



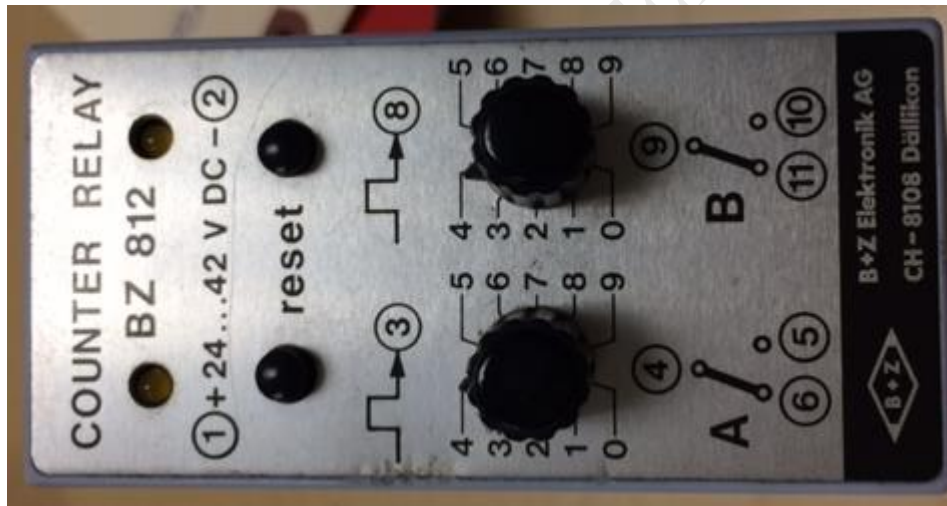
BZ812

Counter Relay

B+Z Art. Nr:860

According to standard EN 50155

Electronic devices in rolling stock



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Application / function

Application

This counter relay is designed as a pulse counting device. Inside the device are two identical units. Each unit can count up to 9 pulses and compare them with a preselected value. As soon as the counted pulses are identical with the preselected value, the built in relay becomes active and the LED goes on.

After powering up the device select the desired pulse amounts with the knobs at the front panel. Then press the RESET button. The counter now starts detecting and counting the pulses. When the selected values are reached and the relay became active, you need to reset the counter again to restart the process again.

Technical data

Type designation: **BZ812 36V**

• Standards

The product is manufactured in accordance with the following standards:

ISO 9001:2008

Electronic equipment used on rolling stock: EN50155

Electromagnetic compatibility: EN50121-3-2

Isolation: EN50124-1

Shock and vibration: EN50155/EN61373

Fire protection according to EN 45545

The standards applicable to this product are dependent on the version available at the time of development.

• Operating Voltage

Nominal voltage: 36VDC

Tolerance according to railway standard: -30% +25%

Idle current: ca. 50 mA

Holding coil power: 0,3 W

Protection circuits: Reverse polarity protection, protective circuit for relay coil and Transients suppression diodes

