



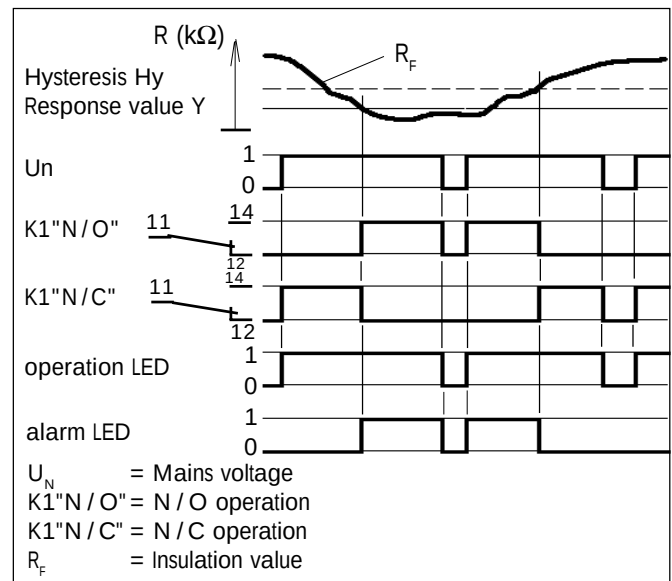
- insulation monitor for AC auxiliary networks
- impulse voltage and electrical disturbance proof according to VDE and IEC
- output relay with two change-over contacts
- built-in operation LED
- built-in alarm LED
- built-in test button
- built-in reset button
- two response values
- compact 45 mm casing

Product description

The A-ISOMETER IRG143P monitors the insulation resistance of an unearthed AC system (IT network) to earth.

Function

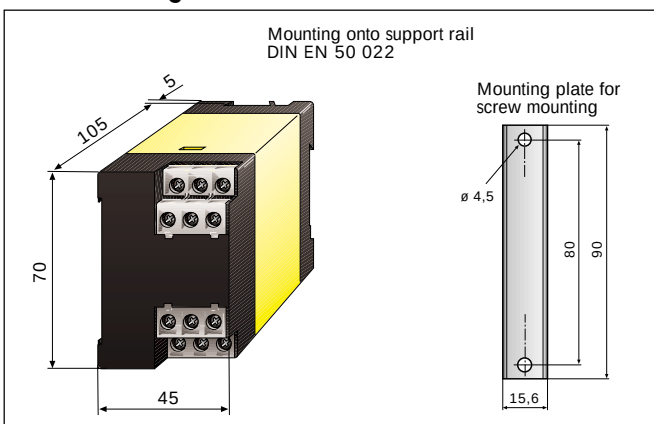
A DC measuring voltage is generated and the positive pole is connected to the system via coupling elements. The negative pole is connected to earth by an electronic circuitry. The measuring circuit is closed via insulation faults between the network and earth.



As soon as the preset response value is reached, the output relay K1 reacts and the red alarm LED signals <earth fault>.

In addition DC supplied components, such as electromagnetic valves, may be connected to the system to be monitored. Note that DC faults are indicated with a continuously increasing response sensitivity in both current directions. The preset response values apply to the pure AC system only.

Dimension diagram



Note

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

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 in the installation, the device must be isolated from the system for the test period.

Each device is supplied with terminal covers for protection against electric shock. If these covers are not used, other suitable protection measures must be observed in accordance with the accident prevention regulations.

Technical data IRG143P

Insulation

Insulation coordination acc. to DIN VDE 0110 T.1	
Rated insulation voltage	AC 250 V
Rated impulse withstand voltage /	
Contamination level	4kV / 3
Operation class	permanent operation

Network being monitored

Rated mains voltage U_n	AC 50 ... 60 Hz, 230, 110, 42, 24 V
Operating range	0.8 ... 1.15 U_n
Self-consumption	3 VA

Response values	230	110	42	24 V
Response value R_{AN1} *	100/900*	40/380*	10/120*	6/60* k Ω
Response value R_{AN2}	22	11	4.2	2.4 k Ω
Response delay				< 1 sec
Adjustment by factory				R_{AN1}

