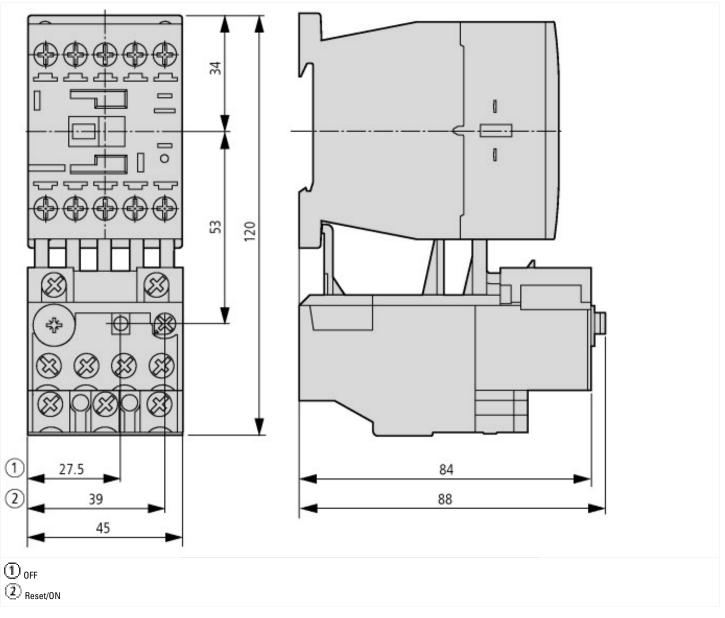
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Product Standards	UL 508; CSA-C22.2 No. 14; IEC/EN 60947-4-1; IEC/EN 60947-5-1; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	12528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Specially designed for North America	No
Suitable for	Branch circuits
Max. Voltage Rating	600 V AC
Degree of Protection	IEC: IP20, UL/CSA Type: -





These tripping characteristics are mean values of the spread at 20 °C ambient temperature in a cold state. Tripping time depends on response current. On devices at operating temperature the tripping time of the overload relay drops to approx. 25 % of the read value. Specific characteristics for each individual setting range can be found in the manual.

Dimensions



Additional product information (links)

IL03407015Z (AWA2300-2114) Overload relay

IL03407015Z (AWA2300-2114) Overload relay ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407015Z2014_08.pdf

ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407195Z2011_06.pdf

IL03407195Z Sealable shroud IL03407195Z Sealable shroud

MN03407004Z (AWB2300-1527D/GB) ZB12/XT0B...BC1 and ZB32/XT0B...CC1 overload relays, overload monitoring of Ex e motors

MN03407004Z (AWB2300-1527D/GB) ZB12/ XTOB...BC1 and ZB32/XTOB...CC1 overload relays, overload monitoring of Ex e motors -Deutsch / English ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN03407004Z_DE_EN.pdf