BZ926-x

Safety Relay 24V

With max. 6 Logic AND 24V level Inputs

H-Logic means that all the inputs must be at HIGH level to activate the Relay coil	L-Logic means that the Relay coil is always activated and will only deactivate when all inputs are on high level.	Number of logic inputs
BZ926-2H Art.Nr: 881	**BZ926-2L Art.Nr: 873**	**2**
BZ926-3H Art.Nr: 880	**BZ926-3L Art.Nr: 867**	**3**
BZ926-4H Art.Nr: 879	**BZ926-4L Art.Nr: 874**	**4**
BZ926-5H Art.Nr: 878	**BZ926-5L Art.Nr: 875**	**5**
BZ926-6H Art.Nr: 877	**BZ926-6L Art.Nr: 876**	**6**

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1. Function / Object

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1.1. Description / Function

This device is a safety Relay Type EN61810 Type A with forcibly guided contacts and integrated circuit protection for mounting on standard T Rail system. It also has an analog integrated AND input logic and an electronic protection circuit. It is designed for use in industrial continuous operation applications and rolling stock. The LED at the front panel indicates when power is applied to the Relay coil.

The device has according to the article number several (2 to 6) 24V logic inputs which are working as “AND” gates to control the Relay coil.

These versions are available for 24V level control:

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As an example - The customer ordered the version with 3 logic inputs BZ926-3H which means : Any 3 (or more) of the 6 inputs must be on HIGH level to activate the Relay coil.
If just one of the three inputs fall to low level again, which means that only 2 inputs are still on HIGH level will deactivate the coil.

If the customer has ordered the version with 3 logic inputs for low level BZ926-3L, then 3 (or more) from the 6 inputs must be on HIGH level to deactivate the Relay coil. If afterwards just one of the logic inputs drops to LOW which means only 2 inputs are still HIGH, the Relay coil will activate again.

The device is designed for use in rolling stock applications according to EN 50155.
Contacts : 2 NO / 1 NC

2. Technical data

- **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.

2.1. Mechanical data

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- **Measures**

B x T x H: 22.5mm x 95mm x 85mm
Maximal length : 160mm
Weight : 140g

- **Materials**

Housing: Glass reinforced Plastic
PCB: Epoxy resin

- **Mounting**

Fixing: Snap on T-rail 35mm, EN-50022-35
Mounting position: Horizontal

- **Screwless front connector strip**

1 Stk. 14-pin front male connector: WAGO (codeable)

- **Counter connector (optional)**

1 Stk. 14-pin female row front connector: WAGO (codeable)

2.2. Electrical data

- **Operating voltage**

Rated voltage: 24VDC according to EN 50155
Voltage range: + 25% / -30%
Idle current : 10mA at (24VDC)

- **Logic inputs**

Level: Nominal 24V DC (20V min. to 28V DC max) other values upon request

- **Contact load**

Relay type: A, according to EN61810
Current load limit DC: ohm = 50V/2A, inductive = 50V/0.8A

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- **Relay data**

Relay Key Data

- PCB relay with forcibly guided contacts
- Protective separation between control and load circuit (leakage and creepage distances >8 mm)
- IEC 61810-3 type A
- Double and reinforced insulation between the contacts
- Contact mounting SIS422 4 NO / 2 NC
- Small external dimensions
- Nominal coil power approx. 0,66 W
- Holding coil power 0,20 W
- Coils for railway applications according to EN 50155 on request

Contact Data

Contact material	AgCuNi + 0,2 µm Au
Type of contact	Single contact with notched crown
Rated switching capacity	250 VAC 6 A AC1 1500 VA
Electr. Life AC1 (360 S / h)	>90000
Inrush current max.	30 A for 20 ms
Switching voltage range	5 to 250 VDC / VAC
Switching current range*	3 mA to 6 A
Switching capacity range*	40 mW to 1500 W(VA)
Contact resistance (as delivered)	≤100 mΩ / 6 V / 100 mA

*Guided values

Insulation Data

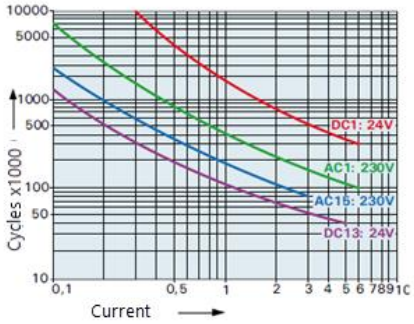
- - - -	- Basic insulation	at 250 VAC
	- Air and creepage distance	>4 mm
	- Test voltage	2500 V / 50 Hz / 1 min
	- Double or reinforced insulation	
- · - ·		at 250 VAC
	- Air and creepage distance	>5,5 mm
	- Test voltage	4000 V / 50 Hz / 1 min
	- Double or reinforced insulation	
		at 250 VAC
	- Air and creepage distance	>8 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

