



Earth Fault Relay for IT DC Systems (Isolated Power)



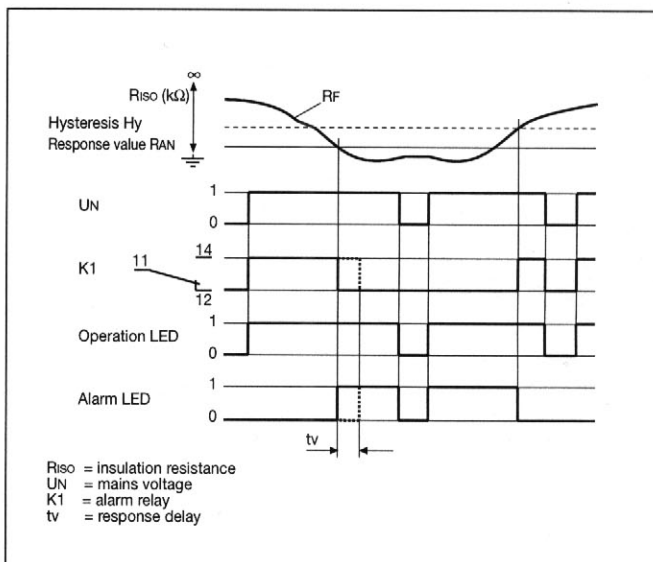
## Function

The UG-ISOMETER UG144P monitors the insulation resistance of IT DC systems (isolated power) to earth. The voltage shift to earth produced by an earth fault is picked up by a measuring bridge and then evaluated by electronic measuring circuitry.

As soon as the preselected response value is reached, the output relay K1 deenergizes and the red alarm LED signals earth fault.

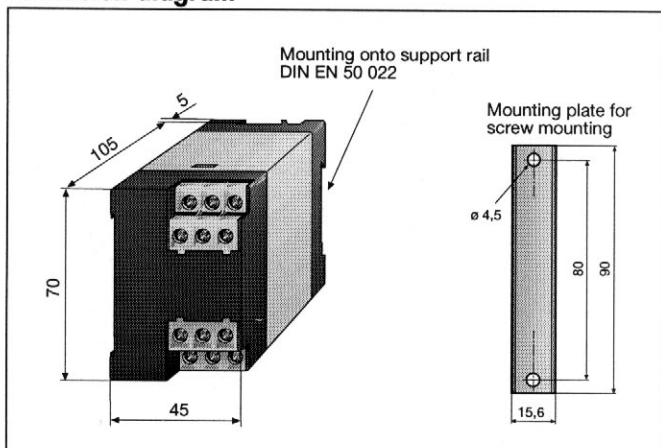
With this measuring principle, only unbalanced earth faults can be detected. Symmetrical insulation faults of the same positive and negative value to earth cannot be detected.

## Function diagram



- earth fault relay for IT DC systems (isolated power) up to 24 V
- for system leakage capacitances up to 50  $\mu\text{F}$
- response delay 5 s
- impulse-voltage and electrical disturbance proof according to VDE and IEC
- alarm relay with two change-over contacts
- built-in operation LED
- built-in alarm LED
- built-in test button
- built-in reset button
- compact 45 mm casing
- measuring principle: asymmetry measuring method

## Dimension diagram



## Please note

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 resistor, before starting the operation.

Please check correct mains voltage !

Only one insulation monitor may be used in each interconnected system. When insulation and voltage tests are to be carried out, the device must be isolated from the system for the test period.

