

0225255



AN 5872



EH 5878

- According to VDE 0413
- For single- and 3-phase AC-voltage systems
- For medically used rooms (variant /107)
- Fixed response value  $R_{AN}$
- Closed circuit operation
- Programmable for:
  - manual reset (bridge X5 - LT1)
  - automatic reset (without bridge)
- Reset button LT1
- Test button to check the function of the device
- External test and reset buttons can be connected
- LED indicators
- 1 changeover contact
- External indicating instrument can be connected
- AN 5872: width 100 mm
- EH 5878: frontside 96 x 96 mm

### Approvals and marking



### Applications

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

### Indicators

LED-chain: displays actual resistance to ground  
 green LED: on, when resistance above response value  
 red LED: on, when ground fault

### Technical data

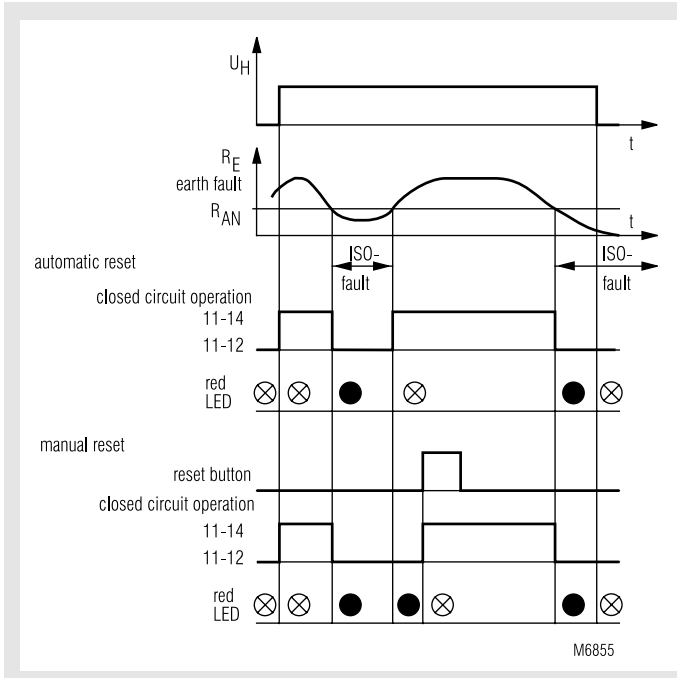
#### Auxiliary circuit

**Auxiliary voltage  $U_H$ :** AC 24, 42, 110, 230, 400 V or AC 24, 42, 230, 400, 500 V  
**Voltage range:** 0,8 ... 1,2  $U_N$   
**Frequency range:** 40 ... 400 Hz

#### Measuring circuit

**Nominal voltage  $U_N$ :** AC 0 ... 500 V  
**Voltage range:** 0 ... 1,15  $U_N$   
**Frequency range:** 40 ... 60 Hz  
**Response value  $R_{AN}$ :** 50 k $\Omega$ , others on request  
**Setting  $R_{AN}$ :** fixed  
**Internal test resistor:** 10 k $\Omega$   
**Internal AC resistance:** > 400 k $\Omega$   
**Internal DC resistance:** > 30 k $\Omega$   
**Measuring voltage:** DC 15 V  
**Max. measuring current ( $R_E = 0$ ):** < 0,5 mA  
**Max. permissible noise DC voltage:** DC 250 V  
**Operate delay**  
 at  $R_{AN} = 50$  k $\Omega$ ,  $C_E = 1$   $\mu$ F  
 $R_E$  from  $\infty$  to 0,9  $R_{AN}$ : < 0,6 s  
 $R_E$  from  $\infty$  to 0 k $\Omega$ : < 0,25 s  
**Hysteresis**  
 at  $R_{AN} = 50$  k $\Omega$ : approx. 8 %  
**Measuring error**  
 at  $R_{AN} = 50$  k $\Omega$ : < 10 %  
 ambient temperature -5 ... 50°C,  
 within the permitted voltage range  
**Nominal consumption:** approx. 4 VA  
**Phase failure bridging:** > 60 ms

### Function diagram



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## Technical data

### Output

### Contacts

AN 5872.11, EH 5878.05: 1 changeover contact  
**Max. switching voltage:** AC 250 V