Additional Data

Mechanical endurance	>10 x 10^6 operations
Switching frequency, mechanical	15 Hz
Response time (all NO closed)	typically 15 ms
Drop-out time** (NC closed)	typically 5 ms
Bounce time of NO contact	typically 2 ms
Bounce time of NC contact	typically 15 ms
Shock resistance 16 ms	NO > 10g
	NC > 9g
Vibration resistance	NO > 10g
(10-200 Hz)	NC > 3g
Resistance to short circuiting contacts	1000 A SCPD 6 A gG / gL (pre-fuse)
Ambient temperature	-40°C to +85°C
Thermal Resistance	45 K / W
Temperature limit for coil	120°C
Weight	approx. 35 g
Mounting position	any
Type of protection	RT III
Solder bath temperature	270°C / 5 s

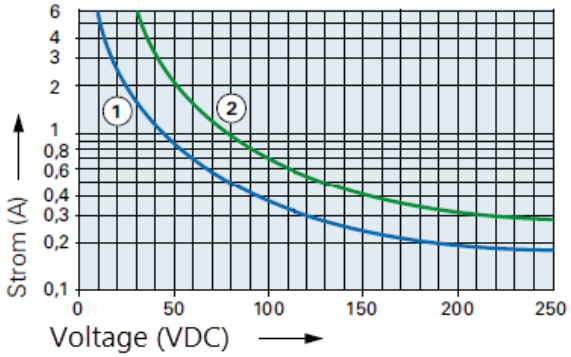
**without spark suppression

Contact Lifetime



Max. Switching cycles DIN EN 60947-4-1 / EN 60947-5-1):
AC 1: 250V/6A AC 15: 230V/3A
DC 1: 24V/6A DC 13: 24V/5A/0,1 Hz
UL 508: B300 / R300

Max. DC Current



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

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2.2.3. Safety precaution

- **Electrical protective measures**

Reverse polarity protection, Transzorb diodes for limiting overvoltages and electrical protection for relay coil.

- **Mechanical protection**

Protection class. IP30

2.3. Other information

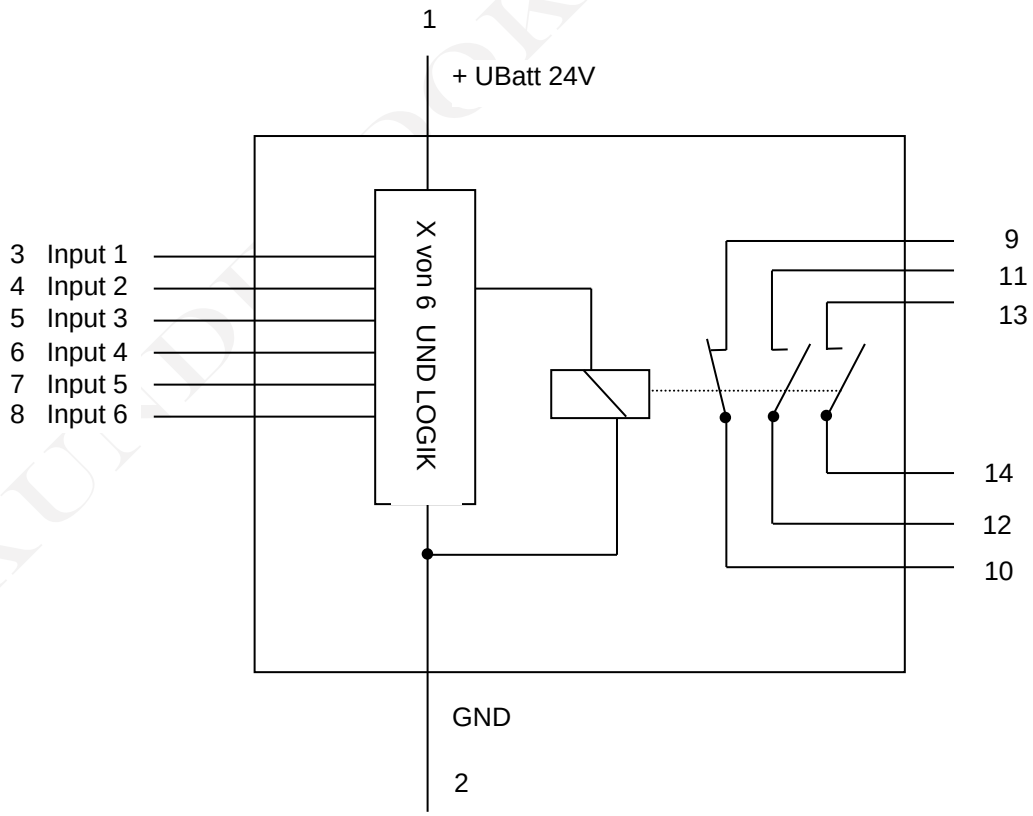
- **Climatic conditions**

Environment temperature : - 20°C...+60°C

2.3.2. Disposal

According to local regulations

3. Wiring diagram



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Logic table: Example BZ926-3H