• Pulse Input

Voltage: 22 - 36VDC

Pulse width: min. 50 ms



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• Contact loads

Relay type: A, according to EN 50205
 Minimum current: 10mA at 10 VDC

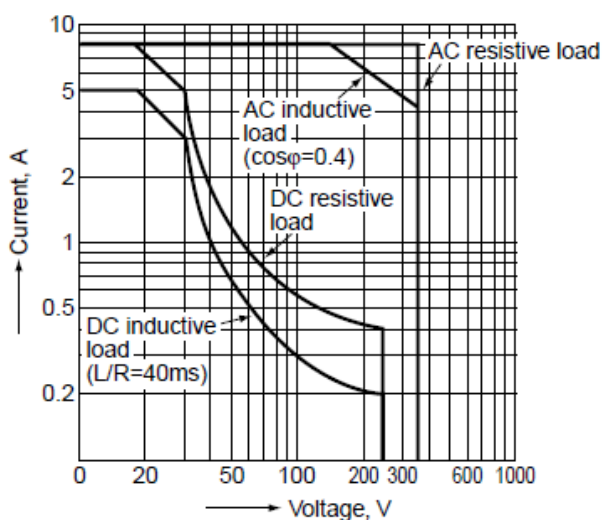
Characteristics	Item	Specifications	
Contact	Arrangement	1 Form A 1 Form B, 2 Form A	
	Contact material	Au-flashed AgSnO ₂ type	
	Contact resistance (Initial)	Max. 30 mΩ (By voltage drop 6 V DC 1A)	
Rating	Max. switching power (resistive load)	3,040 VA, 150 W	
	Max. switching voltage	380 V AC, 250 V DC	
	Max. switching current	8 A	
	Nominal operating power	Approx. 240mW (Single side stable, 2 coil latching)	
	Min. switching capacity (Reference value)*1	100 mA 5V DC	
Electrical characteristics	Insulation resistance (Initial) (at 25°C, 50% relative humidity)	Min. 1,000MΩ (at 500V DC) Measurement at same location as "Breakdown voltage" section.	
	Breakdown voltage (Initial)	Between open contacts	1,200 Vrms for 1 min. (Detection current: 10 mA)
		Between contact sets	2,000 Vrms for 1 min. (Detection current: 10 mA)
		Between contact and coil	3,750 Vrms for 1 min. (Detection current: 10 mA)
	Surge breakdown voltage (Initial)*2	6,000 V (Between contact and coil)	
	Operate time [Set time] (at 20°C 68°F)	Max. 15 ms [Max. 15 ms] (Nominal coil voltage applied to the coil, excluding contact bounce time.)	
Release time [Reset time] (at 20°C 68°F)	Max. 10 ms [Max. 15 ms] (Nominal coil voltage applied to the coil, excluding contact bounce time.) (without diode)		
Mechanical characteristics	Shock resistance	Functional	Min. 196 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.)
		Destructive	Min. 980 m/s ² (Half-wave pulse of sine wave: 6 ms.)
	Vibration resistance	Functional	10 to 55 Hz at double amplitude of 2 mm (Detection time: 10μs.)
		Destructive	10 to 55 Hz at double amplitude of 3 mm
Expected life	Mechanical	Min. 10 ⁷ (at 180 times/min.)	
	Electrical	Min. 10 ⁸ (8 A 250 V AC resistive) (ON : OFF = 1 s : 5 s)	
Conditions	Conditions for operation, transport and storage*3	Ambient temperature: -40°C to +60°C -40°F to +140°F; Humidity: 5 to 85% R.H. (Not freezing and condensing at low temperature)	
	Max. operating speed	30 cps	
Unit weight		Approx. 10g .353 oz	

Notes: *1. This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

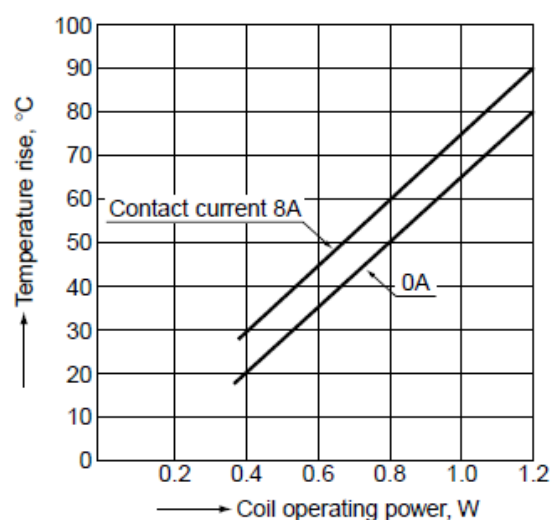
*2. Wave is standard shock voltage of $\pm 1.2 \times 50\mu\text{s}$ according to JEC-212-1981

*3. The upper limit of the ambient temperature is the maximum temperature that can satisfy the coil temperature rise value. Refer to Usage, transport and storage conditions in NOTES.

