USEA200 / USEA201

USEA201

Device features

- For high-voltage and medium-voltage systems
- Adjustable response value 0.3…0.7 x U_n
- Adjustable alarm off value 0.5…0.99 x U_A
- Response delay 0.5…5/2…20 s
- N/O or N/C operation, selectable
- Fault memory behaviour selectable
- Internal/external reset button
- Power On LED, Alarm LED
- 2 potential-free changeover contacts

Product description

The relays of the USEA200/201 series are designed to monitor medium-voltage or high-voltage systems for earth faults. The devices are connected to auxiliary windings in open delta connection of standard earth voltage transformers using U_n 100 V or 110 V. The adjustable response sensitivity allows resistive earth faults to be recognized.

Application

- Monitoring of medium-voltage and high-voltage systems for single-pole earth faults.

Function

The voltage shift occurring at the earth voltage transformer is measured at the terminals n and e. If the shift voltage exceeds the set response value, the alarm relay switches after the response delay t_V has elapsed and the alarm LED > U_A lights up. If the earth fault vanishes before the response delay has elapsed (transient earth fault), the relay does not trip. If the value of the shift voltage drops below the set release value, the alarm relay switches back to its original state. The operating principle of the alarm relays can be selected.

If a bridge or an external rest button (N/C contact) is connected to the terminals LT1/LT2, the earth fault messages will be stored. After eliminating the earth fault, the fault memory can be reset by pressing the reset button.

3.6

Technical data earth fault relay USEA200 / USEA201

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 250 V
Rated impulse voltage/pollution degree	4 kV/3

Supply voltage

Supply voltage U_S	see ordering information
Operating range U_S	0.8…1.2 x U_S
Power consumption	≤ 5 VA
Operating range of of the secondary circuit U_n	0…1.3 U_n; 200 V (2 min)

Measuring circuit

Transformer voltage secondary circuit U_n	AC 100 V or 110 V
Frequency range of U_n	50…60 Hz
Operating range U_n	0…1.3 U_n
Response value U_A	0.3…0.7 x U_n
Alarm off value U_R	0.5…0.99 x U_n
Response delay t_V	
USEA200	0.5…5 s
USEA201	2…20 s
Switching elements	
Number of switching elements	1 x 2 changeover contacts
Operating principle	N/C operation / N/O 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

