



# BZ 830 24VDC

## Voltage Indicator max. 2000V

DC version : B+Z Art. Nr. 855

AC version : B+Z Art. Nr. 885



### Function / Description

The device detects and signals the applied high voltage (depending on type AC or DC) on the busbar or other high voltage signals.

Three built-in relays type A with forced contacts are signaling the voltage range present:

Only relay 1 activates when  $U_{IN AC} \Rightarrow 400V$  to  $750V$

Only relay 2 activates when  $U_{IN AC} \Rightarrow 750V$  to  $1200V$  (relay 1 drops)

Only relay 3 activates when  $U_{IN AC} \Rightarrow 1200V$  (relays 1 + 2 are dropped)

Mechanical forcing according to standard EN50205.

The reaction / delay time for voltage changes at the high-voltage input is approx. 1 second. The relays are mutually electronically interlocked, this means only one relay is activated at the same time.

An additional output signal - proportional to the input voltage, delivers between 0 and 10 VDC at the signal output. This signal is galvanically isolated and can be used with 20 mA max. load.

**For  $U_{IN} = 1500V$ , the output voltage is 10.0 V DC.**

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Seite: 1/6



## Technical data

Type designation: **BZ830-AC or BZ830-DC** (separate versions for AC or DC usage)

### • Operating voltage

Rated voltage: 24VDC according to EN 50155 (36VDC version=BZ905)  
Voltage range: + 25% / -30%  
Rated current: approx. 75mA  
Protective circuit: Polarity reversal protection diode, overvoltage protection for relay coil.

### • High voltage Input

Voltage range : 0 to max 2000V  
Measuring range: 50V to max. 2000V  
Input Impedance: 1 MOhm

### • Output Relay contacts

Contact number: changeover contact  
Relay type: A, according to EN 50205  
Contact load: ohm = 50V / 1A, inductive = 50V / 0.8A

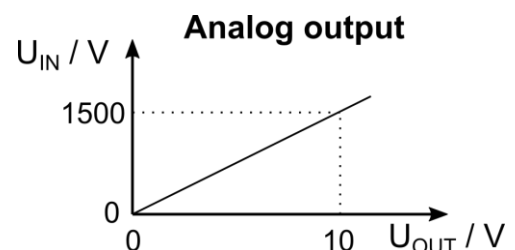
### • Signal output 0-10V DC

The signal output is a linear voltage that varies proportionally to the input voltage 0 and 10 volts. This signal is galvanically isolated, short-circuit-proof and can be used with 20 mA max. load. The cable must be max. 5 meters long and must be shielded.

For  $U_{IN} = 1500\text{ V}$ , the output voltage is 10.0 V DC  
(and rising up to ca. 13.0V at 2000V Input voltage)

### • Voltage profile U-In / U-Out (Tolerance +/-0.2V)

U In	U Out DCV	U In	U Out DCV
100	0.66	900	6.0
200	1.33	1000	6.66
300	2.0	1100	7.33
400	2.66	1200	8.0
500	3.33	1300	8.66
600	4.0	1400	9.33
700	4.66	1500	10.0
800	5.33	2000	13.0



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Index: B  
File: BZ830\_e\_kd.doc

SSim  
RS  
Seite: 2/6

**BZ830**  
Voltage indicator 2000V max.

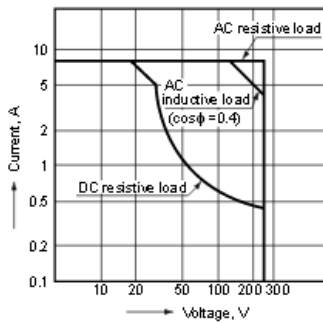
• **Contact load:**

Minimum current: 10mA  
 Relais typ: A  
 Current load limit DC: ohm = 50V/1A, inductive = 50V/0.8A