1. Max. switching power



2. Coil temperature rise



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Mechanical data

Measures (WxHxD): 38.5 x 83.5 x 76.5mm
Weight: ca. 100g

• Materials

Housing: Plastic
PCB: Epoxy resin
Mounting: 11 pin plugable countersocket (not included)
Connector type: 11-pin plug
Labelling: on top

Other conditions

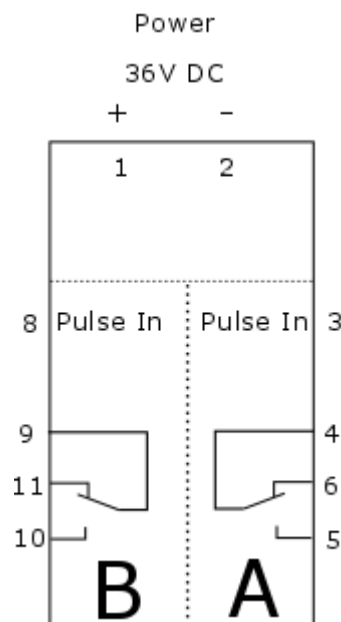
• Climatic conditions

Environment temperature: -40°C bis +60°C
Humidity : max 90% rF, at30°C, non condensing

• Disposal

According to local regulations

Connection / Wiring diagram



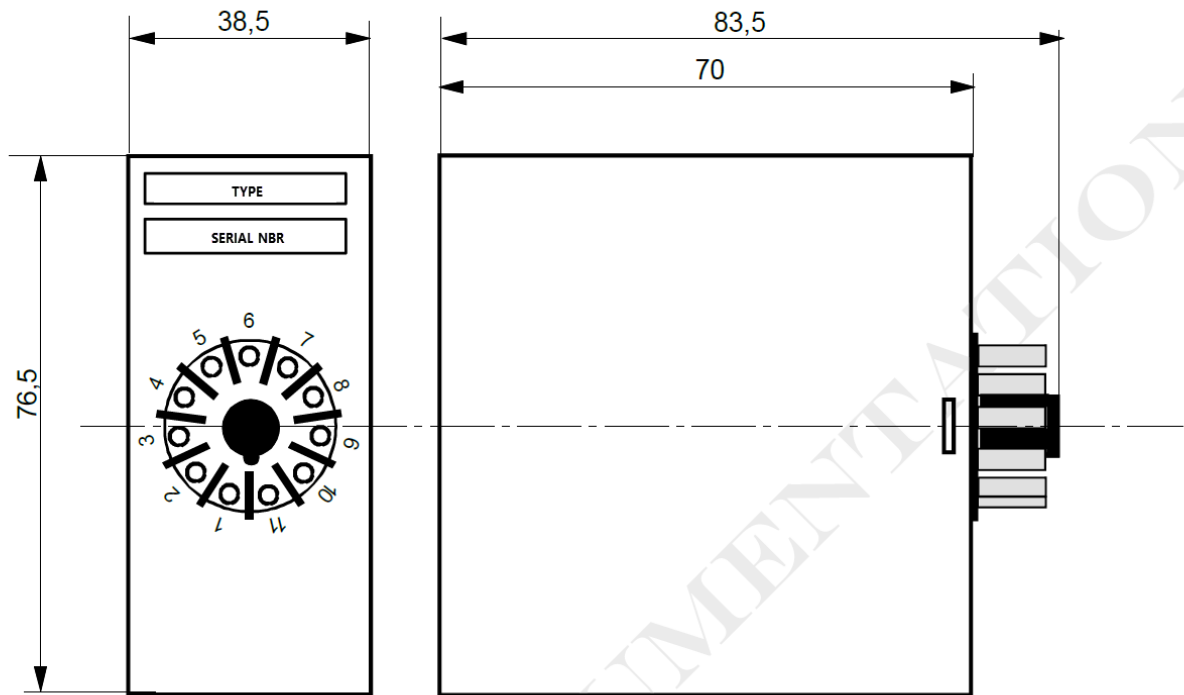
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Measures / housing



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