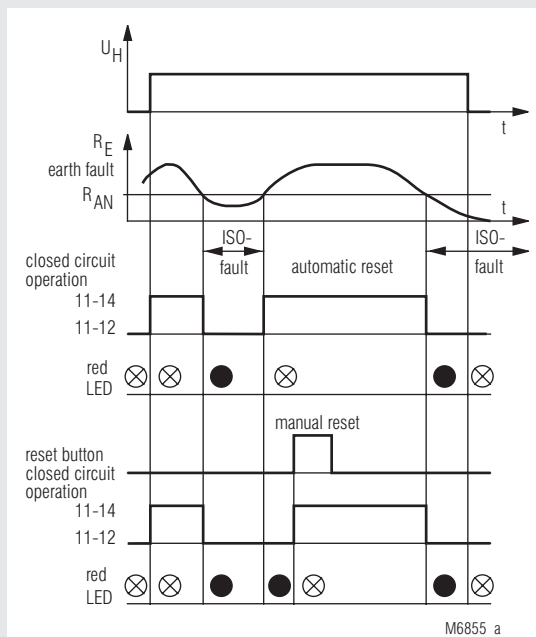




- According to IEC/EN 61 557
- For mixed AC - DC systems
- Fixed response value  $R_{AN}$
- Programmable for:
  - manual reset (bridge X5 - LT1)
  - automatic reset (without bridge)
- Optionally with internal reset button
- External reset and test button can be connected
- Test button to check the function of the device
- LED indicator
- 1 changeover contact
- External connection of indicating instrument possible
- Closed circuit operation
- Optionally open closed circuit operation
- Width 100 mm

## Function Diagram



## Approvals and Marking



## Applications

Monitoring of the resistance to earth in ungrounded mixed AC - DC systems

## Indicators

LED chain: shows actual resistance to ground  
 red LED: on, when ground fault

## Notes

The device can be connected on the AC or on DC side of a mixed voltage system and monitors the ground fault on the AC and also on the DC side with the same response sensitivity.  
 The AN 5890 connects an alternating measuring voltage to the monitored voltage system. This voltage has a low frequency with a time periode of 2 ... 16 sec. so that a fast changing mains voltage could lead to a fault. When the mains is back to normal this fault is reset.

## Technical Data

### Auxiliary circuit

**Auxiliary voltage  $U_H$ :** AC 230 V, others on request  
**Voltage range:** 0.8 ... 1.2  $U_N$   
**Frequency range:** 40 ... 400 Hz

### Measuring Circuit

**Nominal voltage  $U_N$ :**  $\leq$  DC 500 V /  $\leq$  AC 250 V  
**Voltage range:** 0 ... 1.15  $U_N$   
**Frequency range:** 40 ... 60 Hz  
**Response value  $R_{AN}$ :** 50 k $\Omega$ , 10 ... 440 k $\Omega$  on request  
**Setting  $R_{AN}$ :** fixed  
**Internal test resistor:** 10 k $\Omega$   
**Internal AC resistance:**  $>$  100 k $\Omega$   
**Internal DC resistance:**  $>$  100 k $\Omega$   
**Measuring voltage:** approx.  $\pm$  13 V  
**Max. measuring current (RE = 0):**  $<$  0.3 mA  
**Max. permissible noise DC voltage:** DC 580 V  
**Measuring cycle internally adjustable:** 2 ... 16 s  
**Line capacitance CE to ground:** 1 ... 20  $\mu$ F  
**Factory setting:** 2 s (for CE = 1  $\mu$ F)

## Technical Data

### Operate delay

at  $R_{AN} = 50 \text{ k}\Omega$ ,  $CE = 1 \text{ }\mu\text{F}$

$R_E$  from  $\infty$  to  $0.9 R_{AN}$ : < 15 s

$R_E$  from  $\infty$  to  $0 \text{ k}\Omega$ : < 10 s

### Hysteresis

at  $R_{AN} = 50 \text{ k}\Omega$ : approx. 5 %

### Measuring error

at  $R_{AN} = 50 \text{ k}\Omega$ : < 10 %  
ambient temperature -5 ... 50°C,  
within the permitted voltage range  
approx. 4 VA  
Phase failure bridging:  
> 20 ms

