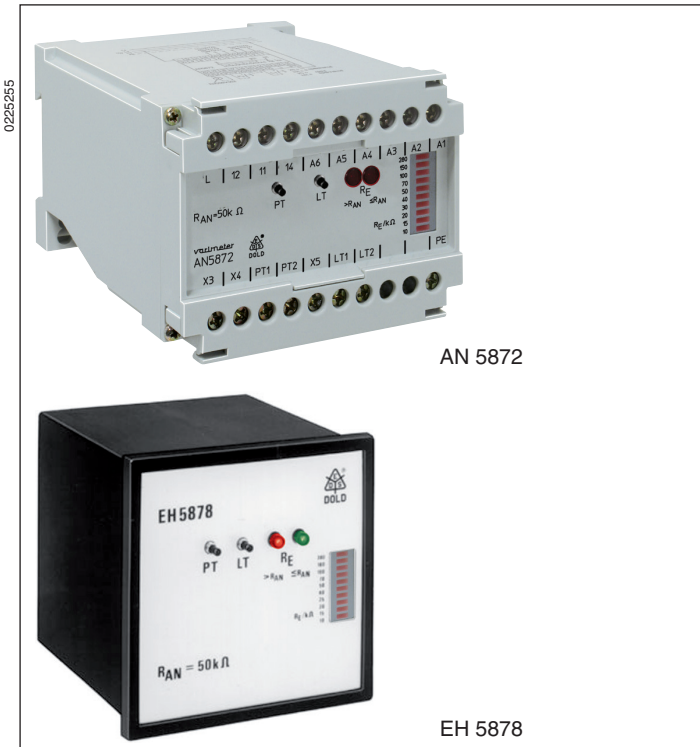


VARIMETER Insulation Monitor AN 5872¹⁾, EH 5878

¹⁾ Only for replacement



- According to IEC/EN 61 557-8
- 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 connection of indicating instrument possible
- AN 5872: width 100 mm
- EH 5878: frontside 96 x 96 mm

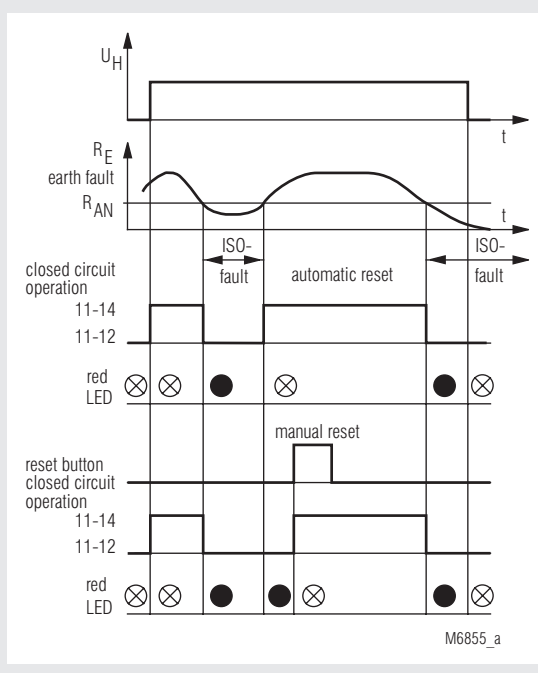
Approvals and Markings



Application

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

Function Diagram



Indicators

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

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 Ω) 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

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 Ω , others on request
Setting R_{AN} : fixed
Internal test resistor: 10 k Ω
Internal AC resistance: > 400 k Ω
Internal DC resistance: > 30 k Ω
Measuring voltage: DC 15 V
Max. measuring current (RE = 0): < 0.5 mA
Max. permissible noise DC voltage: DC 250 V

Technical Data

Operate delay

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

R_E from ∞ to $0.9 R_{AN}$:

R_E from ∞ to $0 \text{ k}\Omega$: < 0.6 s

< 0.25 s

Hysteresis

bei $R_{AN} = 50 \text{ k}\Omega$: approx. 8 %

Measuring error

at $R_{AN} = 50 \text{ k}\Omega$:

