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The Power in Electrical Safety©

Frequencyrelays SFE140

for AC systems without external supply voltage

TDB304001en/06.2007

SFE140

Frequencyrelays for AC systems without external supply voltage

SFE140

Device features

- Monitoring of nominal frequencies of 50/60 Hz
- No external supply voltage required
- 5 device variants for the voltage ranges: 20…30 V, 35…50 V, 85…145 V, 160…280 V, 300…440 V
- Setting range ±0.5…±3 Hz
- Power On LED, Alarm LED
- Alarm relay with two potential-free changeover contacts
- 45 mm enclosure

Product description

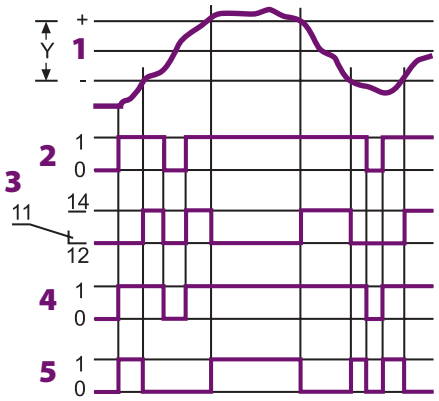
The frequency relays of the SFE140 series monitor AC systems for underfrequency and overfrequency. External supply voltage is not required. The response value can be set by means of a rotary switch.

Typical applications

- Monitoring of generators
- Monitoring of electrical energy supply systems

Function

If the system frequency f exceeds the set response value Y, the alarm relay de-energizes and the alarm LED lights. If the measured quantity drops below the release value, the alarm relay switches back to its original state.



1 - System frequency f_n
2 - System voltage U_n
3 - Alarm relay
4 - Power On LED
5 - Alarm LED

Ordering information

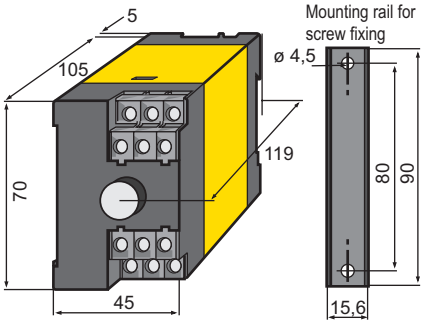
Nominal system voltage U_n AC	Type	Art. No.
20…30 V, 50/60 Hz	SFE140	B 925 500
35…50 V, 50/60 Hz	SFE140	B 925 501
85…145 V, 50/60 Hz	SFE140	B 925 502
160…280 V, 50/60 Hz	SFE140	B 925 503
300…440 V, 50/60 Hz	SFE140	B 925 504

Ordering information

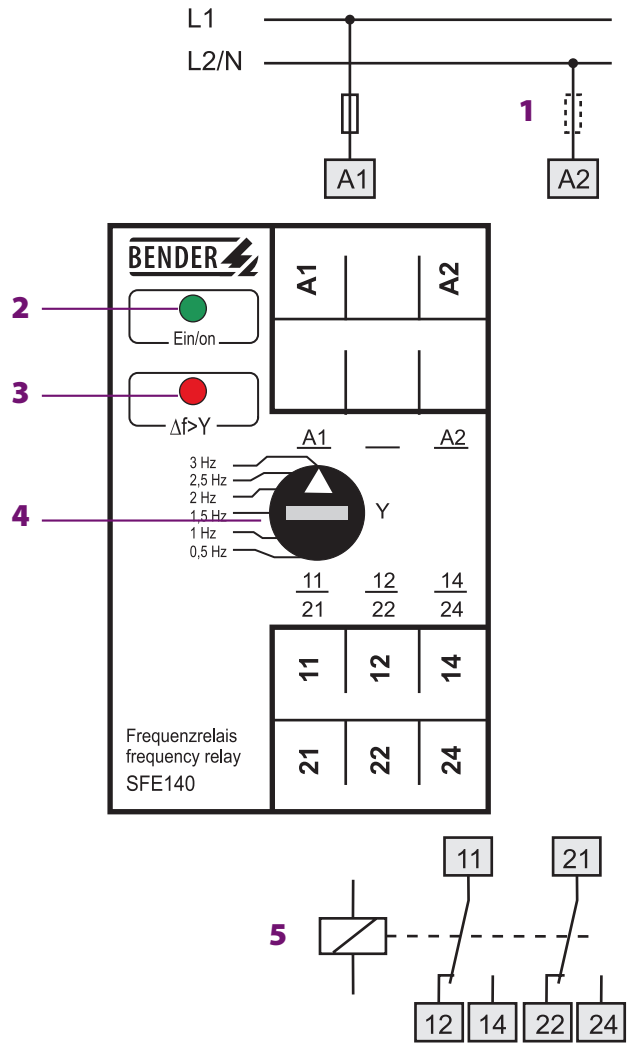
Type designation	Art. No.
Mounting rail for screw fixing	B 974 728

