BZ910 T

Safety Relay 36V DC

B+Z Art. Nr. 826

According to standard EN 50155

Electronic devices in rolling stock

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Application / function

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 circuit protection for mounting on standard T Rail system.
The strength of this safety relay is the guaranteed function with minimum contact current 1mA 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 : 3 NO / 3 NC
- Nominal voltages also available for 15VDC / 24VDC / 48VDC / 72VDC / 110V DC
- With reverse polarity protection, overvoltage surge protection, LED status indicator
- Wire 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

Technical data

Type designation: **BZ910T 36V**

- **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.

- **Operating Voltage**

Nominal voltage:	36V DC Tolerance according to railway standard: -30% +25%
Current :	ca. 20mA at 36VDC

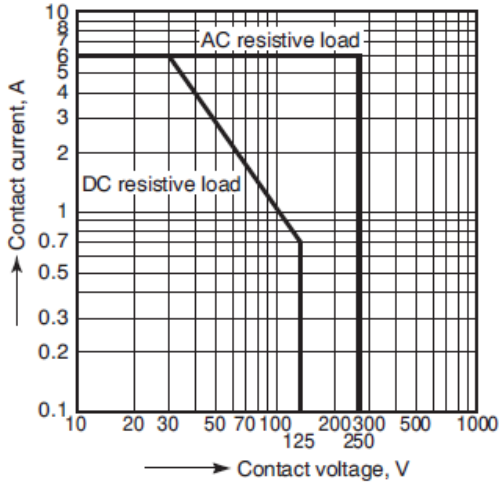
• Internal electrical protection

Transzorbdiode protecting against voltage spikes as well as protective circuit for coil
Polarity protection diode

• Contact loads

Relay type: A, according to EN61810
Max. load current:
Minimum current: 1mA at 5 VDC (depending on switching cycle)

Maximum switching capacity:



• Relay data

Initial contact resistance, max. (By voltage drop 6 V DC 1 A)		100 mΩ
Contact material		Gold-flashed $AgSnO_2$ type
Rating (resistive load)	Nominal switching capacity	6 A 250 V AC, 6 A 30 V DC
	Max. switching power	1,500 VA, 180 W
	Max. switching voltage	250 V AC, 30 V DC
	Max. switching current	6 A (Reduce by 0.1 A/°C for temperatures 70 to 85°C.)
	Min. switching capacity (Reference value) #1	1 mA 5 V DC
Expected life (min. operations)	Mechanical (at 180 cpm)	10^7
	Electrical	250 V AC 6 A resistive load: 10^5 (at 20 cpm)
		30 V DC 6 A resistive load: 10^5 (at 20 cpm)
		250 V AC 1 A resistive load: 5×10^5 (at 30 cpm)
		30 V DC 1 A resistive load: 5×10^5 (at 30 cpm)
		[AC 15] 240 V AC 2 A inductive load: 10^5 (at 20 cpm, $\cos\phi$ = 0.3)
		[DC 13] 24 V DC 1 A inductive load: 10^5 (at 20 cpm, L/R = 48 ms)

#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.

Max. operating speed		20 cpm (at nominal voltage)	
Initial insulation resistance*1		Min. 1,000 MΩ at 500 V DC	
Initial breakdown voltage*2	Between open contacts	1,500 Vrms for 1 min.	
	Between contact sets	2,500 Vrms for 1 min.: 7-8/9-10 between open contacts	2,500 Vrms for 1 min.: 7-8/11-12 between open contacts 9-10/13-14 between open contacts 11-12/13-14 between open contacts
		4,000 Vrms for 1 min.: 3-4/5-6 between open contacts 3-4/7-8 between open contacts 5-6/9-10 between open contacts	4,000 Vrms for 1 min.: 3-4/5-6 between open contacts 3-4/7-8 between open contacts 5-6/9-10 between open contacts 7-8/9-10 between open contacts
	Between contact and coil	4,000 Vrms for 1 min.	
Operate time (at nominal voltage)		Max. 20 ms*3	
Response time*4 (without diode) (at nominal voltage)		Max. 8 ms*3	
Release time (without diode) (at nominal voltage)		Max. 20 ms*3	
Shock resistance	Functional*5	Min. 200 m/s²	
	Destructive*6	Min. 1,000 m/s²	
Vibration resistance	Functional*7	10 to 55 Hz at double amplitude of 1.5 mm	
	Destructive	10 to 55 Hz at double amplitude of 1.5 mm	
Conditions for operation, transport and storage*8 (Not freezing and condensing at low temperature)	Ambient temp.	–40°C to +85°C –40°F to +185°F	
	Humidity	5 to 85% R.H.	
Unit weight		Approx. 20 g Approx. .71 oz	Approx. 23 g Approx. .81 oz

• Outline of performance [Socket for PC board/DIN terminal socket]

Max. carrying current	6 A (Reduce by 0.1 A/°C for temperatures 70 to 85°C.)
Initial breakdown voltage	Between each terminal: 2,500 Vrms for 1 min. (Detection current: 10mA)
Initial insulation resistance*1	Min. 1,000 MΩ at 500V DC

*1 Measurement at same location as "Initial breakdown voltage" section

Remarks
*1 Measurement at same location as "Initial breakdown voltage" section
*2 Detection current: 10mA
*3 Excluding contact bounce time
*4 Response time is the time after the coil voltage turns off until the time when "a" contact turns off.
*5 Half-wave pulse of sine wave: 11ms; detection time: 10µs
*6 Half-wave pulse of sine wave: 6ms
*7 Detection time: 10µs
*8 Refer to "NOTES" on page 9, 7. Usage, transport and storage conditions.

Connector

- **Screwfree front edge connector**

14-pin edge connector: WAGO (codeable)

- **Counter connector (optional)**

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

Mechanical data

Measures (WxHxD): 22,5 x 85 x 72mm
Weight: ca. 95g (without counterconnector)

- **Materials**

Housing: Plastic
PCB: Epoxy resin

Mounting: Horizontal on standard Rail 35mm, (EN-50022-35)
Connector type: 14-pin single row terminal strip, Type WAGO

- **Marking / Labeling**

Wiring label on housing

Other conditions

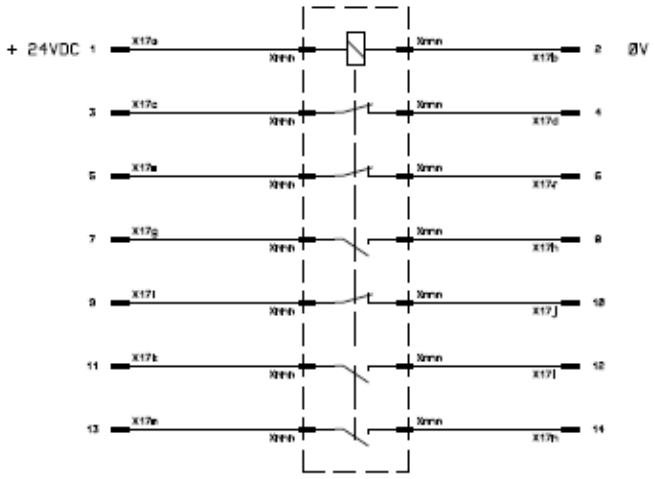
- **Climatic conditions**

Environment temperature: -20°C bis +70°C
Humidity : max 90% rF, at30°C, non condensing.

- **Disposal / Recycling**

According to local regulations

Connection / Wiring diagram



Measures / mounting