



BZ936 T

Safety Relay 24VDC

With switch on delay and SIL2 similar function
B+Z Art. Nr. 893



Content:

Page:

| | | |
|----|------------------------|-------|
| 1. | Application / Function | 2 |
| 2. | Technical data | 2 / 3 |
| 2. | Wiring diagram | 5 |
| 4. | Measures | 6 |

Article / 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 protection circuit for mounting on standard T Rail system. Inside 2 relay coils are in parallel use, but the contacts are in serial connection to achieve a kind of SIL2 safety. In total there are 4 contacts NO and 2 contacts NC.

The built-in startup delay with a fixed delay time is automatically started when the device is supplied with UBatt voltage. (Self starting timer)

The desired startup delay time is specified by the customer when ordering the device.

The device is to be used in safety critical applications and Railway applications according to EN 50155. 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 The LED at the front panel indicates when power is applied to the coil.

Technical Data

Type designation: **BZ936T-xxxsec (= startup delay time)**

- **Standards**

The product is manufactured in accordance with the following standards:

ISO 9001:2015
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.

Mechanical data

Measures (WxHxD): 22,5 x 120 x 88mm
Max. length: with counterconnector in place ca. 175mm
Weight: ca. 95g (without counterconnector)

- **Materials**

Housing: Plastic
PCB: Epoxy resin

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



B + Z Elektronik AG

Created: 2.11.2018
Modified:
Index:
File: BZ936T_24V_e_kd.doc

Checked:
Page: 2/6

BZ936T
Safety relay 24VDC with switch on delay
and SIL2 similar function

- **Marking / Labeling** Wiring label on housing

Connector

- **Screwless front edge connector**

14-pin edge connector: WAGO (coded at PIN9 !)

- **Counter connector (optional)**

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

Electrical Data

- **Operating Voltage**

Nominal voltage: 24V DC
Tolerance according to railway standard: -30% +25%
Idle Current : ca. 56mA at 24VDC

- **Contact data**

Relay type: A, nach EN61810
Load max DC: ohm = 50V/2A, induktive = 50V/0.8A
Minimal current: 10mA at 10V



B + Z Elektronik AG

Created: 2.11.2018
Modified:
Index:
File: BZ936T_24V_e_kd.doc

Checked:
Page: 3/6

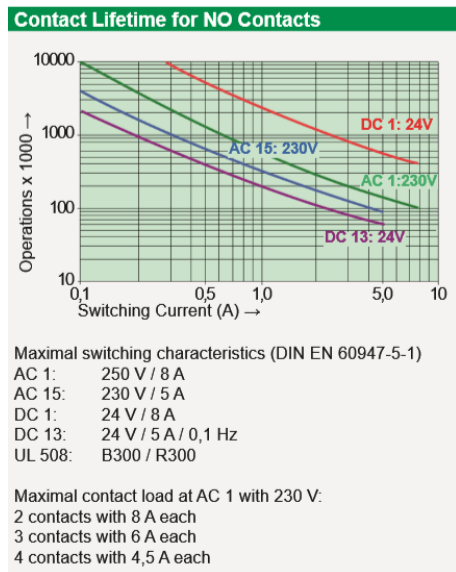
BZ936T
Safety relay 24VDC with switch on delay
and SIL2 similar function

• **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 | at 250 VAC |
| - Air and creepage distance | >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 |



Load Limit Curve with Direct Current

Additional Data

| | |
|--|-------------------------------------|
| Mechanical endurance | >10 x 10 ⁶ 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

