

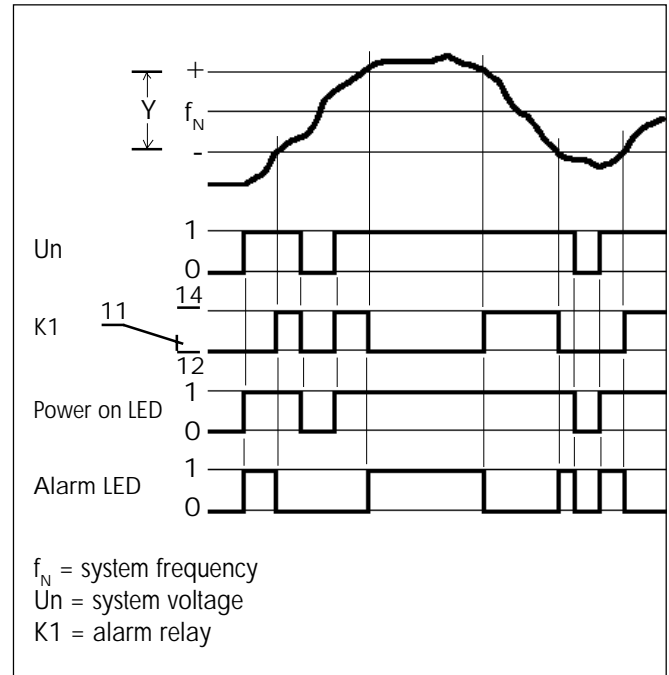


for frequency monitoring in AC systems up to 440 V



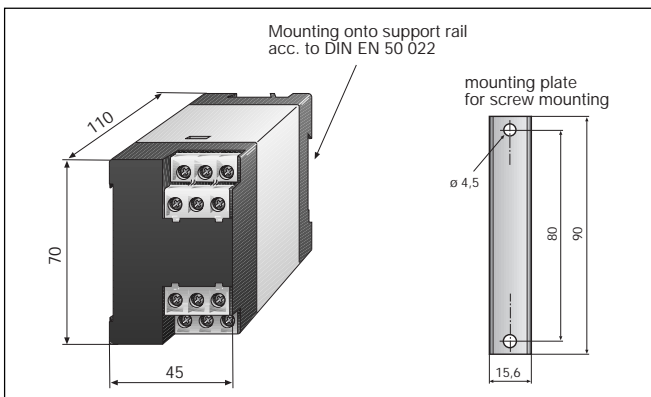
Function

When the system frequency falls below or exceeds the nominal frequency by the response value "Y", the alarm relay K1 deenergizes and the red alarm LED signals " $\Delta f > Y$ ".



- electronic measuring relay
- for frequency monitoring
- no additional supply voltage required
- impulse voltage and electrical disturbance proof according to VDE and IEC
- alarm relay with two change over contacts
- built in power on LED and alarm LED
- crystal stabilized frequency reference
- compact 45 mm casing

Dimension diagram



Technical data SFE140

Insulation coordination acc. to IEC 60664-1:

Rated insulation voltage	AC 440 V
Rated impulse withstand voltage/contamination level	4 kV/3
Dielectric test acc. to IEC 60255	2.5 kV

System being monitored

Nominal voltage of the system U_n	AC 20 ...30 V/35...50 V/85...145 V 160...280V/300...440 V
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Nominal frequency f_n	50/60 Hz
Pre-set by factory	50 Hz

Supply voltage

Max. power consumption	Supplied by the system being monitored 2.5 VA
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Response values

Response value (adjustable in 0.5 Hz steps)	$\pm 0.5... \pm 3$ Hz
Repeat accuracy	0.05%
Influence of ambient temperature	$< 0.05\%/^{\circ}\text{C}$
Delay on response	< 1 sec
Delay on release	< 1 sec

Contact circuit

Switching components	2 change over contacts
Contact class acc. to DIN IEC 60255 Teil 0-20	IIB
Rated contact voltage	AC 250 V/DC 300 V
Admissible number of operations	12000 cycles
Limited making capacity	UC 5 A
Limited breaking capacity	
at AC 230 V and $\cos \phi = 0.4$	AC 3 A
at DC 220 V and $L/R = 0.04$ s	DC 0.3 A
Operating principle	N/C operation