## Output

### Contacts

AN 5890.11: 1 changeover contact

Max. switching voltage: AC 250 V

Thermal current  $I_{th}$ : 8 A

### Switching capacity

to AC 15

NO contact: 3 A / AC 230 V IEC/EN 60 947-5-1

NC contact: 1 A / AC 230 V IEC/EN 60 947-5-1

### Short circuit strength

max. fuse rating: 6 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: 1 kV IEC/EN 61 000-4-5

between wire and ground: 2 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 IEC/EN 60 068-2-6

frequency 10 ... 55 Hz IEC/EN 60 068-1

Climate resistance: 20 / 060 / 04 IEC/EN 60 068-1

Terminal designation: EN 50 005

Wire connection: 2 x 2.5 mm<sup>2</sup> solid or

2 x 1.5 mm<sup>2</sup> 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: 535 g

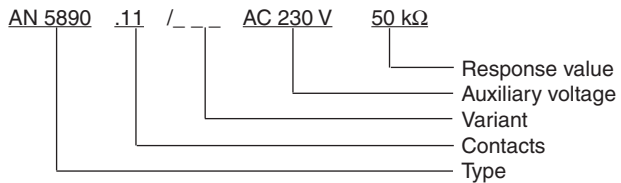
## Dimensions

Width x height x depth: 100 x 78 x 115 mm

## Variants

AN 5890.11/\_01: open circuit operation  
AN 5890.11/\_02: closed circuit operation  
AN 5890.11/10\_: with internal reset button  
AN 5890.11/20\_: without internal reset button

## Ordering example for variants



## Accessories

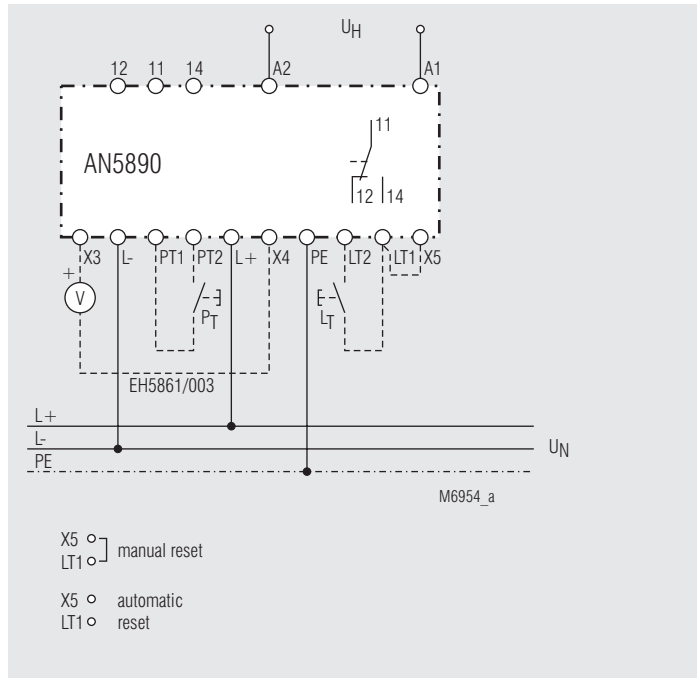
AG 5876.11/030: pre-warning device  
EH 5861/003: indicating instrument,  
degree of protection: IP 52



The indicating device EH 5861 is externally connected to the insulation monitor and shows the actual insulation resistance of the voltage system to ground.

Dimensions:  
Width x height x depth  
96 x 96 x 52 mm

## Connection Example



L+/L-:  $U_N$   
A1/A2:  $U_H$

## Standard Type

AN 5890.11/102 DC 500 V, AC 230 V 50 kΩ

Article number: 0031248 stock item

• Output: 1 changeover contact

• Nominal voltage  $U_N$ : DC 500 V

• Auxiliary voltage  $U_H$ : AC 230 V

• Response value  $R_{AN}$ : 50 kΩ

• Closed circuit operation

• With internal reset button

• Width: 100 mm