

ISOMETER® IR125Y-4

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



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Device features

- Insulation monitoring for unearthed 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

Standards, approvals and certifications



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 IEC 60204-1: "Safety of machinery – Electrical equipment of machines, Part 1: General requirements"
- Simple battery systems

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

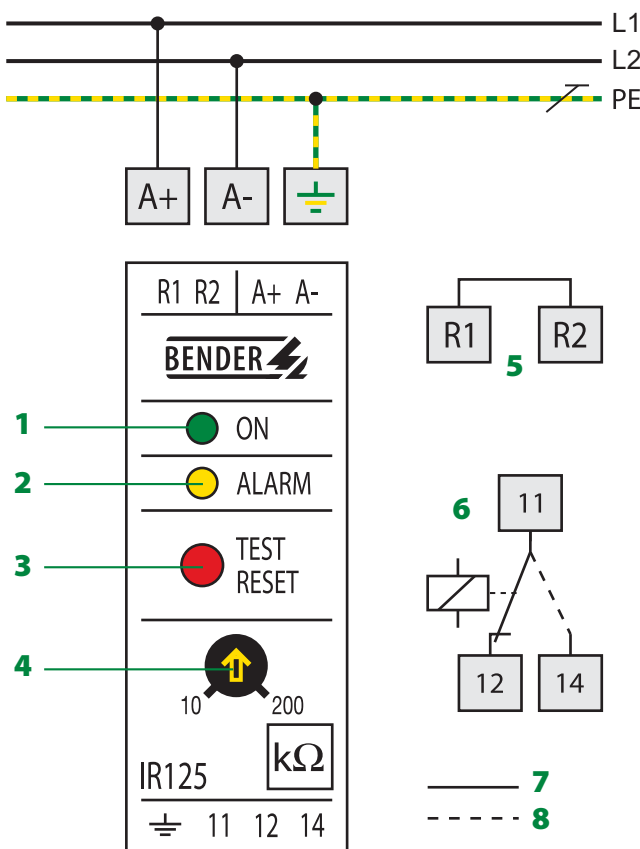


The IR125Y series uses a variant of the AMP measurement method.

Standards

The IR125Y type range complies with the device standards: IEC 61557-8, ASTM F1669M-96 (2007).

Wiring diagram – Operating elements



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

Response values/measuring circuits			
Type	Response value R_{an}	Response time t_{an}	System leakage capacitance C_e
IR125Y-4...	10 kΩ...200 kΩ	≤ 6 s	≤ 10 μF

Type	Measuring voltage U_m	Measuring current I_m	Internal DC resistance R_i
IR125Y-4...	13 V	≤ 0.12 mA	112 kΩ

Ordering information		
Type	Nominal system voltage U_n	Art. No.
IR125Y-4	AC 19.2...265 V, DC 19.2...308 V*	B 9102 3005
Mounting plate	--	B 990 056

*Absolute value

Technical data

Insulation coordination acc. to IEC 60664-1	
Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/pollution degree	4 kV/3
Voltage ranges	
Nominal system voltage U_n	AC 19.2...265 V, DC 19.2...308 V
Nominal frequency f_n	DC, 42...460 Hz
Supply voltage U_s	= U_n
Power consumption	≤ 1.5 W

Response values	see table "Response values/measuring circuit"
Measuring circuit	see table "Response values/measuring circuit"

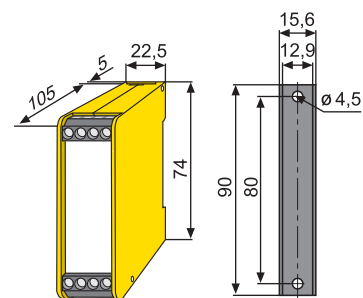
Outputs	
Test button	internal
Reset button	internal/external

Switching elements	
Number of switching elements	1 changeover contact
Operating principle	N/C operation
Electrical endurance, number of cycles	12000
Contact class	IIB
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

General data	
Shock resistance IEC 60068-2-27 (during operation)	15 g/11 ms
Bumping IEC 60068-2-29 (during transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (during operation)	1 g/10...150 Hz
Vibration resistance IEC 60068-2-6 (during transport)	2 g/10...150 Hz
Ambient temperature (during operation/during storage)	- 10 °C...+ 55 °C/- 40 °C...+ 70 °C
Climatic class acc. to IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	any position
Connection type	modular terminals
Connection properties rigid / flexible	0.2...4 mm ² / 0.2...2.5 mm ²
Degree of protection, internal components/terminals (IEC 60529)	IP 30/IP 20
Screw mounting	with mounting plate
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94 V-0
Operating manual	TBP102005
Weight approx.	130 g

Dimension diagram XM22

Dimensions in mm





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