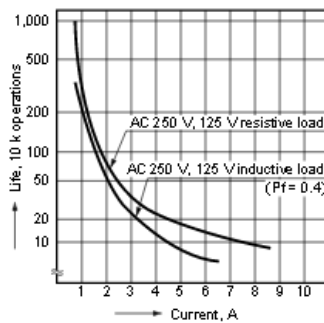
Initial contact resistance, max.		30 mΩ		
Rating (resistive)	Max. switching power	2,000 VA, 150 W		
	Max. switching voltage	380 V AC, 30 V DC		
	Max. switching current	8 A		
HP rating		1/4 HP 125, 250 V AC		
Inrush current capability		51 A (TV-3 equivalence) for 1a1b 35 A (TV-1 equivalence) for 2a		
Expected life (min. operations)	Mechanical (at 180 cpm)		10 <sup>7</sup>	
	Electrical	8 A 250 V AC (resistive)	10 <sup>5</sup>	
		5 A 30 V DC (resistive)	2 × 10 <sup>5</sup>	
		3 A 100 V AC (lamp)	3 × 10 <sup>4</sup>	—
		1 A 100 V AC (lamp)	—	3 × 10 <sup>4</sup>

**REFERENCE DATA**

1. Max. switching power

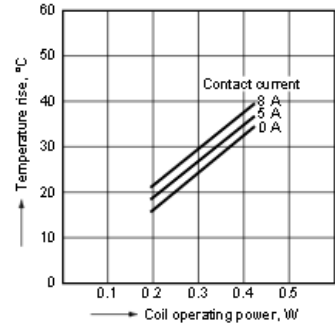


2. Life curve



3. Coil temperature rise

Sample: ST1-DC24V



• **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.



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Created 22.09.2016  
 Modified: 06.05.2020  
 Index: B  
 File: BZ830\_e\_kd.doc

SSim  
 RS  
 Seite: 3/6

BZ830  
 Voltage indicator 2000V max.

## Mechanical data

### • General data

Measures (DxLxH): 120 x 120 x 110 mm  
Max. length : with cables see drawings  
Weight: ca. 1850g (without counter connector)

### • Casing

Form : standing plastic housing for screw mounting, completely encapsulated.

### • Materials

Enclosure: Plastic, black, glass reinforced  
Compound: Resin  
PCB: Epoxy

### • Mounting

In any position  
Fastening : 2 screws M6

### • Connection

Connection type: 14-pin row connector WAGO (codeable)  
On the front of the device: 2 High-voltage Radox cables 9GKW single-wire rigid 1.5mm<sup>2</sup>, each 2 m long

### • Options (optional)

Counter connector 14-pin female row connector: WAGO

## Electronical data

### • Electrical protective measures

Insulation air distance: approx. 40mm  
Insulation creepage distance: approx. 70mm

## Other information

### • Insulation tests

1. Test = High voltage resistance between high voltage input and DC supply ; Test: 2.5 kV DC
2. Test = Puncture resistance of the device against the mounting surface 5000Vpp AC during 60 seconds



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Created 22.09.2016 SSIm  
Modified: 06.05.2020 RS  
Index: B  
File: BZ830\_e\_kd.doc Seite: 4/6

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Voltage indicator 2000V max.

