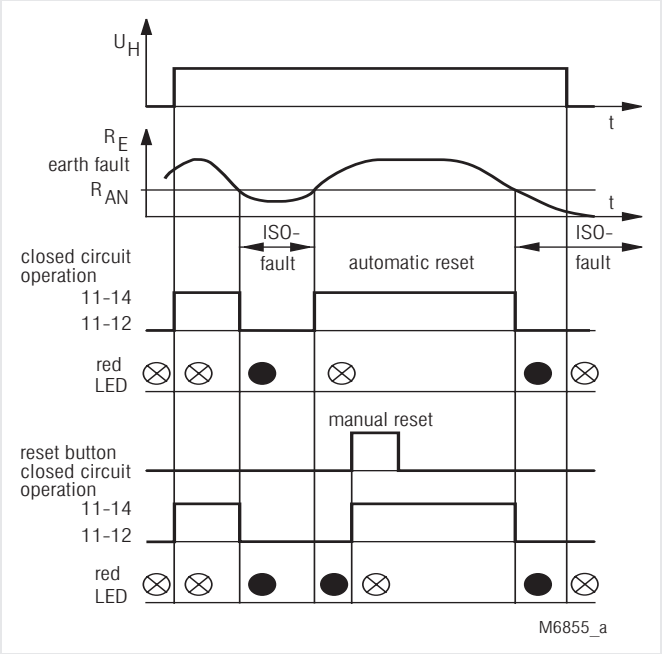
VARIMETER
Insulation Monitor
AI 898

0225237



- According to IEC/EN 61 557
- For DC-voltage systems
- Fixed response value
- 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
- LED indicators
- 1 changeover contact
- Width 45 mm

Function Diagram



Approvals and Marking

CE

Applications

Monitoring of insulation resistance in ungrounded DC-voltage systems.

Indicators

LED "Ein":	on, when no fault (output relay energized)
LED "Erdschluß":	on, when ground fault

Notes

Symmetric ground faults (same resistance between L+ - PE and L- - PE) will not be detected because of the measuring principle. In practice this is of no importance.

Technical Data

Auxiliary Circuit

Auxiliary voltage U_H:	AC 24, 42, 110, 230 V DC 24, 60, 110, 220 V at AI 898/20
Voltage range:	0.8 ... 1.1 U_N
Frequency range:	45 ... 400 Hz

Measuring Circuit

Nominal voltage U_N:	DC 24, 48, 60, 110, 220 V to 660 V on request
Voltage range:	0.8 ... 1.1 U_N
Response value R_{AN}:	DC 24 ... 60 V: 6 kΩ DC 110 V: 11 kΩ DC 220 V: 22 or 50 kΩ special values on request
Setting R_{AN}:	fixed
Internal test resistor:	equivalent to R_E < 6 kΩ
Internal DC resistance:	DC 24 V: 5 kΩ DC 48 ... 60 V: 3 kΩ DC 110 V: 8 kΩ DC 220 V: 30 kΩ
Max. measuring current (RE = 0):	DC 24 V: 6 mA DC 48 V: 19 mA DC 60 V: 22 mA DC 110 V: 15 mA DC 220 V: 9 mA

All technical data in this list relate to the state at the moment of edition. We reserve the right for technical improvements and changes at any time.

Technical Data

Operate delay
at R_{AN} = 50 kΩ, CE = 1 µF
R_E from ∞ to 0.9 R_{AN}: approx. 0.4 s
R_E from ∞ to 0 kΩ: approx. 0.1 s
Hysteresis
at R_{AN} = 50 kΩ: approx. 20 - 30 %
Measuring error
at R_{AN} = 50 kΩ: < 25 %
ambient temperature -5 ... 50°C,
within the permitted voltage range
Nominal consumption: approx. 2.5 VA

Output

Contacts: 1 changeover contact
Max. switching voltage: AC 400 V
Thermal current I_{th}: 6 A
Switching capacity
to AC 15: 5 A / AC 230 V IEC/EN 60 947-5-1
Short circuit strength
max. fuse ratinge: 5 A gL IEC/EN 60 947-5-1

General Data

Operating mode: Continuous operation
Permissible ambient and stocking temperature: - 20 ... + 60°C / - 25 ... + 70°C
Clearance and creepage distances
rated impuls voltage / pollution degree: 4 kV / 2 IEC 60 664-1
EMC
Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2
Fast transients: 2 kV IEC/EN 61 000-4-4
Surge voltages between
wires for power supply: 2 kV IEC/EN 61 000-4-5
0.5 kV at AI 898/20
between wire and ground: 4 kV IEC/EN 61 000-4-5
Interference suppression: Limit value class B EN 55 011
Degree of protection: Housing: IP 40 IEC/EN 60 529
Terminals: IP 20 IEC/EN 60 529
Housing: Thermoplastic with V0 behaviour according to UL subject 94
Vibration resistance: Amplitude 0.35 mm
frequency 10...55Hz IEC/EN 60 068-2-6
Climate resistance: 20 / 060 / 04 IEC/EN 60 068-1
Terminal designation: EN 50 005
Wire connection: 2 x 2.5 mm² solid or
2 x 1.5 mm² stranded wire with sleeve
DIN 46 228-1/-2/-3/-4
Wire fixing: Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
Mounting: DIN rail IEC/EN 60 715
Weight: 240 g

Dimensions

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

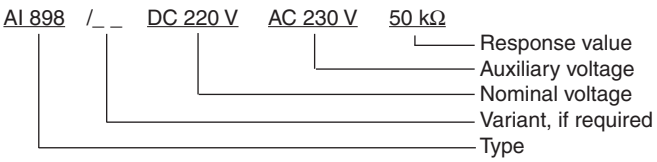
Standard Type

AI 898 DC 24 V 6 kΩ AC 230 V
Article number: 0001044 stock item
- Output: 1 changeover contact
- Nominal voltage U_N: DC 24 V
- Auxiliary voltage U_H: AC 230 V
- Fixed response value R_{AN}: 6 kΩ
- Width: 45 mm

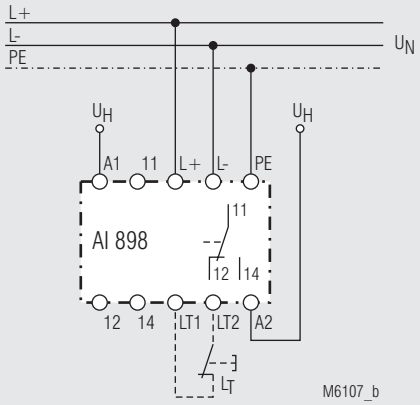
Variant

AI 898/20: for auxiliary supply DC 24 V
for DC 60, 110 or 220 V the relay is delivered with an external drop resistor

Ordering example vor variant



Connection Example



L+/L-: U_N
A1/A2: U_H
Bridge LT1/LT2: manual reset
Without bridge LT1/LT2: automatic reset