

Product description

The UG-ISOMETERS USGH150ARY and USGG150ARY are for the continuous earth fault monitoring with automatic fault location in unearthed DC networks and are primarily used for DC control circuits.

Pure as well as pulsating DC voltages obtained by a bridge rectifier can be monitored.

Function

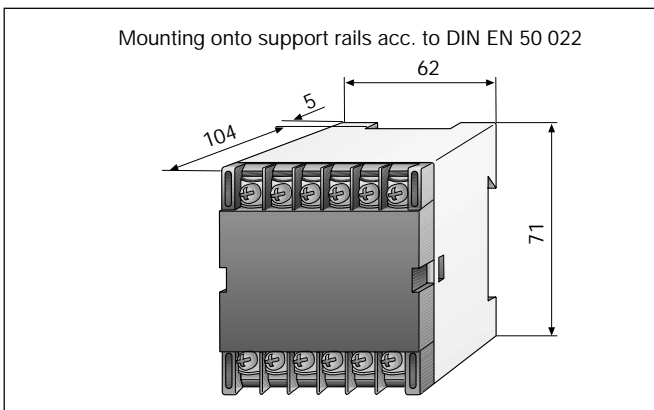
The UG-ISOMETERS USGH150ARY and USGG150ARY use a bridge circuit for automatic fault indication. The voltage shift is measured when an earth fault of a mains conductor is detected. An electronic circuitry evaluates the earth fault by comparing its voltage shift with a reference voltage. As the reference voltage is automatically adjusted to the system voltage, tripping behaviour will be nearly independent of voltage variations.

When the preset response value is reached, the alarm relay will deenergize (N/C operation) and the built-in alarm LEDs signal earth fault at <+> or earth fault at <->.

With this measuring principle, only unbalanced earth faults can be detected. Symmetrical insulation faults of the same positive and negative value to earth cannot be detected.

- ⇒ earth fault relay for unearthed DC networks 24 ... 220 V
- ⇒ supply voltage AC 230 V
- ⇒ two built-in test buttons and one reset button
- ⇒ two built-in alarm LEDs for fault location
- ⇒ built-in operation LED
- ⇒ response range: 20 ... 200 kΩ
- ⇒ measuring principle: asymmetry measuring method
- ⇒ alarm relay with one change-over contact in N/C or N/O operation

Dimension Diagram



Technical data USGH150ARY, USGG150ARY

Insulation coordination acc. to IEC 664-1

Rated insulation voltage	500 V
Rated impulse withstand voltage/ contamination level	4 kV/3
Test voltage acc. to IEC 255-5	2 kV

Network being monitored

Rated mains voltage U_N	DC 19,2 ... 308 V
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Supply voltage

Supply voltage U_S	
USGH150ARY	AC 50...60 Hz 230 V
Operating range of U_S AC	0.85 ... 1.05 x U_S
USGG150ARY	DC voltage see name plate
Operating range of U_S DC	see ordering details resp. nameplate
Max. power consumption	approx. 4 VA

Response values

Response value R_{ALARM}	20 ... 200 k Ω
Response times	< 1 sec.
Max. mains leakage capacitance	1 μ F

Measuring circuit

Measuring current I_M (DC 308 V)	1,7 mA
Internal DC resistance R_I acc. DIN 57413 T8 VDE 0413 T8	235 k Ω

Contact circuit

Switching components	2 change over contacts
Contact class acc. to DIN IEC 255 Teil 0-20	II B
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 2 A
at DC 220 V and $L/R = 0.04$ s	DC 0.2 A
Operating principle	selectable N/O / N/C operation
Pre-set by factory	N/C operation

Type tests

Test of the Electromagnetic Compatibility (EMC):

Immunity against electromagnetic

Interferences acc. EN 50082-2:

Emissions acc. to EN 50081:

Emissions acc. to EN 55011/CISPR11	class B ¹⁾
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Mechanical tests:

Shock resistance acc. to IEC 68-2-27	15 g/11 ms
Bumping acc. to IEC 68-2-29	40 g/6 ms
Vibration strength acc. to IEC 68-2-6	10 ... 150 Hz/0.15 mm - 2 g

Environmental conditions

Ambient temperature, during operation	-10°C ... +60°C
Storage temperature range	-20°C ... +60°C
Climatic class acc. to IEC 721	3K5, except condensation and formation of ice

General data

Operation class	permanent operation
Mounting	onto supporting rail acc. to DIN EN 50 022
Type of connection	terminal screws with self-lifting clamp washers
Wire cross section	
single wire	0.2 ... 4 mm ²
fine braid	0.2 ... 2.5 mm ² (AWG 24 - 12)
Rapid mounting	
Protection class acc. to EN 60529	
Internal components	IP 30
Terminals with terminal covers	IP 20
Type of casing	X 150
Flammability class	UL94V-0
Weight approx.	300 g

