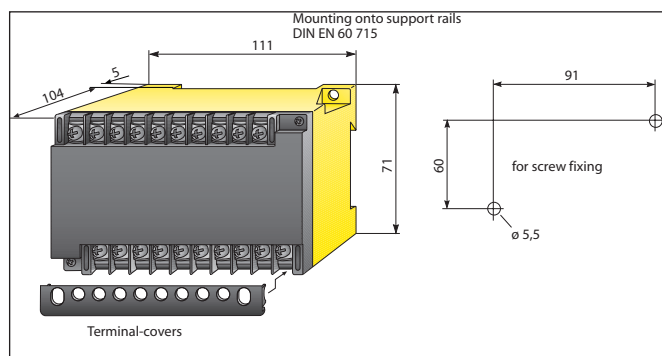




- insulation monitor for unearthed DC networks
- also suitable for networks with voltage variations
- supply voltage U_S : AC 50...60 Hz 230/110/42 V, DC 220/110/60/24/12 V
- built-in test and reset button and LED indication „test“
- two built-in alarm LEDs for fault location
- built-in kΩ indication
- steplessly adjustable response value 10...100 kΩ
- adjustable to the system leakage capacitances 1...10μF
- connection for an external coupling device
- principle of measurement: pulse code measuring principle
- output relay selectable N/O or N/C operation
- GL-certified

Dimension diagram



Product description

The A-ISOMETER®s IRGH250LYX and IRGH250MYX monitor the insulation resistance of unearthed DC networks.

Networks with voltage variations or reserve voltage, for example, in transporting or conveying plants are monitored exactly, too.

Model IRGH250MYX has an integral ohmmeter. IRGH250LYX displays the insulation resistance on a LED bar graph indicator.

The active pulse code measuring principle enables fast, safe and precise insulation measurement in networks with circuit voltages of 0...500 V.

Coupling devices are available to extend the voltage range up to 500 V.

Function

The A-ISOMETER® is connected between the unearthed DC network and the reference earth.

A pulse code measuring voltage is superimposed on the network via coupling links. An insulation fault between the network and earth closes the measuring circuit via the terminals +/- . An electronic evaluation circuit calculates the insulation resistance, which is displayed on a built-in or an external ohmmeter after a time delay. During short voltage variations, the measuring data is automatically suppressed and the last reading is stored until the next correct measuring can be made.

If the reading is below the selected response value, the output relay 10 either energizes (N/O operation) or deenergizes (N/C operation). The alarm LEDs 1/2 indicate <earth fault> and display its location.

Insulation faults are measured by evaluating all resistors in parallel between the network and earth. In a disconnected circuit the conductors L+ and L- must be coupled via low impedance (e.g. via an electrical consumer).

The test button allows the function of the A-ISOMETER® to be tested. Pressing this button causes the yellow LED <test> to illuminate. After a certain reading delay, the ohmmeters point to the earth fault marker \equiv , the output relays switches, the two alarm LEDs illuminate and the yellow LED „test“ extinguishes.

After a further reading delay, the ohmmeters re-display the insulation resistance existing in the network.

The earth fault indication may be reset using the „reset“ button if the ohmmeter reading exceeds the selected response value by 25%.

Technical data IRGH250LYX, IRGH250MYX**Insulation**

Nominal insulation voltage	DC 600 V
Insulation class acc. to DIN VDE 0110	C
Dielectric test	2500 V
Operation class	permanent operation

Network being monitored

Rated mains voltage U_N	DC 0...500 V
Operating range	0...1,3 U_N

Supply voltage

Supply voltage U_S	(see ordering details)
Operating range	0,8...1,15 U_S
Self-consumption max.	4,4 VA

Response values

Response value R_{AN1} steplessly adjustable	10...100 k Ω
Test cycle time = response delay t_{AN} ($C_E = 1...10 \mu F$)	> 5...30 sec
Max. mains leakage capacitance C_E	1...10 μF
Adjustment by factory	1 μF

Measuring circuit

Measuring voltage U_M unsymmetric	15 Vss
Measuring current I_M	83,3 μA
Internal DC resistance R_i , acc. to DIN VDE 0413	120 k Ω
Internal measuring resistance	
Impedance Z_i , 50 Hz DIN VDE 0412	> 250 k Ω

Outputs

Meter output SKMP	not floating
Current output (max. load)	400 μA (12,5 k Ω)

Contact circuit

Switching components	1 change-over contact and one N/O contact
Switching capacity max.	1100 VA
Rated contact voltage	220 V
Permanent current	5 A
Break capacity	
AC 220 V and $\cos. \phi = 0,4$	3,8 A
DC 110 V and $L/R = 0$	0,38 A
Operating principle	N/O or N/C operation
Adjustment by factory	N/C operation

Tests acc. to DIN VDE 0435 IEC 255

Impulse voltage test	class III
Electrical disturbance test	class III
Vibration test	0,7mm; 55 Hz

Environmental conditions

Ambient temperature, during operation	-5°C...+50°C
Storage temperature range	-40°C...+70°C

General data

Mounting	
Front plate width	
Type of connection	terminals with self-lifting clamp-washers; M3,5
Wire cross section	
single wire	2 x (1...1,5 mm ²)
fine braid	2 x (0,75...1,5 mm ²)
Rapid mounting	IEC 60715
Screw mounting	M4
Protection class acc. to DIN 40050	
internal components	IP 50
Terminals / with terminal covers	IP 10 / IP 20
Weight approx.	750 g
Wiring diagram	Z 120 305

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 resistance before starting the operation.

Please check the correct mains voltage!