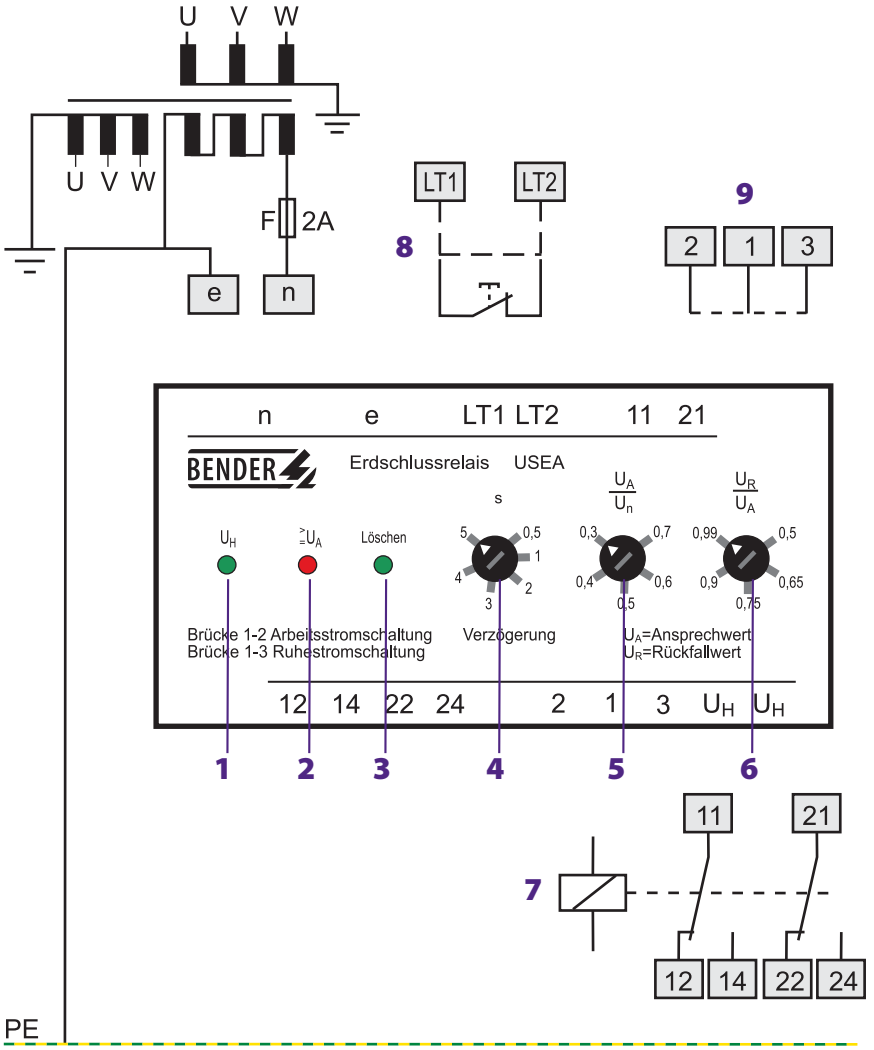
Environment / EMC

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	-10…+50 °C
Ambient temperature, during storage	-20…+70 °C
Climatic class acc. to DIN IEC 60721-3-3	3K5

Other

Operating mode	continuous operation
Mounting	any position
Connection	Flat terminals with self-lifting clamp washers
Connection properties	
single wire	2 x (1…1.5) mm²
flexible with end ferrules	2 x (0.75…1.5) mm²
Degree of protection, internal components (IEC 60529)	IP50
Degree of protection terminals (IEC 60529)/with terminal covers	IP10/IP20
Screw fixing	refer to dimension diagram
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Operating manual	BP308006
Weight	≤ 360 g

Wiring diagram



1 - Power ON LED "U_H"
2 - Alarm LED "U_A"
3 - Internal reset button "Reset"
4 - Built-in potentiometer for setting the time delay "s"
5 - Built-in potentiometer for setting the response value "U_A/U_n"
6 - Built-in potentiometer for setting the alarm off value "U_R/U_A"
7 - Alarm relay
8 - External reset button "LT1/LT2" Closed (fault memory behaviour)
9 - Bridge 1-2 N/O operation
Bridge 1-3 N/C operation

3.6

Ordering information

Type	Response delay t_V	Supply voltage U_S	Transformer voltage U_n	Art. No.
USEA200	0.5…5 s	AC/DC 24 V	AC 100 V	B 915 559
USEA200	0.5…5 s	AC/DC 24 V	AC 110 V	B 915 205
USEA200	0.5…5 s	AC/DC 60 V	AC 100 V	B 915 558
USEA200	0.5…5 s	AC/DC 60 V	AC 110 V	B 915 204
USEA200	0.5…5 s	AC/DC 110 V	AC 100 V	B 915 555
USEA200	0.5…5 s	AC/DC 110 V	AC 110 V	B 915 203
USEA201	2…20 s	AC/DC 24 V	AC 100 V	B 915 562
USEA201	2…20 s	AC/DC 24 V	AC 110 V	B 915 208
USEA201	2…20 s	AC/DC 60 V	AC 100 V	B 915 561
USEA201	2…20 s	AC/DC 60 V	AC 110 V	B 915 207
USEA201	2…20 s	AC/DC 110 V	AC 100 V	B 915 560
USEA201	2…20 s	AC/DC 110 V	AC 110 V	B 915 206

Dimension diagram X200

Dimensions in mm