

A-ISOMETER® IR125Y-4

Insulation monitoring device for
unearthed DC systems (IT systems)



A-ISOMETER® IR125Y-4

Device features

- Insulation monitoring for unearthed DC systems 19.2...308 V
- Response values, adjustable 10...200 kΩ
- LEDs: Power On LED, alarm LED to indicate 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

Approvals:



Product description

The A-ISOMETERs® of the IR125Y series are designed to monitor the insulation resistance of unearthed DC control circuits (IT systems) DC 19.2...308 V. External supply voltage is not required.

In contrast to insulation monitoring device which evaluate the shift voltage for insulation fault detection, this series uses the active AMP measuring principle. This creates the possibility to detect and indicate both symmetrical and asymmetrical insulation faults.

Application

- DC control and auxiliary circuits in accordance with DIN EN 60204-1: 1998-11 "Electrical equipment of machines", IEC 60204-1: 1997, EN 60204-1: 1997
- DC auxiliary circuits in accordance with DIN VDE 0100-725: 1991-11
- Simple battery systems

Function

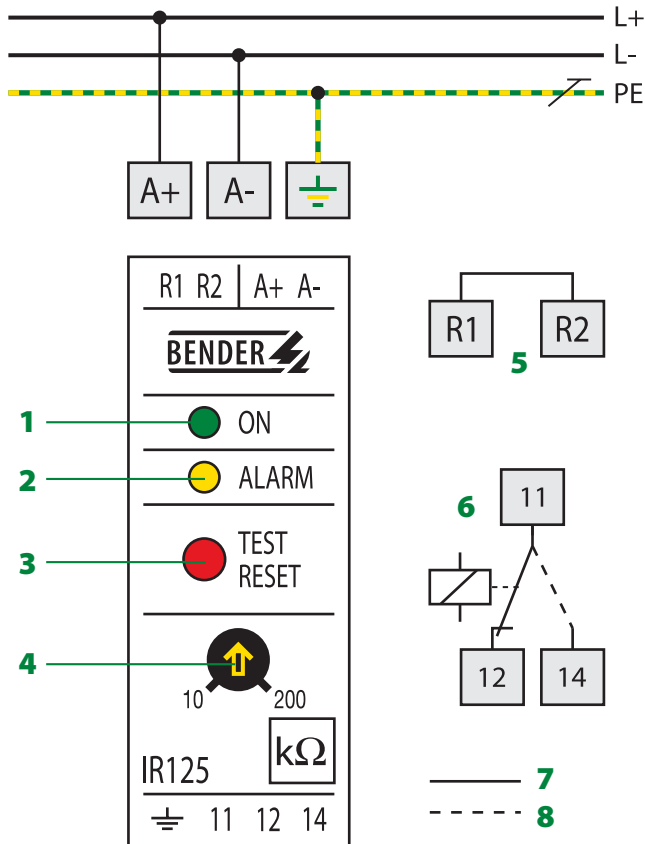
When the insulation resistance between the system conductors and earth falls below the set response value, the alarm relay switches and the alarm LED lights up. The fault message can be stored. The fault memory can be reset by pressing the RESET button. The device function can be tested using the TEST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

Measuring principle



The IR125Y series uses a variant of the AMP measuring principle (see chapter Annex – "Technical aspects...").

Wiring diagram – Operating elements



- 1 - Power ON LED "ON"
- 2 - Alarm 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 value/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 resistance R_i
IR125Y-4...	13 V	≤ 0.12 mA	112 kΩ

Ordering information A-ISOMETER® IR125Y-4

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

*Absolute value

Technical data A-ISOMETER® IR125Y-4

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 250 V
Rated impulse voltage/pollution degree	4 kV/3

Voltage ranges

Nominal system voltage U_n	DC 19.2...308 V
Supply voltage U_s	= U_n
Power consumption max.	< 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

Switching elements	1 changeover contact
Operating principle	N/C operation
Electrical service life, 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

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 DIN IEC 60721-3-3	3K5
Operating mode	continuous operation
Mounting	any position
Connection	screw terminals
Connection properties rigid/flexible	0.2...4 mm ² /0.2...2.5 mm ²
Degree of protection, internal components/terminals (DIN EN 60529)	IP 30/IP 20
Screw mounting	with mounting plate
DIN rail mounting acc. to	DIN EN 60715/IEC 60715
Flammability class	UL94V-0
Product standards	DIN EN 61557-8: 1998-05, EN 61557-8: 1997-03, IEC 61557-8: 1997-02, ASTM F1669M-96.
Operating manual	BP102005
Weight approx.	130 g

Dimension diagram XM22 Dimensions in mm