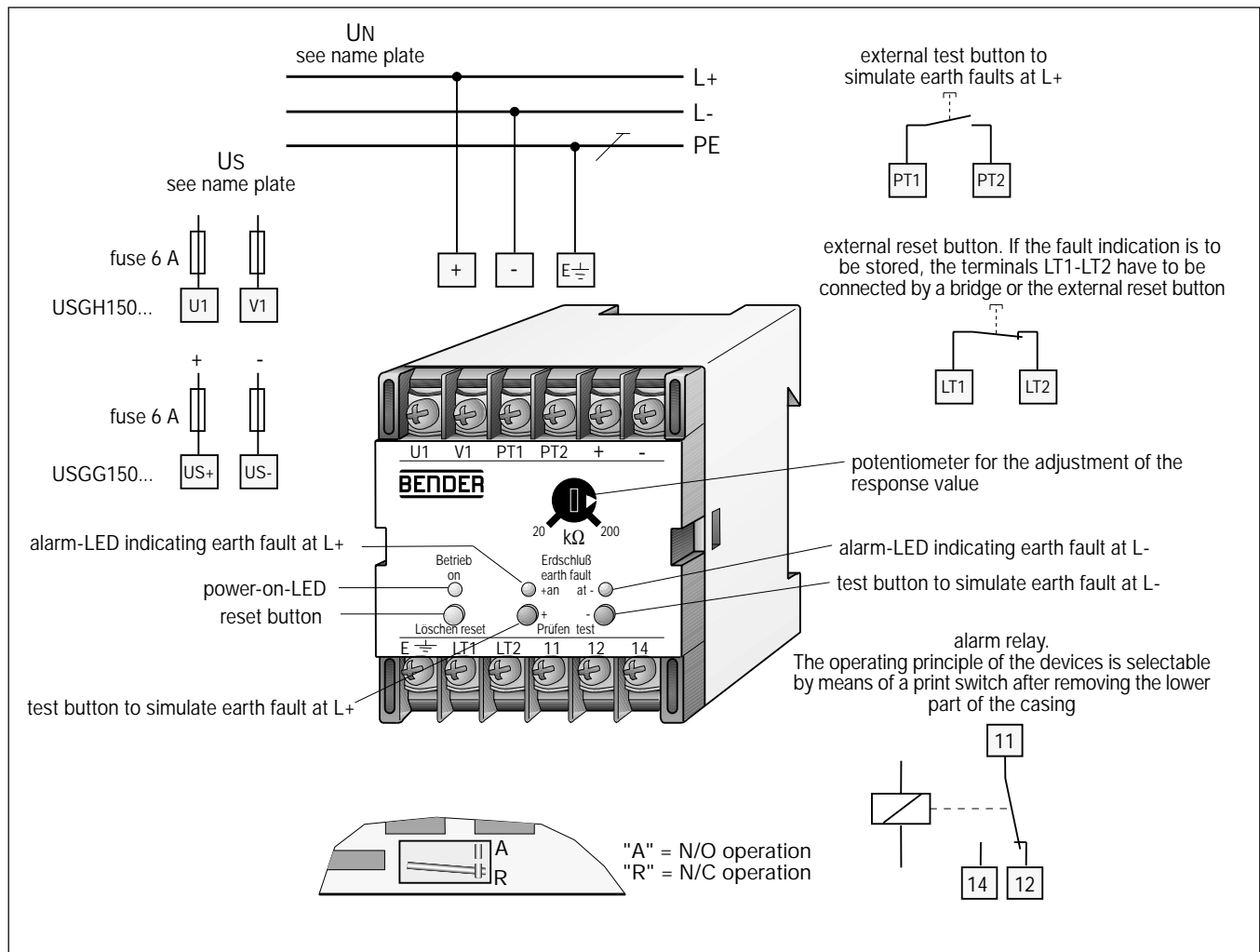
Ordering details

Type	Rated mains voltage U_N	Supply voltage U_S	Art. No.
USGH150ARY	DC 19,2 ... 308 V*	AC 230 V	916 560
		AC 110 V	9 165 604
		AC 60 V	9 165 603
		AC 42 V	9 165 602
		AC 24 V	9 165 601
USGG150ARY	DC 19,2 ... 308 V*	DC 220 V	916 570
		DC 110 V	916 571
		DC 60 V	916 569
		DC 10 ... 80 V*	916 567

* Absolute value of the voltage range

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

Wiring diagram



Please note



Please check correct mains voltage !



Only one earth fault monitoring device may be used in each interconnected system.

In order to check the proper connection of the device, it is recommended to carry out a functional test using a genuine earth fault, e.g. via a suitable resistance, before starting operation.

When insulation and voltage tests are to be carried out, the device must be isolated from the system for the test period.



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

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

For short-circuit protection network coupling and connection monitoring according to IEC 364-4-473 is not necessary when the wiring has been installed short-circuit and earth-fault proof; i.e. that the risk of a short-circuit is reduced to the absolute minimum.

Additionally to this data sheet, you will find enclosed „Important safety instructions for Bender products.“

Right to modification reserved