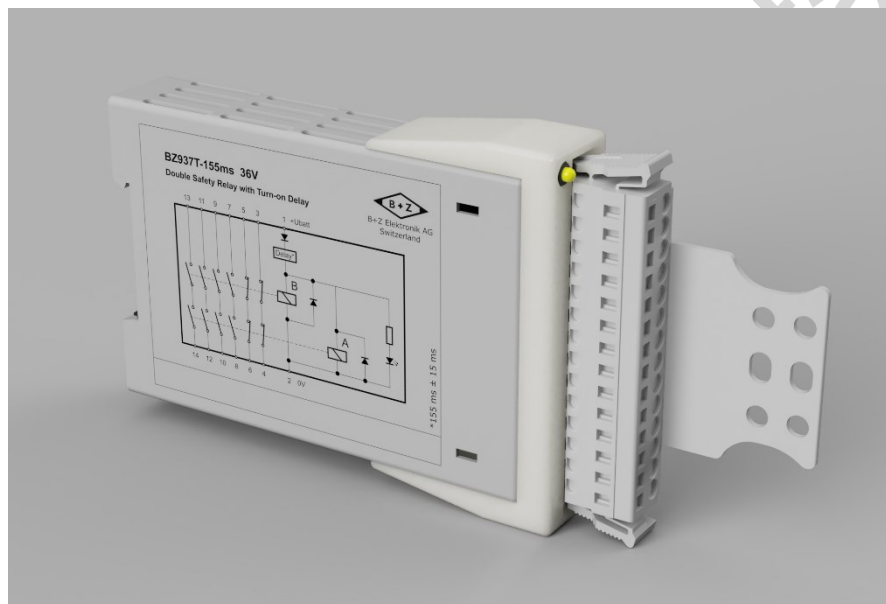




BZ937T 36 VDC

Safety relay with turn-on delay and SIL2-similar functionality



* Illustration similar, mating connector not included in the scope of delivery

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Application/ Function

Two forcefully guided safety relays of type A after EN 61810-3:2015 with built-in protective measures. The coils are connected in parallel; the contacts are connected in series to ensure SIL2-similar functionality. There is a total of 4 normally open contacts and 2 normally closed contacts. The built-in turn-on delay starts automatically when the device is supplied with voltage (self-starting timer).

The desired turn-on delay is to be specified by the customer when placing the order.

Device Variants

The device is available with different turn-on delays. The device designation corresponds to the duration of the delay. Article numbers only exist for versions that have already been produced. If you wish to order a device with a different timing, the new version will be assigned a new article number. Please contact us directly in this case.

Device designation: BZ937T-XXXms (XXX = turn-on delay in ms)

Example: The article BZ937T-155ms (article number 935) is nominally set to 155ms turn-on delay.

Tolerance: The tolerance lies within +/- 15ms for all devices with nominal delays in the range of 100 to 300ms over the entire voltage and temperature range.

Turn-on delay / ms	Device designation	Art. no.
155	BZ937T-155ms	935

Table 1: Existing order options for BZ937T with turn-on delay and article number.

Technical Data

Supply Voltage

Nominal voltage: 36 VDC according to EN 50155
Nominal current: approx. 56 mA (relay active)
Protective measures: Reverse power and transient protection

Environment

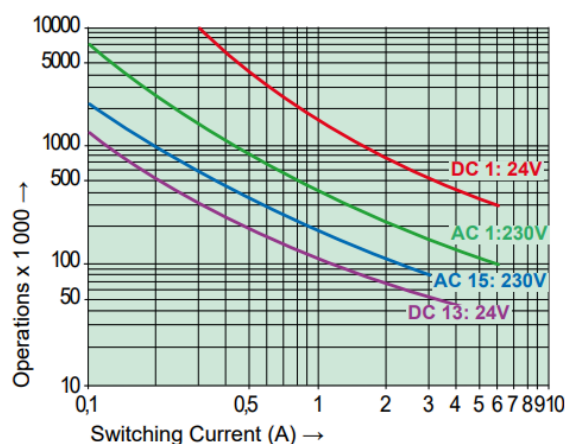
Operational temperature: -25 to +70 °C (OT3 with ST1)
Condensation and humidity: Unit: up to 96% r.h., at 30°C, non-condensating
Connector: 320 V nominal voltage at pollution level 2
Vibration and shocks: EN 61373, category 1, class B

