

BZ1-G - Speed relay

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 relay 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 f_n

Power consumption: 4 VA

Therm. load carrying capacity: continuous 1,4 x U_n

Returning time: <450 ms

Minimum operating time: <650 ms

Output current CAL: 0 - 20 mA DC, $R_i \leq 100 \Omega$,
100 % $f_n = 15$ 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 Teil 303

Temperature range at

Storage and operation: - 25°C bis + 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

SEG

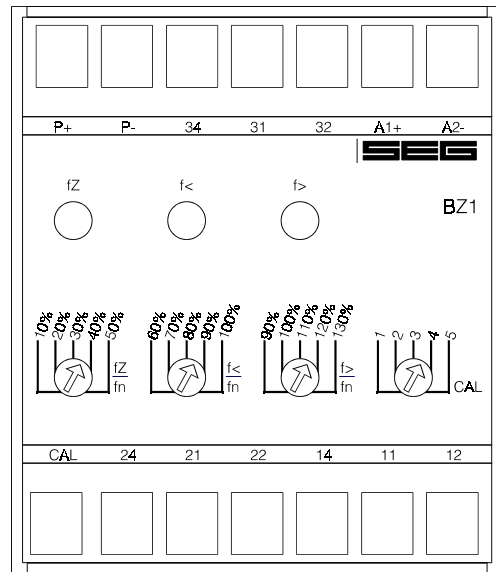


Fig. 1: Front plate

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 plate 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.

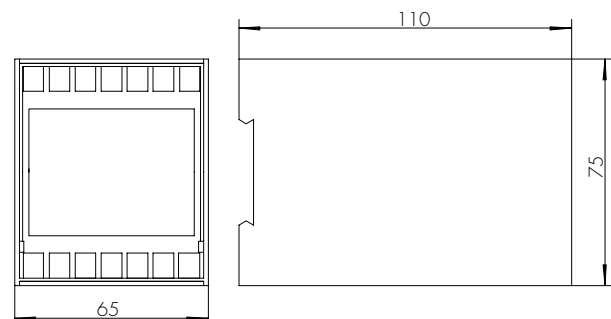


Fig. 2: Dimensional drawing of BZ1



Auxiliary voltage supply

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

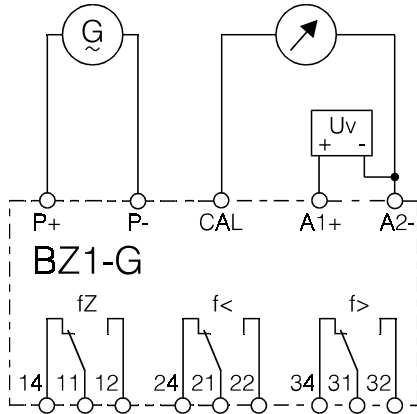
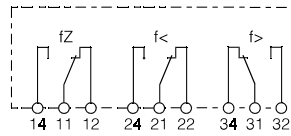
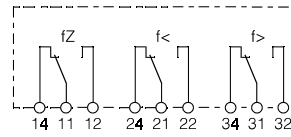


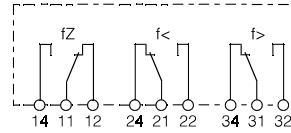
Fig. 3: Connection terminals



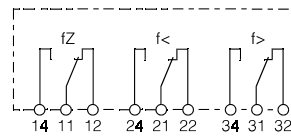
Operation without fault



Unit dead or ignition speed not achieved



Underspeed



Overspeed

Fig. 4: Contact positions

Connection terminals

The connection up to a maximum of $2 \times 2,5 \text{ mm}^2$ cross-section conductors is possible. For this procedure the transparent cover of the unit has to be removed.

Setting ranges

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

Order key

quantity	BZ1-G	-	
Aux. voltage	12 V DC		12
	24 V DC		24



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