



## **BZ1-G – Speed relay**

**Manual BZ1-G (Revision A)**

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**Application**

Speed supervision of gensets

**Function**

Via the output frequency of the generator, the BZ1 detects the speed of the genset to be supervised. The re-lay is provided with three independently adjustable elements for ignition speed, under- and overspeed. The rated frequency can be changed from 50 Hz (left stop) to 60 Hz (right stop) by means of potentiometer CAL. At output CAL-A2 a current of 0 - 20 mA in proportion to the speed is available for indication of speed.

**Technical data**

Auxiliary voltage	
Terminals (A1 - A2):	12 V DC, 24 V DC $\pm$ 40 %
Gen. rated frequency:	50/60 Hz, 4 - 500 V AC
Hysteresis:	2 % of fn
Power consumption:	4 VA
Therm. load carrying capacity:	continuous 1.4 x Un
Returning time:	<450 ms
Minimum operating time:	<650 ms
Output current CAL:	0 - 20 mA DC, $R_i \leq 100 \Omega$ , 100 % fn = 15 mA

**Output relays:**

Max. breaking capacity	
Ohmic:	1250 VA AC/150 W DC
Inductive:	500 VA AC/75 W DC
Rated current:	5 A
Making current (16ms):	20 A

**System data:**

Regulations:	VDE 0435 part 303
Temperature range at storage and operation:	- 25°C to + 70°C

**Mechanical stress:**

Shock:	class 1 acc. to DIN IEC 255-21-2
Vibration:	class 1 acc. to DIN IEC 255-21-1
Degree of protection:	IP 40 at closed front cover
Weight:	approx. 0.3 kg
Mounting position:	any

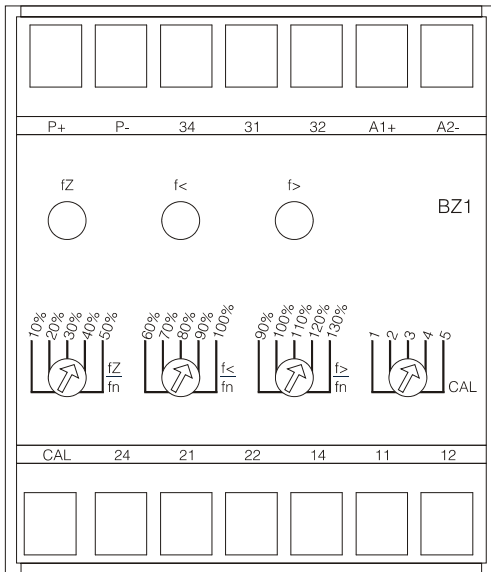


Figure 1: Front plate

The unit BZ1 is designed to be fastened onto a DIN-rail acc. to DIN EN 50022 same as all units of the BASIC LINE.

The front plate of the unit is protected with a sealable transparent cover (IP40). Please remove the transparent cover with a screw driver to adjust the relay.

### LEDs

The LED fZ lights up at ignition speed. The LED f< extinguishes at underspeed. During operation without fault LEDs fZ and f< light up. The LED f> lights up at overspeed.

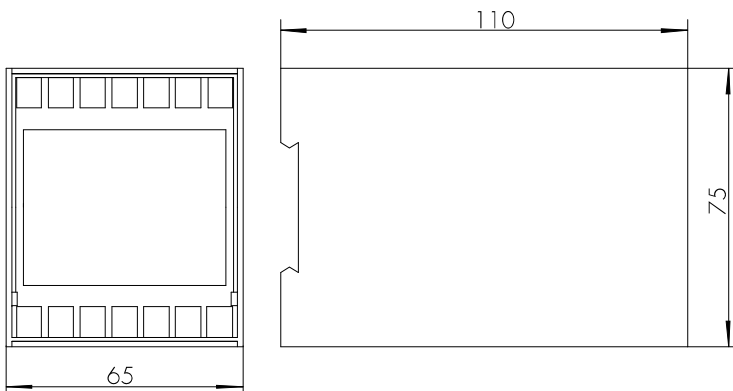


Figure 2: Dimensional drawing of BZ1

**Auxiliary voltage supply**

The unit BZ1 needs a separate auxiliary voltage supply. The supply voltage will be connected to terminals A1 - A2.

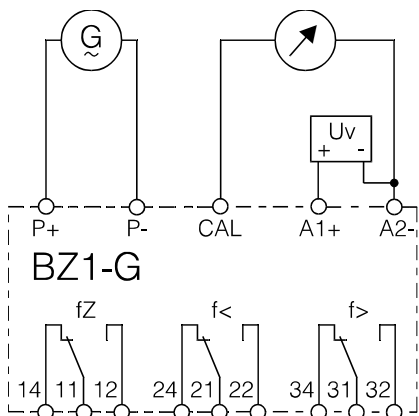


Figure 3: Connection terminals

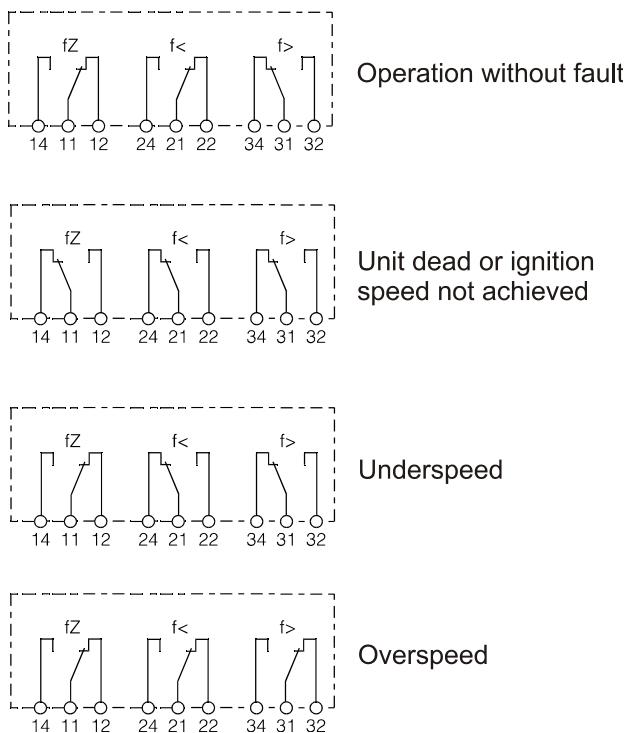


Figure 4: Contact positions

**Connection terminals**

The connection up to a maximum of 2 x 2,5 mm<sup>2</sup> cross-section conductors is possible. For this procedure the transparent cover of the unit has to be removed.

**Setting ranges**

fZ: 10 - 50 % fn  
 f<: 60 - 100 % fn  
 f>: 90 - 130 % fn  
 fn (CAL): 50/60 Hz

**Order form**

<b>Speed relay</b>		<b>BZ1</b>		
Generator	50/60 Hz AC		<b>G</b>	
Pick-up	1 kHz ...10 kHz		<b>P</b>	
Auxiliary voltage	12 V/DC			<b>12</b>
	24 V/DC			<b>24</b>



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