Input1	Input2	Input3	Input4	Input5	Input6	Relay coil
0	0	0	0	0	0	0
1	0	0	0	0	0	0
0	1	0	0	0	0	0
1	1	0	0	0	0	0
0	0	1	0	0	0	0
1	0	1	0	0	0	0
0	1	1	0	0	0	0
1	1	1	0	0	0	1
0	0	0	1	0	0	0
1	0	0	1	0	0	0
0	1	0	1	0	0	0
1	1	0	1	0	0	1
0	0	1	1	0	0	0
1	0	1	1	0	0	1
0	1	1	1	0	0	1
1	1	1	1	0	0	1
0	0	0	0	1	0	0
1	0	0	0	1	0	0
0	1	0	0	1	0	0
1	1	0	0	1	0	1
0	0	1	0	1	0	0
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0	1	1	0	1	0	1
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0	0	0	1	1	0	0
1	0	0	1	1	0	1
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1	0	0	0	0	1	0
0	1	0	0	0	1	0
1	1	0	0	0	1	1
0	0	1	0	0	1	0
1	0	1	0	0	1	1
0	1	1	0	0	1	1
1	1	1	1	0	1	1
0	0	0	1	0	1	0
1	0	0	1	0	1	1
0	1	0	1	0	1	1
1	1	0	1	0	1	1
0	0	1	1	0	1	1
1	0	1	1	0	1	1
0	1	1	1	0	1	1
1	1	1	0	0	1	1
0	0	0	0	1	1	0
1	0	0	0	1	1	1
0	1	0	0	1	1	1

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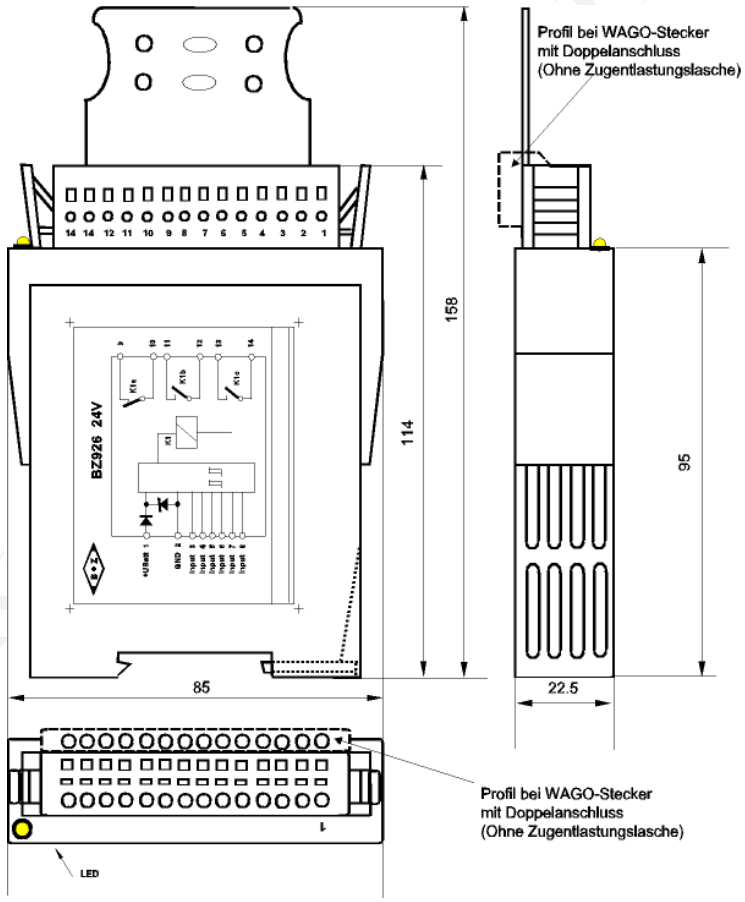
1	1	0	0	1	1	1
0	0	1	0	1	1	1
1	0	1	0	1	1	1
0	1	1	0	1	1	1
1	1	1	1	1	1	1
0	0	0	1	1	1	1
1	0	0	1	1	1	1
0	1	0	1	1	1	1
1	1	0	1	1	1	1
0	0	1	1	1	1	1
1	0	1	1	1	1	1
0	1	1	1	1	1	1
1	1	1	1	1	1	1

For the device BZ926-3L the logic is invers to this example !

4. Measures / Mounting



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