Relay Contacts

Number of contacts: 2 normally closed contacts and 4 normally open contacts
 Relay type: A, according to EN61810-3
 Contact load: resistive = 50 V / 2 A, inductive = 50 V / 0.8 A
 Minimal current through contact: 10 mA at 10 V

Mechanical service life	> 10 x 10 ⁶ switching cycles	Contact material	AgCuNi+0.2-0.4µm Au
Mechanical switching frequency	max. 12Hz	Contact type	Single contact with serrated crown
Response time (all NO closed)	typically 15ms	Rated switching capacity	250VAC 6A AC1 1,500VA
Fall time (all NC closed)	typically 5ms	Elec. service life AC1 (at 360 S/h)	approx. 100,000
Normally open contact bounce time	typically 2ms	Max. switch-on current	30A for 20ms
Normally closed contact bounce time	typically 15ms	Switching voltage range	5 to 250VDC/VAC
Shock resistance 16ms	NO contact 10g NC contact 9g	Typical switching current range	5mA to 6A
Vibration resistance 10-200Hz	NO contact 10g NC contact 3g	Typical switching capacity range	60mW to 1,500W (VA)
Test voltage		Contact resistance (unused)	< 100mΩ / 28V / 100mA
Coil / control contacts	2,500Veff 1min		
Test voltage output contacts against each other	4,000Veff 1min		
Test voltage contact open	1,500Veff 1min		
Insulation resistance at Up 500V	10 ⁸ Ω		
Tracking resistance	CTI 175		
Coil resistance	approx. 1200 Ohm / relay at 20 degrees		
Protection class	RT III		
Coil temperature limit	120°C		
Overvoltage capacity	III		

Contact Lifetime for NO Contacts



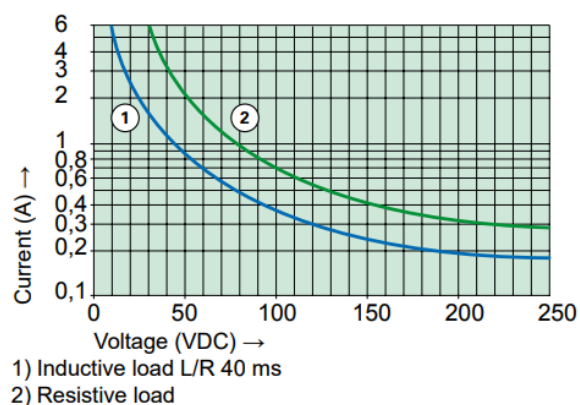
Maximal switching characteristics (EN60947-5-1)

AC 1: 250 V / 6 A
 AC 15: 230 V / 3 A
 DC 1: 24 V / 6 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 6 A each
 3 contacts with 4 A each
 4 contacts with 3 A each

Load Limit Curve with Direct Current



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



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Standards and Norms

The device is manufactured according to the following standards:

ISO 9001:2015

Electronic equipment used on rolling stock: EN 50155

EMC: EN 50121-3-2

Isolation: EN 50124-1

Fire protection: EN 45545

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

Mechanical Data

Dimensions

Size over all: 171 x 23 x 87 mm (L x W x H)
Weight: approx. 95 g (without mating connector)

Materials

Enclosure: Glass-fibre reinforced plastic
Cover: Plastic
PCB: FR-4

Mounting

Arbitrary orientation
Mounting: on standard 35 mm T-rails, EN-50022-35

Front edge connector

14-pin plug connector: WAGO (coded on Pin 10)

Mating connector (optional)

14-pin female connector: WAGO 721-114/037-047/035-000
Female connector with strain relief