### Thermal current $I_{th}$

AN 5872: 8 A  
 EH 5878: 3 A

### Switching capacity to AC 15

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

### Short circuit strength max. fuse rating

AN 5872: 6 A gL EN 60 947-5-1  
 EH 5878: 3 A gL 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

overvoltage category / contamination level: 4 kV / 2 IEC 60 664-1

### EMC

Electrostatic discharge: 8 kV (air) EN 61 000-4-2  
 Fast transients: 2 kV EN 61 000-4-4

### Surge voltages between

wires for power supply: 1 kV EN 61 000-4-5  
 between wire and ground: 2 kV EN 61 000-4-5

Interference suppression: Limit value class B EN 55 011

**Degree of protection:** Housing: IP 40 EN 60 529  
 Terminals: IP 20 EN 60 529

### Housing:

Thermoplastic with V0 behaviour according to UL subject 94  
 Amplitude 0,35 mm

**Climate resistance:** frequency 10 ... 55 Hz EN 60 068-2-6  
 20 / 060 / 04 EN 60 068-1

### Terminal designation:

### Wire connection

AN 5872: 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

EH 5878: 1 x 2,5 mm<sup>2</sup>  
 DIN 46 228-1/-2/-3/-4

### Wire fixing

AN 5872: Flat terminals with self-lifting clamping piece EN 60 999

EH 5878: screw terminals with removable terminal strips

### Mounting

AN 5872: DIN rail EN 50 022  
 EH 5878: flush mounting

### Weight

AN 5872: 695 g  
 EH 5878: 790 g

## Dimensions

### Width x height x depth

AN 5872: 100 x 78 x 115 mm  
 EH 5878: 96 x 96 x 111,5 mm

### Panel cut-out

EH 5878: 92<sup>+0,8</sup> x 92<sup>+0,8</sup> mm

## Standard types

AN 5872.11 AC 24, 42, 230, 400, 500 V 50 kΩ  
 Article number: 0031450 stock item

- Output: 1 changeover contact
- Auxiliary voltage  $U_{H1}$ : AC 24, 42, 230, 400, 500 V
- Response value  $R_{AN}$ : 50 kΩ
- Width: 100 mm

EH 5878.05 AC 24, 42, 110, 230, 400 V 50 kΩ  
 Article number: 0033168 stock item

- Output: 1 changeover contact
- Auxiliary voltage  $U_{H1}$ : AC 24, 42, 110, 230, 400 V
- Response value  $R_{AN}$ : 50 kΩ
- Frontside: 96 x 96 mm

## Variants

AN 5872.05/107,  
 EH 5878.05/107: Especially to be used in medically use rooms. Complies to VDE 0107 and is prepared to connect the external test and display panel OA 5802 with test and reset button.

## Ordering example for Variants

AN 5872 .05/107 AC 230 V 50 kΩ  
 Response value  
 Auxiliary voltage  
 Variant  
 Type

EH 5878 .05 / - - AC 230 V 50 kΩ  
 Response value  
 Auxiliary voltage  
 Variant, if required  
 Contact  
 Type

## Accessories

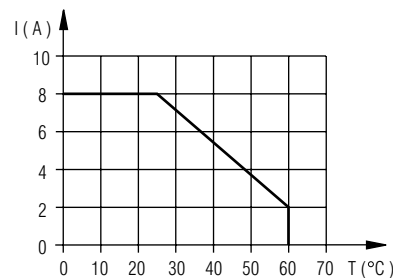
AG 5876.11/010: pre-warning device  
 OA 5862: Test and display panel for AN 5872.05/107 and EH ..../107  
 EH 5861/002: indicating instrument



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

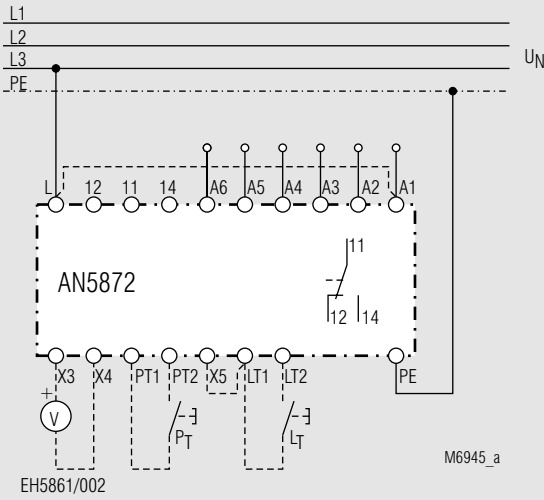
## Characteristic



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Continuous current limit curve for AN 5872

