



# BZ912 T

## Safety Relay 24V DC

B+Z Art. Nr. 834

### According to standard EN 50155

Electronic devices in rolling stock



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## Article / Function

### 1.1 Description

#### Application

This safety relay is designed for use in industrial continuous operation applications. Safety relay according to standard EN61810 type A with forcibly guided contacts and integrated protection circuit for mounting on standard T Rail system. The strength of this safety relay is the guaranteed function with minimum contact current 3mA at 5V. It makes it also suitable for switching bus signals. The gold plated contacts may not be used in "fritting" applications!

The LED on the front panel indicates when power is applied to the coil.

- Contacts : 4 NO / 2 NC
- Nominal voltages also available for 15VDC / 24VDC / 48VDC / 72VDC / 110V DC
- With reverse polarity protection, overvoltage surge protection, LED status indicator
- Front connector : 1 wire terminal block on all pins
- Screwless front connector - wires plugable without special tools; AWG 24-16
- Optional front connector block for looping through on all pins available
- Coil is manufactured according to Standard EN50155

Safe isolation distance between coil and contact area (>5,5 mm); as well as between contacts (>5,5 mm)  
Medium required power ca. 0,66W, Hold force ca. 0,20W

#### Technical Data

Type designation: **BZ912T 24V**

- **Standards**

The product is manufactured in accordance with the following standards:

ISO 9001:2015  
Electronic equipment used on rolling stock: EN50155  
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.



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## Mechanical data

Measures (WxHxD): 22,5 x 85 x 72mm  
Max. length: with counterconnector in place ca. 125mm  
Weight: ca. 95g (without counterconnector)

- **Materials**

Housing: Plastic  
PCB: Epoxy resin

- **Mounting:** Horizontal snap on standard Rail 35mm, (EN-50022-35)

- **Marking / Labeling**

Wiring label on housing

## Other conditions

- **Climatic conditions**

Environment temperature: -30°C bis +70°C  
Humidity : max 90% rF, at30°C, non condensing.

- **Disposal / Recycling**

According to local regulations

## Connector

- **Screwless front edge connector**

14-pin edge connector: WAGO (codeable)

- **Counter connector (optional)**

14-pin female connector strip: WAGO single row or double row available  
Grid 5.08mm. (not included at delivery)

## 2.2. Electrical Data

- **Operating Voltage**

Nominal voltage: 24V DC  
Tolerance according to railway standard: -30% +25%  
Current : ca. 28mA at 24VDC



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## • Internal electrical protection

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

## • Contact data

Load max. DC: max 8A per contact  
Minimal current: 3 mA at 5V

**Relay data:** Relay type: A, according to EN61810

### Contact Data

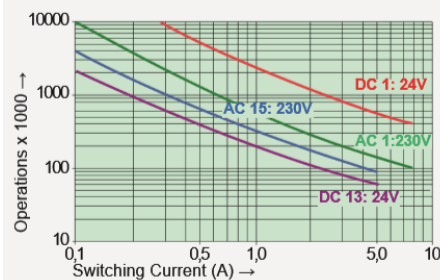
Contact material	AgCuNi + 0,2 µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250 VAC 8 A AC1 2000 VA
Electr. Life AC1(360 S / h)	approx. 100000
Inrush current max.	30 A for 20 ms
Switching voltage range	5 to 250 VDC / VAC
Switching current range*	3 mA to 8 A
Switching capacity range*	40 mW to 2000 W(VA)
Contact resistance (as delivered)	≤100 mΩ / 6 V / 100 mA

\*Guided values

### Insulation Data

- Double or reinforced insulation	
- Air and creepage distance	at 250 VAC >5,5 mm
- Test voltage	4000 V / 50 Hz / 1 min
Test voltage contact open	1500 V / 50 Hz / 1 min
Creepage resistance	CTI 175
Pollution degree	2
Overvoltage category	III
Insulation resistance at Up 500 VDC	>100 MΩ

