• According to IEC/EN 61557-8
• For single- and 3-phase AC-voltage systems
• Adjustable response value \( R_{\text{AN}} \) from 10 ... 80 k\( \Omega \)
• Without auxiliary supply
• Closed circuit operation
• Programmable for:
  - Manual reset (bridge LT1-LT2)
  - Automatic reset (without bridge)
• External reset button on LT1-LT2
• Test button to check the function of the device
• External test button can be connected to PT1-PT2
• 1 changeover contact
• Width 45 mm

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### Technical Data

- **Nominal voltage** \( U_n \): AC 24, 42, 110, 127, 230, 400, 415, 500 V
- **Voltage range**: 0.8 ... 1.1 \( U_n \)
- **Frequency range**: 45 ... 400 Hz
- **Response value** \( R_{\text{AN}} \): 10 ... 80 k\( \Omega \)
- **Setting** \( R_{\text{AN}} \): Infinite variable with screwdriver
- **Internal test resistor**: Equivalent to earth resistance of < 10 k\( \Omega \)
- **Internal AC resistance**: > 200 k\( \Omega \)
- **Internal DC resistance**: > 200 k\( \Omega \)
- **Measuring voltage**: DC 18 V
- **Max. measuring current (RE = 0)**: < 0.1 mA
- **Max. permissible noise DC voltage**: DC 242 V
- **Operate delay** at \( R_{\text{AN}} = 50 \, \text{k}\( \Omega \)\, CE = 1 \( \mu \)F:
  - \( R_e \) from \( \infty \) to 0.9 \( R_{\text{AN}} \): < 4.2 s
  - \( R_e \) from \( \infty \) to 0 k\( \Omega \): Approx. 2 s
- **Hysteresis** at \( R_{\text{AN}} = 50 \, \text{k}\( \Omega \): Approx. 50 %
- **Response inaccuracy** at \( R_{\text{AN}} = 50 \, \text{k}\( \Omega \): ± 15 %
- **Nominal consumption**: Approx. 2.5 VA
- **Phase failure bridging**: > 25 ms

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### Approvals and Markings

- CE
- AC

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### Applications

Monitoring of the resistance to earth in ungrounded single- and 3-phase-voltage systems.

### Notes

When monitoring 3-phase IT systems it is sufficient to connect the insulation monitor only to one phase. The 3-phases have a low resistive connection (approx. 3 - 5 \( \Omega \)) via the feeding transformer. So failures that occur in the non-connected phases will also be detected. In one voltage system only one Insulation monitor must be connected. This has to be observed when coupling voltage system.
### Technical Data

**Output**

- **Contacts:** 1 changeover contact
- **Max. switching voltage:** AC 400 V
- **Thermal current I_th:** 6 A

**Switching capacity**

- To AC 15 NO contact: 10 A / AC 230 V IEC/EN 60947-5-1
- NC contact: 5 A / AC 230 V IEC/EN 60947-5-1
- To DC 13: 1 A / DC 24 V IEC/EN 60947-5-1

**Electrical life**

- At 10 A, AC 250 V: ≥3 x 10^6 switching cycles

**Max. fuse rating**

- 5 A gG / gL IEC/EN 60947-5-1

**Switching capacity**

- To AC 15 NO contact: 10 A / AC 230 V IEC/EN 60947-5-1
- NC contact: 5 A / AC 230 V IEC/EN 60947-5-1
- To DC 13: 1 A / DC 24 V IEC/EN 60947-5-1

**General Data**

- **Operating mode:** Continuous operation
- **Temperature range**
  - Operation: -20 ... + 60 °C
  - Storage: -25 ... + 70 °C
- **Altitude:** < 2000 m

**Clearance and creepage distances**

- Rated impulse voltage / pollution degree: 4 kV / 2 IEC 60664-1
- Routine test: AC 2.5 kV; 1 s

**EMC**

- **Electrostatic discharge:** 8 kV (air) IEC/EN 61000-4-2
- **HF irradiation**
  - 80 MHz ... 1 GHz: 10 V / m IEC/EN 60664-1
  - 1 GHz ... 2.5 GHz: 10 V / m IEC/EN 60664-1
  - 2.5 GHz ... 2.7 GHz: 10 V / m IEC/EN 60664-1
- **Fast transients:** 2 kV IEC/EN 60664-4

**Surge voltages**

- Between Wires for power supply: 2 kV IEC/EN 60664-4-5
- Between wire and ground: 4 kV IEC/EN 60664-4-5
- **HF wire guided:** 10 V IEC/EN 60664-4-6
- **Interference suppression:** Limit value class B EN 55011

**Degree of protection**

- **Housing:** IP 40 IEC/EN 60529
- **Terminals:** IP 20 IEC/EN 60529
- **Housing:** Thermoplastic with V0 behaviour according to UL subject 94
- **Vibration resistance:** Amplitude 0.35 mm frequency 10...55Hz IEC/EN 60664-2-6
- **Climate resistance:** 20 / 060 / 04 IEC/EN 60664-1
- **Terminal designation:** EN 50005
- **Wire connection:** DIN 46228-1/-2/-3/-4
- **Cross section:** 2 x 2.5 mm² solid or 2 x 1.5 mm² stranded wire
- **Stripping length:** 10 mm
- **Wire fixing:** Flat terminals with self-lifting clamping piece IEC/EN 60999-1
- **Fixing torque:** 0.8 Nm
- **Mounting:** DIN rail IEC/EN 60715
- **Weight:** 220 g

**Dimensions**

- Width x height x depth: 45 x 77 x 115 mm

### Standard Type

- **AI 897 AC 230 V**
- **Article number:** 0001037
  - **Nominal voltage U_N:** AC 230 V
  - **Settable response value R_An:** 10 ... 80 kΩ
  - **Width:** 45 mm

### Variant

- **AI 897.07:** Fixed response value between 10 and 80 kΩ, with internal test and reset button, LED indicator for earth fault

### Connection Examples

#### Connection Example AI 897

- A1/A2: U_N = U_H
- Bridge LT1/LT2: Manual reset
- Without Bridge LT1/LT2: Automatic reset

#### Connection Example AI 897.07

- A1/A2: U_N = U_H
- Bridge LT1/LT2: Manual reset
- Without Bridge LT1/LT2: Automatic reset