

Asymmetry relay SAD142

for 3AC systems without external supply voltage





SAD142

Device features

- Monitoring of 3NAC systems for asymmetry and phase failure
- No external supply voltage required
- Adjustable response value 5...15 %
- Device variants for nominal system voltages of:
3AC 110 V, 230 V, 400 V, 440 V
- Power On LED, Alarm LED
- Alarm relay with two potential-free changeover contacts
- 45 mm enclosure

Note

In case of new installations refer to VMD420.

Product description

The relays of the SAD142 series are designed to monitor 3AC systems for asymmetry and for phase failure.

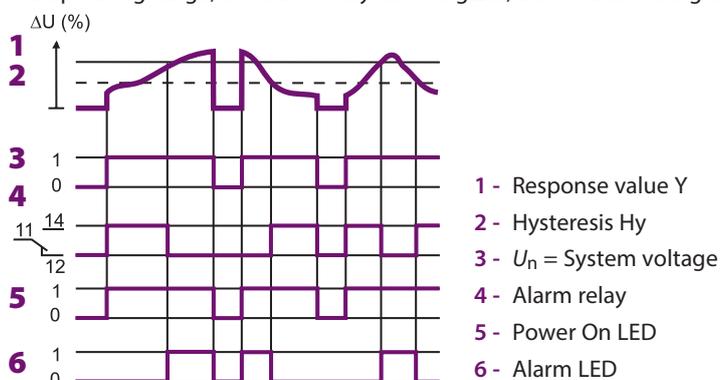
External supply voltage is not required.

Typical applications

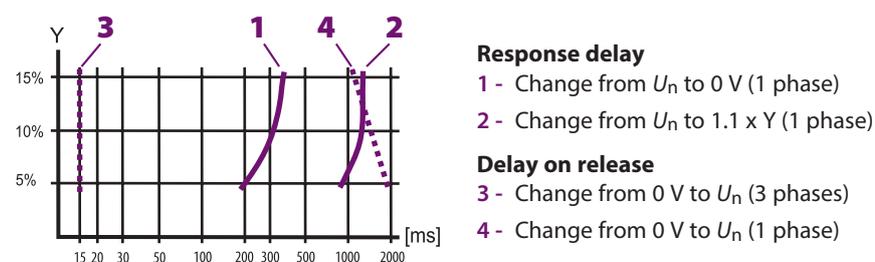
- Monitoring of the power supply of motors or electrical installations
- Monitoring of asymmetrically loaded systems
- Phase failure detection

Function

When supply voltage is applied, the alarm relay works in N/C operation (relay energized). When the difference of the phase-to-phase voltage (asymmetry) exceeds the set response value, the alarm relay de-energizes and the green alarm LED “%ΔUVW>Y” lights. If the measured quantity drops below the release value, the alarm relay switches back to its original state. When the voltage of all phases symmetrically drops below the response value of the operating range, the alarm relay de-energizes, but no alarm is signalled.



Start-up delay and delay on release



Ordering information

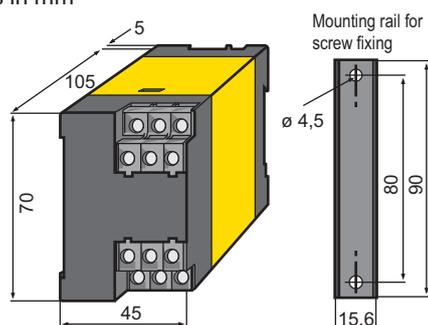
Nominal system voltage U_n	Type	Art. No.
3AC		
110 V	SAD142	B 935 508
230 V	SAD142	B 935 164
400 V	SAD142	B 935 125
440 V	SAD142	B 935 646

Accessories

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

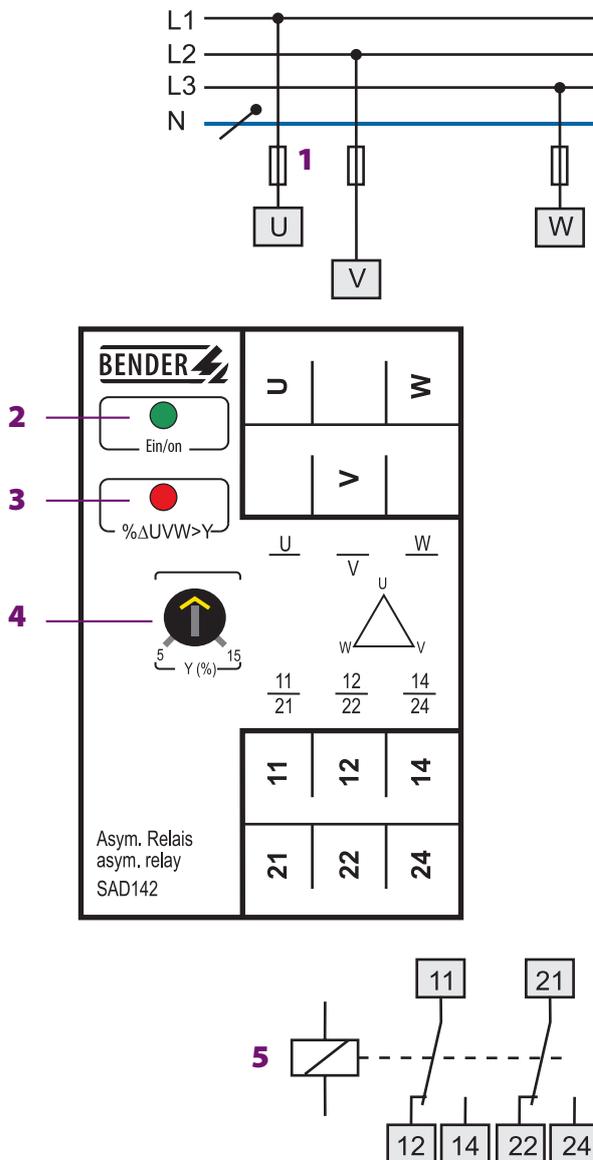
Dimension diagram X140

Dimensions in mm





Wiring diagram



- 1 - 6 A fuse
- 2 - Power ON LED "Ein/on"
- 3 - Alarm LED "UVW>Y"
- 4 - Adjustable response value "Y(%)"
- 5 - Alarm relay

Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 440 V
Rated impulse voltage/pollution degree	4 kV/3

Supply voltage

Supply voltage U_s	none
Power consumption	≤ 2.5 VA

Measuring circuit

Nominal system voltage U_n	3AC 110 V 3AC 230 V 3AC 400 V 3AC 440 V
Operating range of U_n	0,7...1.15 x U_n
Frequency f_n	50...60 Hz
Response value asymmetry	5...15 % (L-L)
Response time t_{an}	see diagram
Hysteresis	< 3 %
Delay on release	see diagram
Repetition accuracy	± 2 %
Temperature influence	< 0.05 %/°C
Frequency influence	< 0.1%/Hz

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) mm ²
flexible with end ferrules	2 x (0.75...1.5) mm ²

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	BP302002
Weight	≤ 300 g



Bender GmbH & Co. KG

P.O. Box 1161 • 35301 Gruenberg • Germany
Londorfer Strasse 65 • 35305 Gruenberg • Germany
Tel.: +49 6401 807-0 • Fax: +49 6401 807-259
E-Mail: info@bender.de • www.bender.de



BENDER Group