### Contact Lifetime for NO Contacts



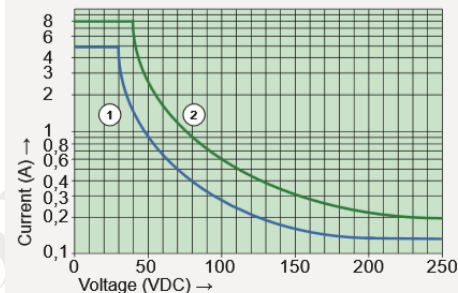
Maximal switching characteristics (DIN EN 60947-5-1)

AC 1:	250 V / 8 A
AC 15:	230 V / 5 A
DC 1:	24 V / 8 A
DC 13:	24 V / 5 A / 0,1 Hz
UL 508:	B300 / R300

Maximal contact load at AC 1 with 230 V:

- 2 contacts with 8 A each
- 3 contacts with 6 A each
- 4 contacts with 4,5 A each

### Load Limit Curve with Direct Current



- 1) Inductive load L/R 40 ms
- 2) Resistive load

### Additional Data

Mechanical endurance	>10 x 10 <sup>8</sup> operations
Switching frequency, mechanical	15 Hz
Response time (all NO closed)	typically 20 ms
Drop-out time** (NC closed)	typically 8 ms
Bounce time of NO contact	typically 1,5 ms
Bounce time of NC contact	typically 15 ms
Shock resistance 16 ms	NO > 10g NC > 6g
Vibration resistance (10-200 Hz)	NO > 10g NC > 2g
Resistance to short circuiting contacts NO	1000 A SCPD 10 A gG / gL (pre-fuse)
Resistance to short circuiting contacts NC	1000 A SCPD 6 A gG / gL (pre-fuse)
Ambient temperature	-40°C to +70°C
Thermal Resistance	47 K / W
Temperature limit for coil	120°C
Weight	approx. 35 g
Mounting position	any
Type of protection	RT II
Solder bath temperature	270°C / 5 s

\*\*without spark suppression



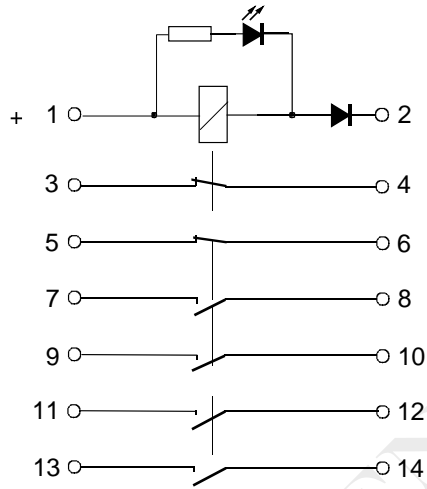
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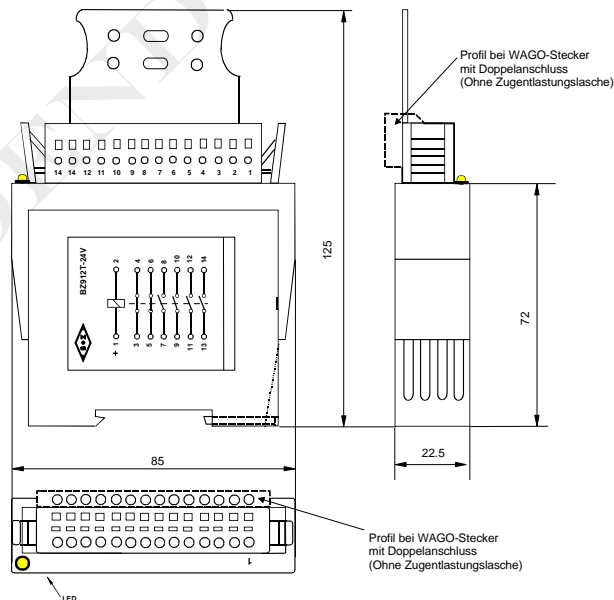
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### 3. Wiring diagram



### 4. Measures



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