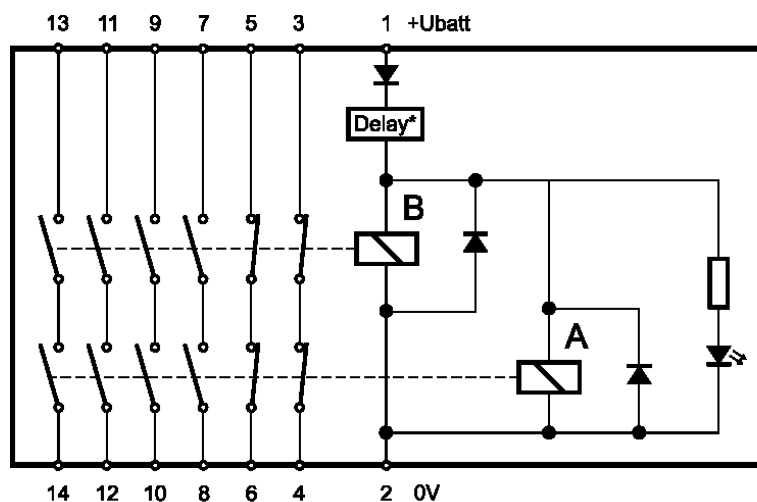
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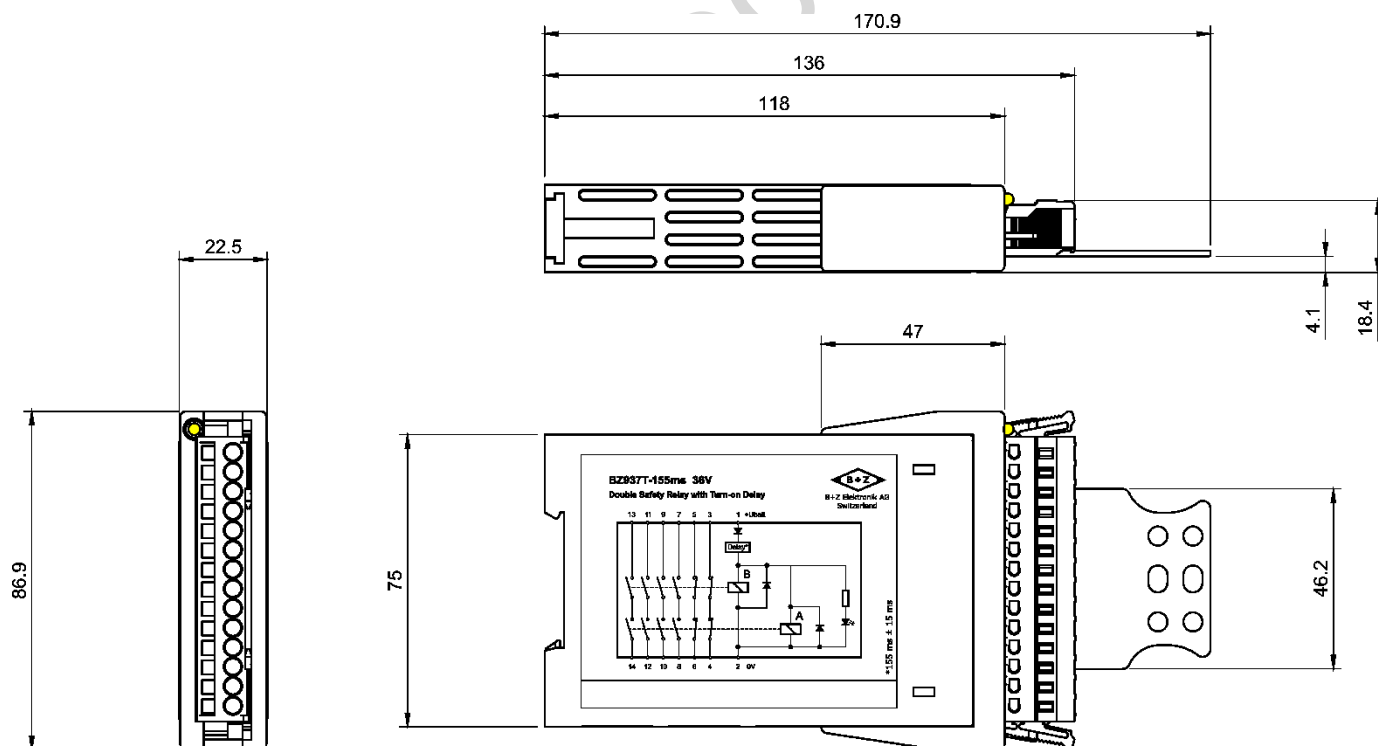
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Block Schematic



Measures / Mounting Diagram



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