

# ISOMETER® IR125Y-4

Insulation monitoring device for unearthed AC and DC systems  
(IT systems)



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## Product description

The ISOMETER®s of the IR125Y series are designed to monitor the insulation resistance of unearthed AC and DC control circuits (IT systems). External supply voltage is not required. In contrast to insulation monitoring devices which evaluate the shift voltage for insulation fault detection, this series uses the active AMP measurement method. This creates the possibility to detect and indicate both symmetrical and asymmetrical insulation faults.

## Application

- AC and DC control and auxiliary circuits in accordance with DIN EN 60204-1, "Electrical equipment of machines", IEC 60204-1, EN 60204-1
- DC auxiliary circuits in accordance with DIN VDE 0100-725
- Simple battery systems

## Device features

- Insulation monitoring for AC and DC systems (IT systems)
- Response values, adjustable 10...200 kΩ
- LEDs: Power On LED, alarm LED to signal insulation faults
- Internal combined test and reset button
- Connection external reset button
- Alarm relay with one potential-free changeover contact
- N/C operation
- Fault memory behaviour, selectable

## Function

When the insulation resistance between the system conductors and earth falls below the set response value, the alarm relay switches and the alarm LED lights up. The fault message can be stored. The fault memory can be reset by pressing the reset button. The device function can be tested using the test button.

## Measurement method



The IR125Y series uses a variant of the AMP measurement method.

## Standards

The ISOMETER® of the IR125Y-4 series complies with the requirements of the standards: DIN EN 61557-8 (VDE 0413- 8), EN 61557-8, IEC 61557-8, ASTM F1669M-96 (2007)

## Approvals



## Ordering information

Nominal system voltage <sup>1)</sup> U <sub>n</sub>		Type	Art. No.
AC	DC		
19.2...265 V	19.2...308 V	IR125Y-4	B 9102 3005

<sup>1)</sup> Absolute values

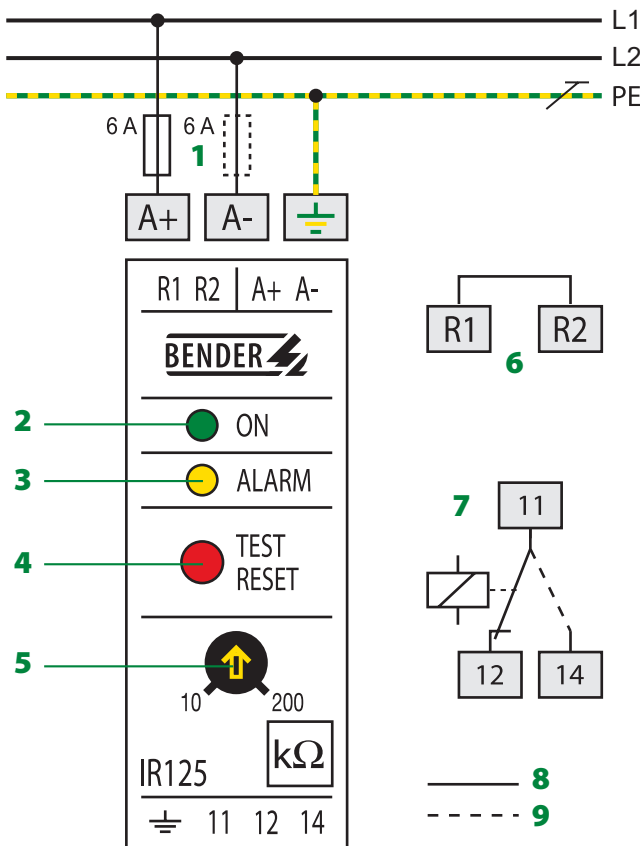
## Accessories

Type designation	Art. No.
Mounting plate	B 990 056

## Response values/measuring circuits

Type	Response value R <sub>an</sub>	Response time t <sub>an</sub>	System leakage capacitance C <sub>e</sub>
IR125Y-4...	10...200 kΩ	≤ 6 s	≤ 10 μF
Type	Measuring voltage U <sub>m</sub>	Measuring current I <sub>m</sub>	Internal DC resistance R <sub>i</sub>
IR125Y-4...	13 V	≤ 0.12 mA	112 kΩ

Wiring diagram – Operating elements



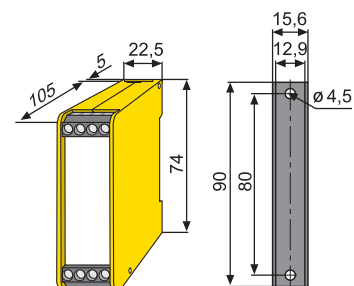
- 1 - Supply voltage  $U_S$  (see ordering details) via fuse
- 2 - Power On LED "ON"
- 3 - LED "ALARM"
- 4 - Combined test and reset button "TEST/RESET", short-time pressing (< 1 s) = RESET; long-time pressing (> 1 s) = TEST
- 5 - Adjustable response value 10...200 kΩ
- 6 - "R1/R2" bridged: Fault memory active
- 7 - Alarm relay in N/C operation
- 8 - Alarm
- 9 - No alarm

Technical Data

<b>Insulation coordination acc. to IEC 60664-1</b>	
Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/pollution degree	4 kV/3
<b>Voltage ranges</b>	
Nominal system voltage $U_n$	AC 19.2...265 V, DC 19.2...308 V
Supply voltage $U_S$	= $U_n$
Power consumption	≤ 1.5 W
<b>Response values</b>	see table "Response values/measuring circuit"
<b>Measuring circuit</b>	see table "Response values/measuring circuit"
<b>Outputs</b>	
Test button	internal
Reset button	internal/external
<b>Switching elements</b>	
Number of switching elements	1 changeover contact
Operating principle	N/C operation
Electrical endurance, number of cycles	12000
Contact class	IIB in accordance with DIN IEC 60255-0-20
Rated contact voltage	AC 250 V/DC 300 V
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
<b>Environment</b>	
Shock resistance IEC 60068-2-27 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (transport)	2 g/10...150 Hz
Ambient temperature (during operation/during storage)	-10...+55 °C/-40...+70 °C
Climatic class acc. to DIN IEC 60721-3-3	3K5
<b>Connection</b>	
Connection type	modular terminals
Connection properties rigid/flexible	0.2...4 mm <sup>2</sup> /0.2...2.5 mm <sup>2</sup>
<b>Other</b>	
Operating mode	continuous operation
Mounting	any position
Degree of protection, internal components (DIN EN 60529)	IP30
Degree of protection, terminals (DIN EN 60529)	IP20
Screw mounting	with mounting plate
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-0
Documentation number	D00114
Weight	≤ 130 g

Dimension diagram XM22

Dimensions in mm





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