Only one insulation monitor may be used in each interconnected system. When insulation and voltage and voltage tests are to be carried out, 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 taken in accordance with accident prevention regulations.

Standards

The A-ISOMETER®s correspond to DIN VDE 0413, T.8.

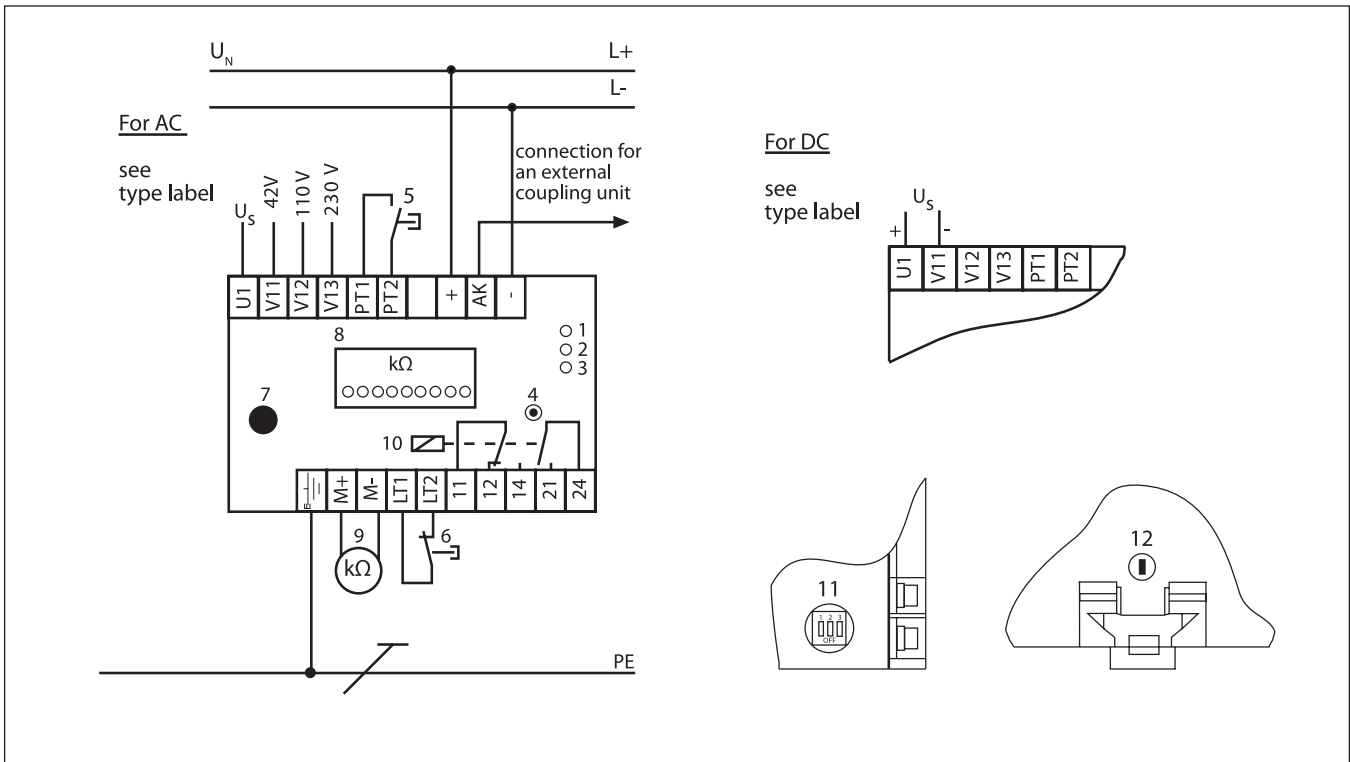
Type	Rated mains voltage U_S	Supply voltage U_S	Art.No.
IRGH250LYX	DC 2...500 V	AC 50...60 Hz	917 580
IRGH250MYX		230/110/42 V	917 576
IRGH250LYX		DC 12 V	917 413
		DC 24 V	917 582
IRGH250MYX		DC 12 V	917 057
		DC 24 V	917 587
		DC 60 V	917 265
		DC 110 V	917 599

Other values on request.

Ordering details for external k Ω -meters

Type	Size (mm)	Art.No.
875 092	72 x 72	986 763
875 093	96 x 96	986 764

Wiring diagram



Legend to wiring diagram

- 1 built-in alarm LED, indicating "earth fault at L+"
- 2 built-in alarm LED, indicating "earth fault at L-", LED 1+2 illuminate in case of symmetrical earth faults or earth fault in a disconnected circuit
- 3 built-in alarm LED, yellow, <test>
- 4 built-in test and reset button
- 5 external test button, if required
- 6 external reset button, if required. If the fault indication is to be stored, the terminals LT1-LT2 have to be connected by a bridge or the reset button 6. Otherwise LT1-LT2 remain unused.
- 7 adjustable response value
- 8 built-in kΩ indication
IRGH250LYX is equipped with a LED bar graph indicator,
IRGH250MYX has a built-in kΩ-meter
IRGH250YX has no kΩ display
- 9 external ohmmeter 400μA full-scale deflection, load-independent current, not floating, max. load. 12.5 kΩ
- 10 output relay with one change over contact and one NO contact, selectable in N/O or N/C operation.

- 11 code switch for matching to the network leakage capacitance:

μF	1	2	3
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	ON	OFF
5	OFF	OFF	ON
6	ON	OFF	ON
8	OFF	ON	ON
10	ON	ON	ON

- 12 selector switch N/O / N/C operation (at the rear of the device)
- AK connection for an external coupling unit ($U_N > 500 \text{ V}$)

Right to modifications reserved