Dimension diagram X140

Dimensions in mm

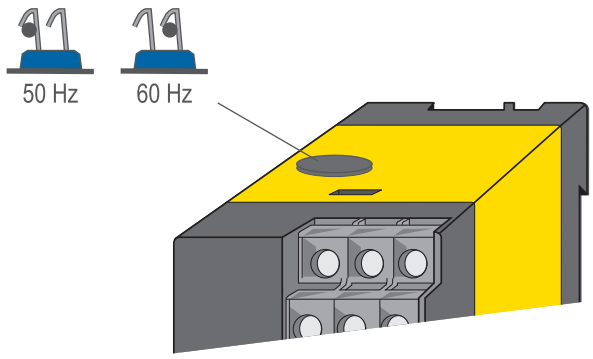


Wiring diagram



1 - 6 A fuse
2 - Power On LED “Ein/on”
3 - Alarm LED “f>Y”
4 - Adjustable response value
5 - Alarm relay

Setting for 50 or 60 Hz



Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 440 V
Rated impulse voltage/pollution degree	2.5 kV/3
Power consumption	≤ 3 VA

Measuring circuit

Nominal system voltage U_n	see ordering information
Frequency f_n	50/60 Hz (50)*
Response value	±0.5…±3 Hz
Response time t_{an}	< 1 s
Hysteresis	< 8 %
Delay on release	< 1 s
Repitition accuracy	±0.5 %
Temperature influence	< 0.05 %/°C

Switching elements

Number of changeover contacts	1 x 2
Operating principle	N/C operation
Electrical service life, number of cycles	12000
Contact class IEC 60255 Part 0-20	IIB
Rated contact voltage	AC 250 V/DC 300 V
Limited making capacity	AC/DC 5 A
Breaking capacity	2 A, AC 230 V, cos phi 0.4 0.2 A, DC 220 V, L/R = 0.04 s

Environment/EMC

EMC immunity	acc. to IEC 61000-6-2
EMC emission	acc. to IEC 61000-6-4
Shock resistance IEC 60068-2-27 (during operation)	15 g/11 ms
Bumping IEC 60068-2-29 (during transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (during operation)	1 g / 10…150 Hz
Vibration resistance IEC 60068-2-6 (during transport)	2 g / 10…150 Hz
Ambient temperature (during operation)	-15…+50 °C
Ambient temperature (during storage)	-20…+70 °C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

Connection

Connection	Flat terminals with self-lifting clamp washers
Connection properties	
single wire	2 x (1…1.5) mm²
flexible without end ferrule	2 x (0.75…1.5) mm²

Other

Operating mode	continuous operation
Mounting	any position
Degree of protection, internal components (IEC 60529)	IP50
Degree of protection, terminals/with terminal covers (IEC 60529)	IP10/IP20
Screw fixing	with mounting rail
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Product standard	IEC 60255-6
Operating manual	BP304001
Weight	≤ 300 g

( )* factory setting

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