

BZ903T Series Minimum Voltage Relays 110VDC



* Device appearance may change based on the specific variant ordered. Mating connector not included in scope of delivery.

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Functionality and Features



Tracking of Two Voltage Levels

The level of the supply voltage present at pins 7 and 8 are continuously monitored, and their current state is signaled using two switching relay contacts, controlled by relays K1 and K2.

Common Pick-Up Voltage

Both channels K1 and K2 share a single pick-up voltage, above which both relays are enabled. The drop-off voltage is not shared between the channels, thus enabling applications like battery charge monitoring with load-shedding at different charge levels.

Input Filtering

To prevent short-term changes from falsely triggering the device, the battery voltage is low pass filtered before processing. The cut-off frequency is typically 0.5 Hz.

Customizable Voltage Levels

Pick-up and drop-off voltage levels are set during production based on the chosen device variant. New device variants can be created upon request in case different levels are required. Once a set of voltage-levels has been created, the configuration is given a new variant number and devices can henceforth be ordered using the new designation.

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Device Variants

Variant	Pick-Up	Drop-off K1	Drop-off K2
1	98.0 V	93.0 V	89.0 V
	Any voltage inside normal operational range.	Any voltage inside normal operational range and more than 1.0V below pick-up voltage.	Any voltage inside normal operational range and more than 1.0V below drop-off voltage of K1.

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Environment

Stresses exceeding these limits may lead to device malfunction or damage.

General

Height above sea level	AX (max. 2500m)	(EN 50125-1:2014 Tab. 1)
Operational temperature	OT4 (-40°C to +70°C)	(EN 50155:2017 Tab. 1)
Temperature rise on power on	ST1	(EN 50155:2017 Tab. 2)
Fast temperature changes	H1	(EN 50155:2017 Tab. 3)
Vibration and shock	Kat. 1, Class B	(EN 61373:2010)
Dirt and condensation	PD2 (light / non-conducting)	(EN 50124-1:2017 Tab. A.4)

Electrical

Nominal supply voltage(s) / V Permissible long-term deviation Permissible short-term deviation (< 1s) Interruption class Electromagnetic compatibility 110 -30% to +25% -40% to +40% S1 (none) EN 50121-3-2:2016 (EN 50155:2017)

Fire Protection

(Evaluated as grouped components according to EN 45545-2:2020)

	mounted inside of vehicle			mounted	outside o	of vehicle
	HL1	HL2	HL3	HL1	HL2	HL3
Combustible mass	38 g*	38 g*	38 g*	38 g*	38 g*	38 g*

 * 100% of combustible mass is rated according to R24.

A detailed report as well as test certificates are available upon request.



Technical Data

Circuitry or any contact-group to DIN-rail or neighboring device

1.6 W typ.
EN 50121-3-2:2016
+/- 0.4V typ.
0.5 Hz typ.
No
Yes
AgNi + 0.2 0.4 µm Au
1 mA 6 A typ.
≤ 100 mΩ
5 x 10 ⁶ operations
30 x 10 ³ operations 20 x 10 ³ operations 6 x 10 ³ operations 4A max.
1.5 kVDC / 1 min
1.5 kVDC / 1 min

1.5 kVDC / 1 min

Weight140 gMounting options35 mm DIN railMounting positionanyMounting distances:sidessidesnonetop / bottom5 mmRelay protection classRT III

Relay protection class	RT III
Housing material:	
body	PC
cover	PA66
Ingress protection	IP30

Dimensions

Mechanical Data





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Other Information

Front Panel



Caption:

Full device designation including variant information.

Connector:

8 pin 5.08mm pitch female WAGO receptacle of Series 231, compatible with side-locking clips. Pin 1 is indicated with a small triangle.



Recommended Mating Connector



Changes to this document

Date	Paragraph	Change
06.02.2024	Entire document	Update of datasheet layout.
06.02.2024	Title Page	Updated device image.
06.02.2024	Functionality and	Added more detailed explanation of threshold mechanic and device vari-
	Features	ants.
06.02.2024	Device Variants	Added more explicit documentation of available device variants accord-
		ing to updated datasheet layout.
06.02.2024	Environment	Extended temperature range to OT4.
		Added more fine-grained detail on environmental requirements acc. to
		EN 50155.
06.02.2024	Fire Protection	Added information on combustible mass.
06.02.2024	Technical Data	Added power consumption.
		Added details on threshold accuracy and configurability.
		Updated dimensional drawing to new layout standard.
06.02.2024	Other Information	Added details on front panel layout.
		Added information on connector and recommended mating part.
06.02.2024	Changes to this	Added this table.
	document	

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