< 10 %
ambient temperature -5 ... 50 °C,
within the permitted voltage range

Nominal consumption: approx. 4 VA

Phase failure bridging: > 60 ms

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 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

AN 5872: 6 A gL IEC/EN 60 947-5-1

EH 5878: 3 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 impulse voltage /

pollution degree: 4 kV / 2 IEC 60 664-1

EMC

Electrostatic discharge (ESD): 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 behavior
according to UL subject 94

Vibration resistance:

Amplitude 0.35 mm
frequency 10 ... 55 Hz, IEC/EN 60 068-2-6
20 / 060 / 04 IEC/EN 60 068-1

Climate resistance:

Terminal designation: EN 50 005

Wire connection

AN 5872: 2 x 2.5 mm² solid or
2 x 1.5 mm² stranded wire with sleeve
DIN 46 228-1/-2/-3/-4

EH 5878: 1 x 2.5 mm²

EH 5878: 1 x 2.5 mm²

Wire fixing

AN 5872: Flat terminals with self-lifting
clamping piece IEC/EN 60 999-1

EH 5878: Screw terminals with removable
terminal strips

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Standard Types

AN 5872.11 AC 24, 42, 230, 400, 500 V 50 k Ω

Article number: 0031450 stock item

• Output: 1 changeover contact

• Auxiliary voltage U_H : AC 24, 42, 230, 400, 500 V

• Response value R_{AN} : 50 k Ω

• Width: 100 mm

EH 5878.05 AC 24, 42, 110, 230, 400 V 50 k Ω

Article number: 0033168 stock item

• Output: 1 Wechsler

• Auxiliary voltage U_H : AC 24, 42, 110, 230, 400 V

• Response value R_{AN} : 50 k Ω

• Frontside 96 x 96 mm

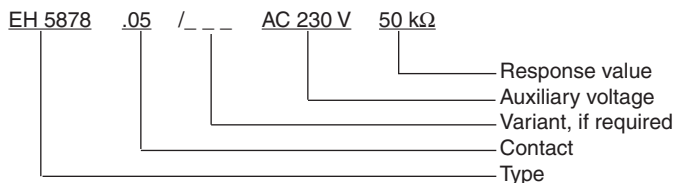
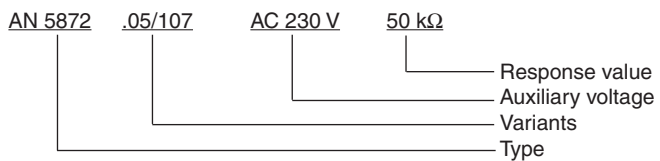
Variants

AN 5872.05/107,

EH 5878.05/107: Especially to be used in medically use
rooms.

Is prepared to connect the external
test and display panel UP 5862 with
test and reset button

Ordering example for variants



Zubehör

AG 5876.11/010: pre-wiring device

UP 5862: Test and display panel for
AN 5872.05/107 and EH /107
Article number: 0041706

EH 5861/002: indicating instrument
degree of protection: IP 52
Article number: 0030616



The indicating device EH 5861 is external-
ly connected to the insulation monitor and
shows the actual insulation resistance of
the voltage systems to ground.

