MANUAL

Basic Line | PROTECTION TECHNOLOGY MADE SIMPLE

BF1 | FREQUENCY RELAY

FREQUENCY RELAY

Original document

English

Revision: B

Application

Under- and overfrequency supervision of single or three-phase systems.

Function

The unit BF1 is equipped with an independent over- (f>) and underfrequency supervision (f<) with separate adjustable pickup values and trip delays. The measured frequency is continuously compared with the set reference values.
For frequency supervision the cycle duration is evaluated and so measuring is virtually independent on harmonics. To avoid tripping during normal operation due to interference voltages, a fixed measuring repetition is used.

Technical data

rated voltage Un:	110 V, 230 V, 400 V AC
frequency range at	
50 Hz rated frequency:	46 - 54 Hz
60 Hz rated frequency:	55,2 - 64,8 Hz
hysteresis:	0,5% of nominal frequency
power consumption:	3,7 VA
thermal load carrying capacity:	continuously 1,3 x Un
returning time:	250 ms
minimum operating time:	250 ms

Output relays:

max. breaking capacity	
ohmic:	250 V AC/120 W DC
inductive:	500 V AC/75 W DC
rated current:	5 A
making current:	20 A

System data:

regulations:	VDE 0435 part 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. 0,5 kg
mounting position:	any

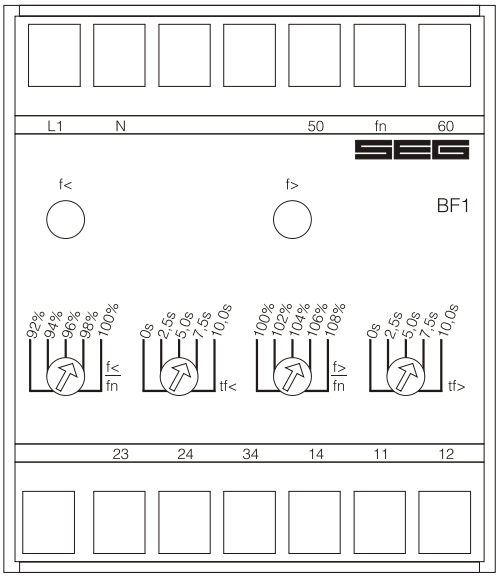


Figure 1: Front plate

The unit BF1 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
LED f< is used to indicate operation without fault with steady light. LEDs f> and f< indicate pickup of the relay by flashing. At underfrequency tripping LED f< extinguishes. LED f> indicates tripping at overfrequency (steady light).

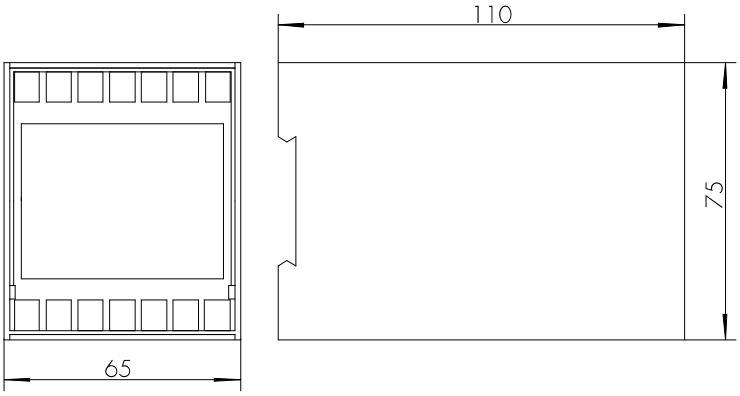


Figure 2: Dimensional drawing of BF1

Auxiliary voltage supply

The unit BF1 needs no separate auxiliary voltage supply. The supply voltage can be formed directly from the measuring quantity.

3 wire system 100 or 110 V and 400 V

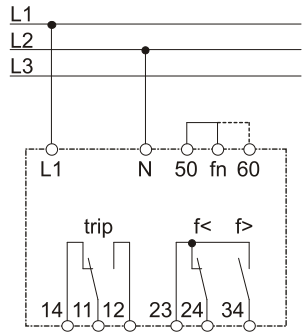


Figure 3: Connection diagram BF1-110

4 wire system 400/230 V

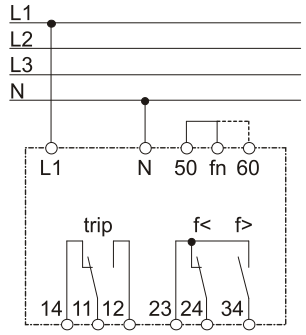
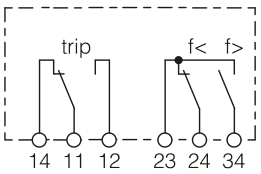
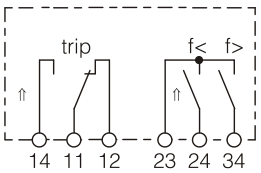


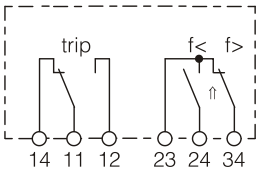
Figure 4: Connection diagram BF1-230



Unit dead
or underfrequency



Operation without a fault



Overfrequency

Figure 6: Contact positions

Connection terminals
The connection up to a maximum of 2 x 2,5 mm² cross-section conductors is possible. For this procedure the transparent cover of the unit has to be removed.

Setting ranges
f<: 92 - 100 %•fn
tf<: 0 - 10 s
f>: 100 - 108 %•fn
tf>: 0 - 10 s

Order form

Frequency relay		***BF1***	
Rated voltage	110 V/AC		**110**
	120 V/AC		**120**
	230 V/AC		**230**
	400 V/AC		**400**

Basic Line

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