- **Climatic conditions**

Environment temperature : - 40°C...+75°C

- **Disposal**

According to local regulations

- **Enclosure**

Labeling: Block diagram and connection details shown on enclosure side

Humidity: up to 96% rF, at 30°C, non condensing  
Protection: IP 30

KUNDENDOKUMENTATION



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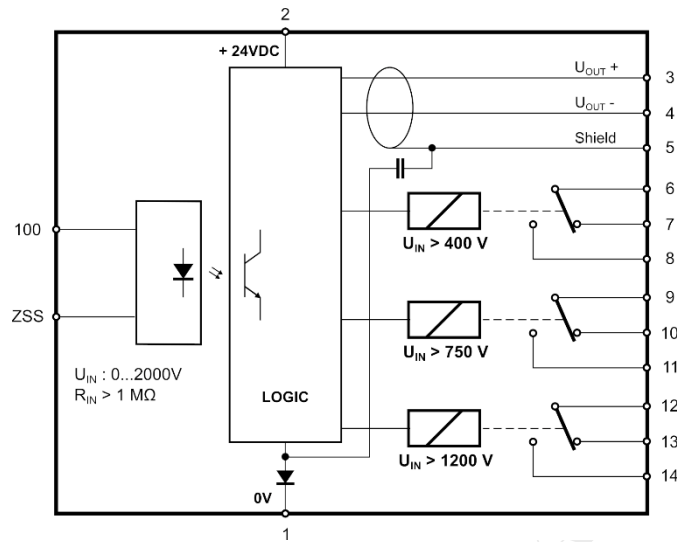
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Modified: 06.05.2020  
Index: B  
File: BZ830\_e\_kd.doc

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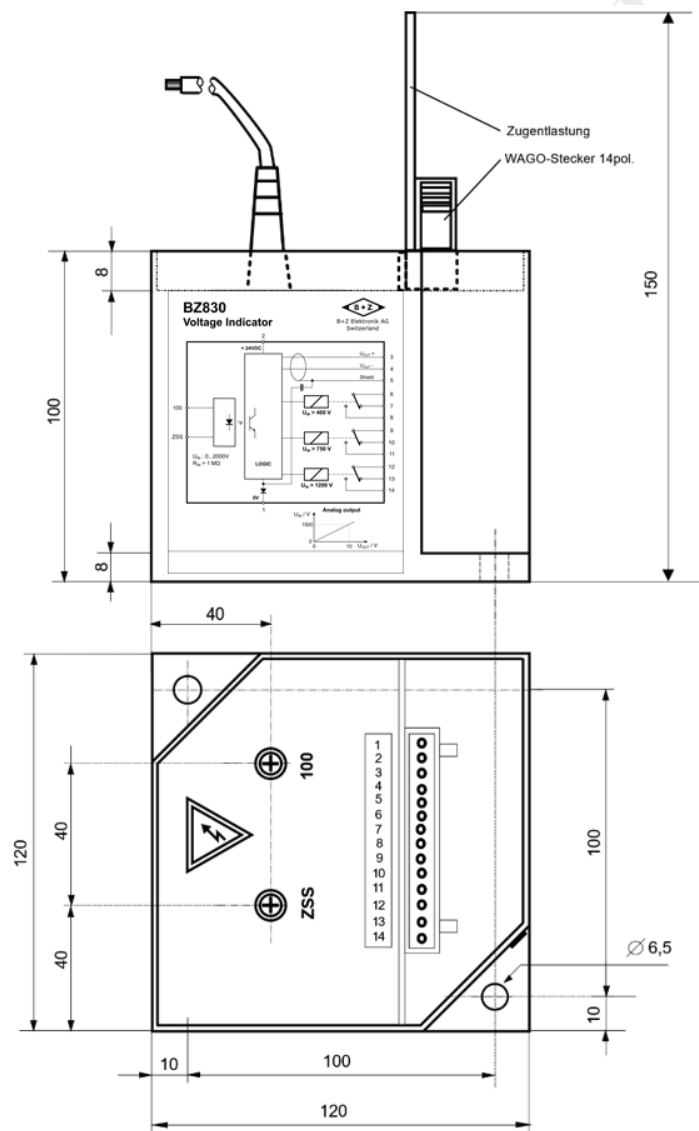
Seite: 5/6

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Voltage indicator 2000V max.

## Block diagram



## Measures



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Created 22.09.2016  
 Modified: 06.05.2020  
 Index: B  
 File: BZ830\_e\_kd.doc

SSim  
 RS

Seite: 6/6

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 Voltage indicator 2000V max.