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

Dimensions

Width x height x depth

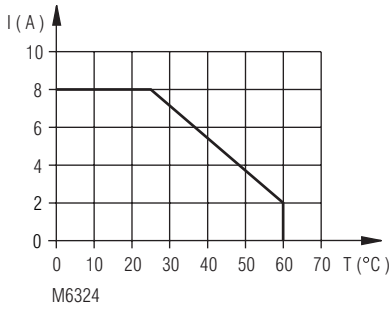
AN 5872: 100 x 78 x 115 mm

EH 5878: 96 x 96 x 111.5 mm

Panel cut-out

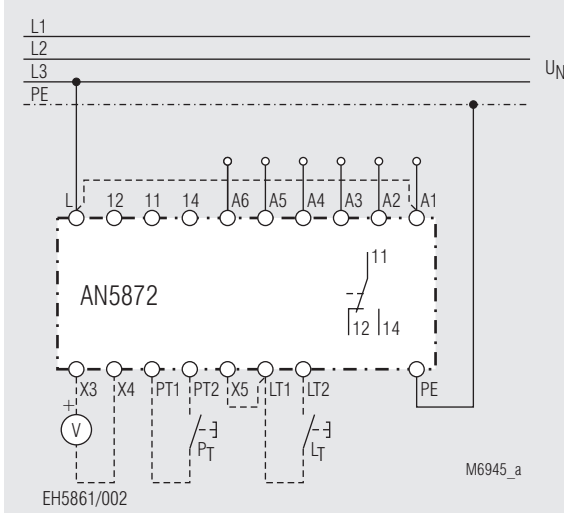
EH 5878: 92^{+0.8} x 92^{+0.8} mm

Characteristic



Continuous current limit curve for AN 5872

Connection Examples



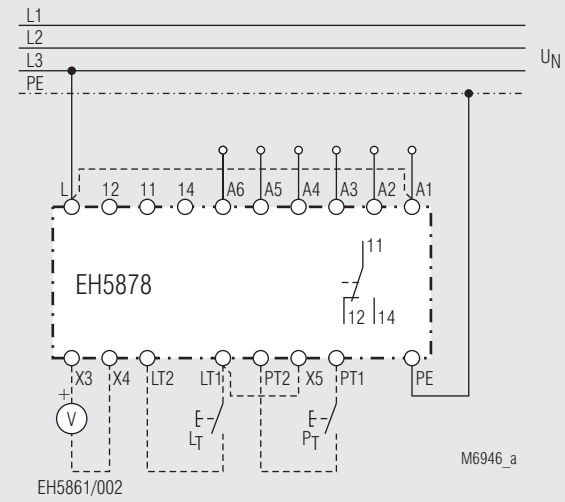
EH5861/002

M6945_a

L	○	U _H =U _N	X5	○	manual reset	U _{H1} = A1/A2
A1	○	U _H ≠U _N	LT1	○		U _{H2} = A1/A3
L	○	U _H ≠U _N	X5	○	automatic reset	U _{H3} = A1/A4
A1	○	U _H ≠U _N	LT1	○		U _{H4} = A1/A5
						U _{H5} = 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

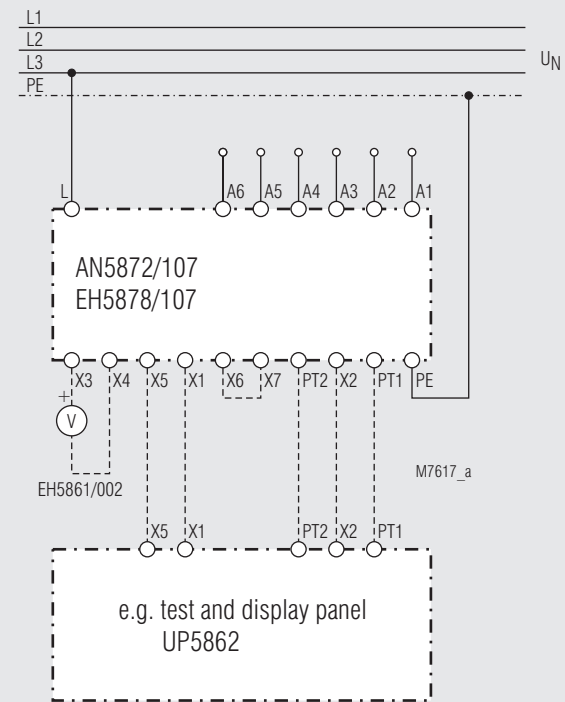


EH5861/002

M6946_a

L	○	U _H =U _N	X5	○	manual reset	U _{H1} = A1/A2
A1	○	U _H ≠U _N	LT1	○		U _{H2} = A1/A3
L	○	U _H ≠U _N	X5	○	automatic reset	U _{H3} = A1/A4
A1	○	U _H ≠U _N	LT1	○		U _{H4} = A1/A5
						U _{H5} = 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



EH5861/002

M7617_a

X6	○	manual reset	U _{H1} = A1/A2	U _{H4} = A1/A5
X7	○		U _{H2} = A1/A3	U _{H5} = A1/A6
X6	○	automatic reset	U _{H3} = A1/A4	
X7	○			

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