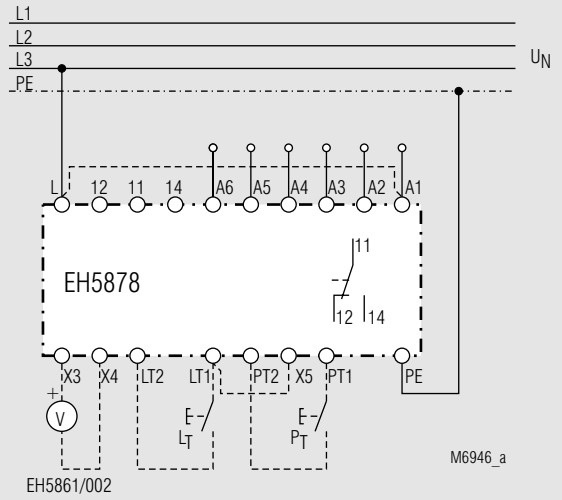
Connection examples



L	○	U <sub>H</sub> =U <sub>N</sub>	X5	○	manual reset	U <sub>H1</sub> = A1/A2
A1	○	U <sub>H</sub> ≠U <sub>N</sub>	LT1	○	manual reset	U <sub>H2</sub> = A1/A3
L	○	U <sub>H</sub> ≠U <sub>N</sub>	X5	○	automatic reset	U <sub>H3</sub> = A1/A4
A1	○	U <sub>H</sub> ≠U <sub>N</sub>	LT1	○	automatic reset	U <sub>H4</sub> = A1/A5
						U <sub>H5</sub> = A1/A6

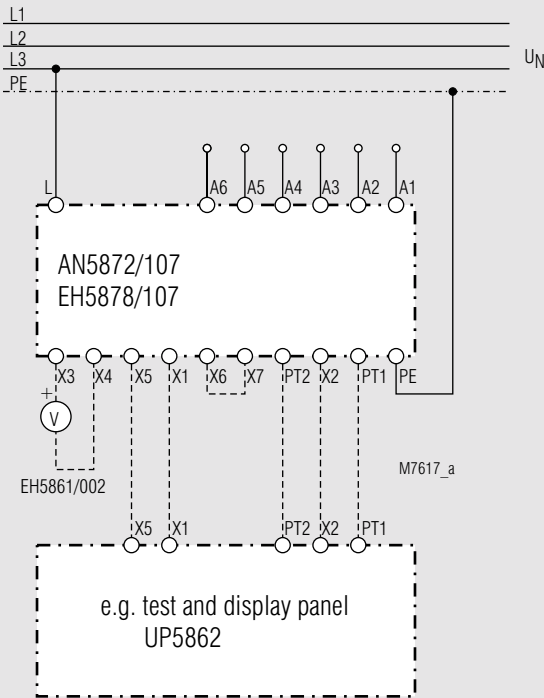
A1/A2: AC 24 or 24 V  
 A1/A3: AC 42 or 42 V  
 A1/A4: AC 110 or 230 V  
 A1/A5: AC 230 or 400 V  
 A1/A6: AC 400 or 500 V

Connection examples



L	○	U <sub>H</sub> =U <sub>N</sub>	X5	○	manual reset	U <sub>H1</sub> = A1/A2
A1	○	U <sub>H</sub> ≠U <sub>N</sub>	LT1	○	manual reset	U <sub>H2</sub> = A1/A3
L	○	U <sub>H</sub> ≠U <sub>N</sub>	X5	○	automatic reset	U <sub>H3</sub> = A1/A4
A1	○	U <sub>H</sub> ≠U <sub>N</sub>	LT1	○	automatic reset	U <sub>H4</sub> = A1/A5
						U <sub>H5</sub> = A1/A6

A1/A2: AC 24 or 24 V  
 A1/A3: AC 42 or 42 V  
 A1/A4: AC 110 or 230 V  
 A1/A5: AC 230 or 400 V  
 A1/A6: AC 400 or 500 V



X6	○	manual reset	U <sub>H1</sub> = A1/A2	U <sub>H4</sub> = A1/A5
X7	○	manual reset	U <sub>H2</sub> = A1/A3	U <sub>H5</sub> = A1/A6
X6	○	automatic reset	U <sub>H3</sub> = A1/A4	
X7	○	automatic reset		

Connection example AN 5872.05/107 with external test and display panel  
 A1/A2: AC 24 or 24 V  
 A1/A3: AC 42 or 42 V  
 A1/A4: AC 110 or 230 V  
 A1/A5: AC 230 or 400 V  
 A1/A6: AC 400 or 500 V