## Technical data UG144P

### Insulation

Insulation coordination acc. to DIN VDE 0110 T.1	
Rated insulation voltage	DC 300 V
Rated impulse withstand voltage/	
Contamination level	4 kV/3
Operation class	permanent operation

### Network being monitored

Rated mains voltage $U_N$	DC 24 V
Operating range	0.9 ... 1.4 $U_N$
Self consumption	2.7 W

### Response values

Response value $R_{AN1}$	4 k $\Omega$
Response delay	5 s
Max. mains leakage capacitance	50 $\mu$ F
Adjustment by factory	-

### Measuring circuit

Measuring voltage $U_M$	-
Measuring current $I_M$	1 mA
Internal DC resistance $R_i$ , acc. to DIN VDE 0413	23 k $\Omega$
Internal measuring resistance	-
Impedance $Z_i$ , 50 Hz, DIN VDE 0413	-
Max. admissible stray DC voltage	-

### Outputs

Meter output SKMP	-
Current output (max. load)	-
Terminal AK for coupling device	-

### Contact circuit

Switching components	two change-over contacts
Contact class	IIB acc. to IEC 255-0-20
Rated contact voltage	AC 250 V/DC 300 V
Admissible number of operations	12000 cycles
Limited making capacity	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	N/C operation
Adjustment by factory	-

### Tests acc. to DIN VDE 0435, T. 303 and IEC 255

Dielectric test:	
Test voltage	2 kV
Impulse voltage test	class III
Electrical disturbance test	class III
Vibration test	-

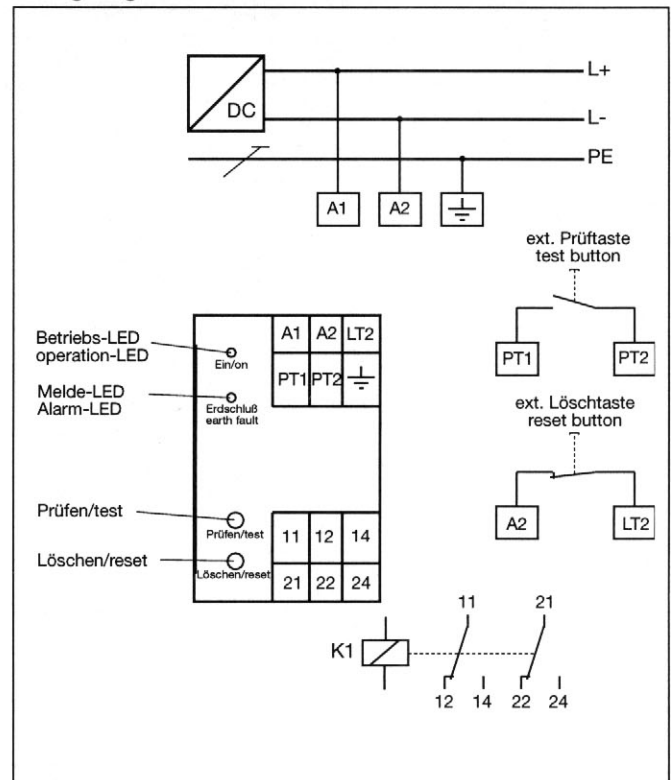
### Environmental conditions

Ambient temperature, during operation	-15°C ... +50°C, 253 K ... 323 K
Storage temperature range	-20°C ... +70°C, 253 K ... 343 K
Climatic class acc. to DIN 40040	-

### General data

Mounting	as desired
Front plate width	-
Type of connection	terminal screws with self-lifting clamp washers, M 3.5
Wire cross section	
single wire	2x(1 ... 1.5 mm <sup>2</sup> )
fine braid	2x(0.75 ... 1.5 mm <sup>2</sup> )
Rapid mounting	on supporting rail DIN EN 50 022
Screw mounting	accessories: mounting plate Art. No. 300 102
Protection class acc. to DIN 40050	
Internal components	IP 50
Terminals/with terminal covers	IP 10/IP 20
Type of casing	X 140
Flame class	UL94V-0
Weight approx.	200 g
Wiring diagram	Z 120 522

## Wiring diagram



### Legend to wiring diagram

If the fault indication is to be stored, the terminals A2-LT2 must be linked by a bridge or an external reset button.

K1 output relay

### Ordering details

Type	Rated mains voltage $U_N$	Art. No.
UG144P	DC 24 V	916 3262

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