• **Internal electrical protection**

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

• **Mechanical protection**

Type: IP30



B + Z Elektronik AG

Created: 2.11.2018
 Modified:
 Index:
 File: BZ936T_24V_e_kd.doc

Checked:
 Page: 4/6

BZ936T
 Safety relay 24VDC with switch on delay
 and SIL2 similar function

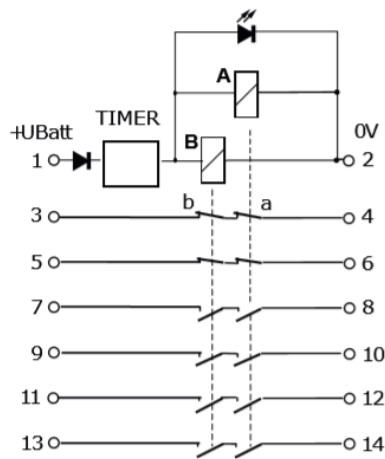
- **Climatic conditions**

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

- **Disposal / Recycling**

According to local regulations

3. Wiring diagram



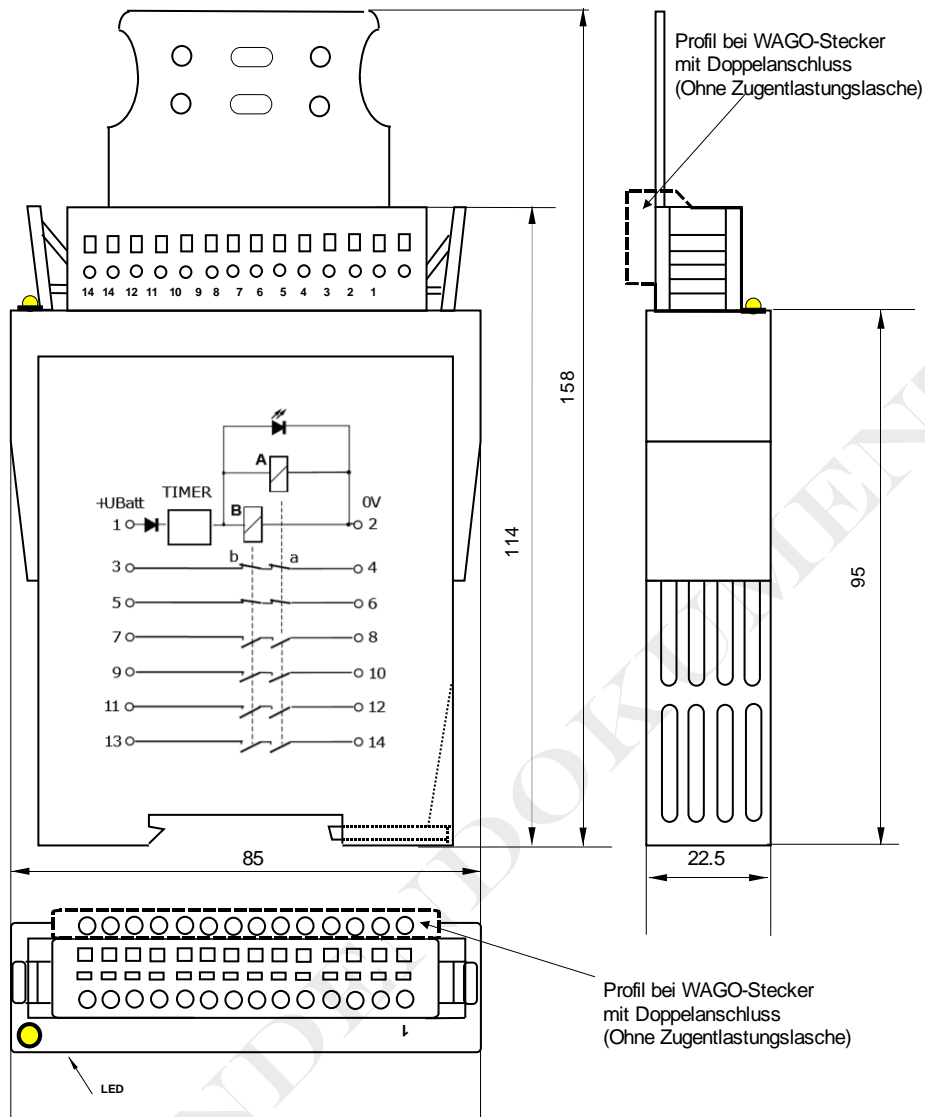
B + Z Elektronik AG

Created: 2.11.2018
Modified:
Index:
File: BZ936T_24V_e_kd.doc

Checked:
Page: 5/6

BZ936T
Safety relay 24VDC with switch on delay
and SIL2 similar function

4. Measures



B + Z Elektronik AG

Created: 2.11.2018
 Modified:
 Index:
 File: BZ936T_24V_e_kd.doc

Checked:
 Page: 6/6

BZ936T
 Safety relay 24VDC with switch on delay
 and SIL2 similar function