Type tests

Test of the Electromagnetic Compatibility (EMC):

Immunity against electromagnetic

Interferences acc. prEN 50082-2:

Impulse voltage and electrical disturbance test acc. to IEC 60255:

Impulse voltage test acc. to IEC 60255-5	class III
Electrical disturbance test acc. to IEC 60255-5	class III
Emissions acc. to EN 50081-2:	
Emissions acc. to EN 55011/CISPR11	class B ¹⁾
Mechanical tests:	
Shock resistance acc. to IEC 6068-2-27	15 g/11 ms
Bumping acc. to IEC 6068-2-29	40 g/6 ms
Vibration strength acc. to IEC 6068-2-6	10 ... 150 Hz/0.15 mm - 2 g

Environmental conditions

Ambient temperature, during operation	-15°C...+50°C
Storage temperature range	-20°C...+70°C
Climatic class acc. to IEC 60721	3K5, except condensation and formation of ice

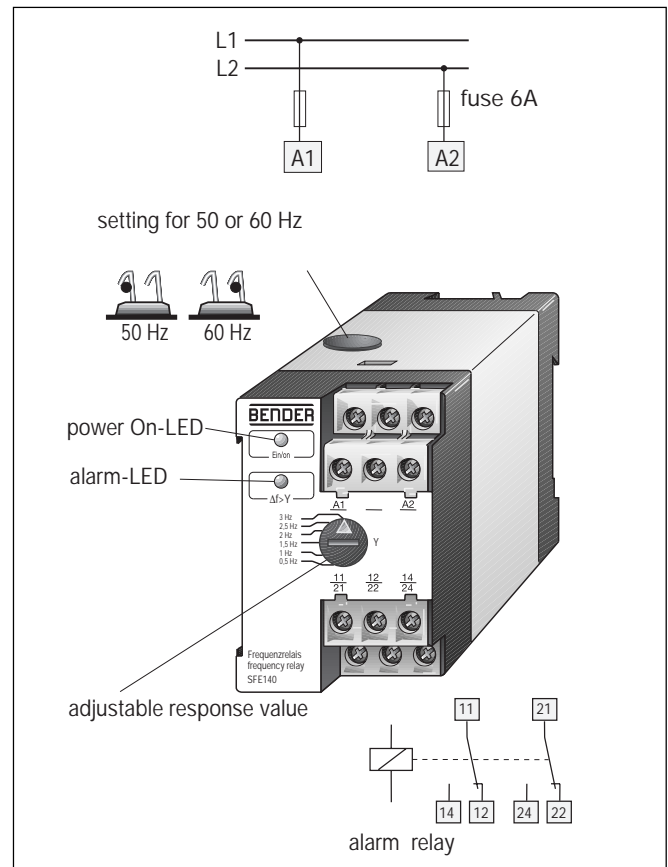
General data

Operation class	continuous operation
Mounting position	any position
Type of connection	terminals with self-lifting clamp-washers
Wire cross section	
single wire	2 x (1...1.5 mm ²)
fine braid	2 x (0,75...1.5 mm ²)
DIN rail	according to DIN EN 50 022 or screw mounting
Protection class acc. to EN 60529	
Internal components	IP 50
Terminals/with terminal covers	IP10/IP 20
Type of casing	X140
Flammability class	UL94V-0
Weight approx.	300 g

¹⁾ Class B devices are suitable for household and industrial use

Right to modifications reserved

Wiring diagram



Safety instructions

Please check for correct mains voltage !

Electrical equipment shall only be installed by qualified personnel in consideration of the current safety regulations.

For short-circuit protection, the network coupling has to be equipped with a protective device according to IEC 364-4-473 (A fuse of 6 A is recommended).

Supplementary to this data sheet you will find enclosed "important safety instructions on the proper use of BENDER products."

Ordering details

Type	Rated system voltage U_n	Art. No.
SFE140	AC 20...30 V	B 925 500
	AC 35...50 V	B 925 501
	AC 85...145 V	B 925 502
	AC 160...280 V	B 925 503
	AC 300...440 V	B 925 504

Other values on request

Ordering details for screw mounting

Type	Art. No.
Mounting plate	R 300 102