Measuring circuit U_n	AC 230	110	42	24 V
Measuring voltage U_M	DC 22	17	6	6 V
Measuring current I_M	0.28	0.23	0.24	0.24 mA
Internal DC resistance R_i	78	74	26	23 k Ω
Impedance Z_i , 50 Hz				
DIN VDE 0413	63	63	16	16 k Ω
Max. admissible stray DC voltage				1.2 U_n

Contact circuit

Switching components	two change-over contacts
Switching capacity max.	33 W, 1250 VA
Rated contact voltage	250 V
Permanent current	5 A
Break capacity	
AC 230 V and $\cos \phi = 0.4$	2 A
DC 110 V and $L/R = 0$	0.5 A
Operating principle	N / C or N / O operation
Adjustment by factory	N / C operation

Tests acc. to DIN VDE 0435, Teil 303 / IEC 255

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

Environmental conditions

Ambient temperature, during operation	-15°C ... +50°C, 258 K ... 323 K
Storage temperature range	-20°C ... +70°C, 253 K ... 343 K
Climatic class acc. to DIN 40040	-

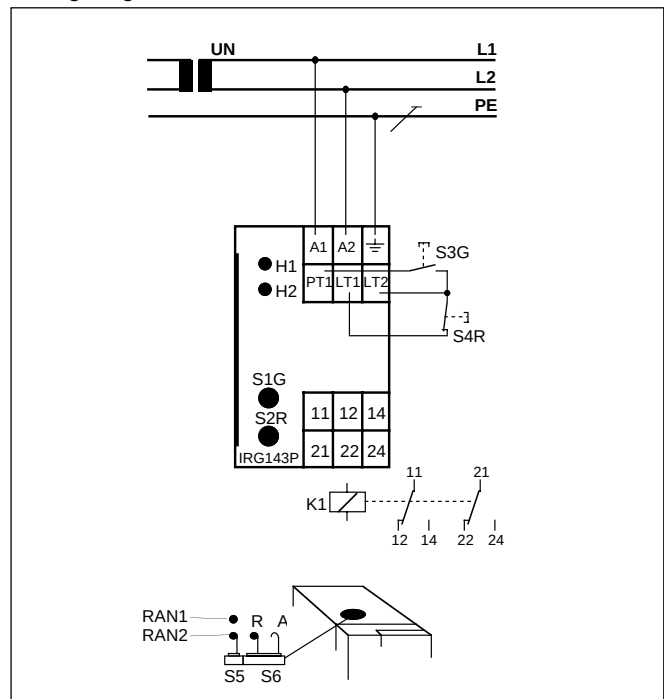
General data

Mounting	as desired
Type of connection	terminals with self-lifting clamp washers
Terminal screws	M 3.5
Wire cross section	
single wire	2x (1 ... 1.5 mm ²)
fine braid	2x(0.75 ... 1.5 mm ²)
Rapid mounting	on supporting rail acc. to DIN EN 50 022 - 35
Screw mounting	or screw mounting**
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	300 g
Wiring diagram	Z 120 428

*higher value for earth faults behind rectifiers

**accessories for screw mounting, mounting plate art. no. 300 102

Wiring diagram



Legend to wiring diagram

H1	operation LED
H2	alarm LED
S2R	reset button
S1G	test button
S3G	external test button, if required.
S4R	external reset button, if required. If the fault indication is to be stored, the terminals have to be linked external reset button.
S5	print switch for the adjustment of the response value
S6	print switch for the adjustment of the operating principle of K1 R = N / C operation A = N / O operation
K1	output relay

Note

In AC 230 V systems, a short-time overvoltage of maximum 433 Veff for maximum 1 min. is permissible for AC 230 V devices.

Standards

The A-ISOMETER IRG143P corresponds to DIN VDE 0413, T. 2 and ASTM - F 1207 - 89 and is Germanischer Lloyd certified.

Ordering details

Type	Rated mains voltage U_n	Art. No.
IRG143P	AC 24 V	B 912 391
	AC 42 V	B 912 341
	AC 110 V	B 912 246
	AC 230 V	B 912 171

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