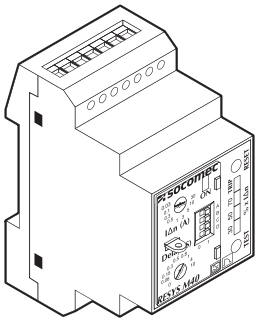
QUICK START GUIDE

EN

541612C

Earth leakage relay A and AC types

RESYS M40



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INSTALLATION

Installation must only be carried out by qualified personnel.

Before installation, disconnect from the power supply.

Connect the device as shown on the diagram below (N.B. some optional functions do not need to be cabled).

When installing the device, make the connections between the relay and the differential toroid as short as possible.

Do not put relay cables or the differential toroid beside power conductors.

Do not place differential toroids close to sources of intense magnetic fields.

Note: This differential relay conforms to type A which trips sinusoidal alternating currents and pulsed currents, whether they are applied suddenly or change slowly. This product is also immune to interference.

This relay must be installed in accordance with the regulations currently in force.

The device must be checked periodically to see that it complies with the regulations.

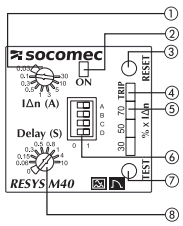
Test Function

	Bargraph blinks	
"Trip" LED and "Alarm" relay activated		
> Continuous monitoring		
Test OK	NO	NO
Toroid input short circuit	NO	NO
Relay/Toroid connection break	YES	NO
> Activation of "Test" button (Press (>1s) or external button)		
Test OK	YES	YES
Toroid input short circuit	NO	NO
Relay/Toroid connection break	YES	NO

Pre-alarm function

When the measured current exceeds 50% of the threshold value, the pre-alarm relay changes state (if selected in this mode). Automatic reset to its original state if 30% lower than pre-set threshold.

Description of front panel



1 - Adjustment/setting IΔn
2 - Green "ON" LED
3 - "RESET" button
4 - Red "TRIP" alarm LED
5 - LED bargraph (% x IΔn)
6 - Configuration DIP switch (x 4)
7 - "TEST" push-button
8 - Time setting

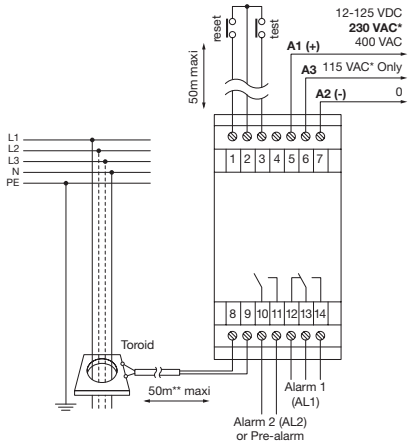
- With IΔn set at 30 mA, the timing is set at 0 (instantaneous) and can not be modified.
- The pre-configured factory setting for the device is 30 mA/0s. These values can be modified as needed for operation. A plastic seal is provided with the device in order to lock the protective cover and ensure the settings.

Configuration (DIP switch)

Switch		SwitchRelay configuration	
A	**B**	AL1	AL2
0	0	Positive security	Positive security
1	0	Negative security	Pre-alarm (neg. security)
0	1	Negative security*	Positive security*
1	1	Negative security	Pre-alarm (pos. security)
C		**Storage mode**	
1		Automatic reset	
0		Storage mode*	
D		**Toroidal transformer ratio**	
1		600 : 1 > Socomec* toroid	
0		1000 : 1 > other manufacturers	

* factory configuration
- (negative security: relay excited in case of alarm/positive security: relay not excited in case of alarm).

TERMINAL CONNECTION DIAGRAM



* Dual voltage supply only available on 115/230 VAC model. For Us = 115VAC, connect the supply to terminals 6 and 7. For the other supply options, cable between 5 and 7.

The output relays are shown in the non-excited state (for example, as if the auxiliary supply was not present).

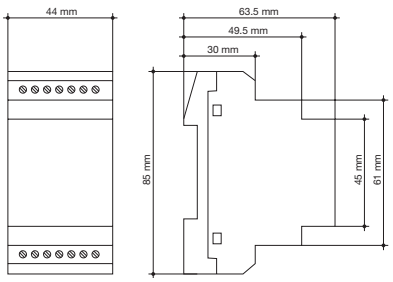
The protective earth wire must not pass through the toroid. For single-phase applications, only the phase and the neutral must pass through the toroid.

** Cabling: For distances > 1 m, use a twisted pair for connection between the relay and the toroid.

Troubleshooting

If the product is not working properly, check that is it properly connected.

DIMENSIONS



TECHNICAL SPECIFICATIONS

- **Us supply** (5, 6, 7):
  12 - 125 VDC (85 – 110 % de Us)
  115/230, 400 VAC (85 - 115 % de Us) (see terminal connection diagram). All AC supplies are galvanically isolated frm toroid, TEST and RESET inputs.
- **Frequency**: 50/60Hz (AC supply)
- **Isolation**: Over-voltage cat. III
- **Impulse voltage**:
  2,5 kV (115 V AC supply)
  (1,2 kV/ 50 µs) IEC 60664
  4 kV (230 and 400 VAC supply)
- **Consumption** (max.):
  6VA (AC supply) - 5W (DC supply)
- **Measured residual current**:
  0 to 30A (15-400 Hz) (via external toroid with ratio 600:1 or 1000: 1 connected to terminals 8 and 9)
- **Sensitivity IΔn**:
  30, 100, 300, 500 mA, 1, 3, 5, 10, 30 A (adjustable)
- **Tripping accuracy**: 80 - 90% of IΔn
- **Reset value**: ≈ 85% of trip threshold
- **Time delay IΔs**: 0*, 60, 150, 300, 500, 800 ms, 1, 4, 10 s (adjustable) *time set for "0" or "Instantaneous" < 25 ms for residual current @ 5 x IΔn.
- **Reset time**: < 2s (after eliminating the auxiliary power supply)
- **Leds indication**:
  - Power supply present: green
  - Bargraph : 3 green (30, 50 and 70% of the threshold value set)
  - Tripping: red
- **Operating temperature**: -20 to +55° C
- **Storage temperature**: -30 to +70° C
- **Relative humidity**: +95 %

Outputs

- Number of contacts: 1 changeover contact relay + 1 single contact relay
- **Type of contact :**
  Alarm 1 (12,13,14)
  AC1 (250 V) 8 A (2000 VA)
  AC15 (250 V) 2,5 A
  DC1 (25 V) 8 A (200 W)
  Alarm 2 / Pre-alarm (10,11)
  AC1 (250 V) 6 A (1500 VA)
  AC15 (250 V) 4 A
  DC1 (25 V) 6 A (150 W)
- **Lifetime**: 150 000 operations at nominal load
- **Dielectric voltage**: 2 kV AC (rms) IEC 60947-1
- **Impulse voltage**: 4 kV (1,2 kV/ 50 µs) IEC 60664

- **Remote Test and Reset (1, 2, 3)**:
  With N.O. contact (e.g. push-button)
  Min. contact closure time: ≥ 80 ms
- **Box**: grey, self-extinguishable, Lexan UL94 VO
- Weight: ≈ 190 g (AC) / ≈ 110 g (DC)
- **Mounting**: on 35 mm symmetrical DIN rail (BS5584 : 1978 - EN50 002 - DIN 46277-3)
- **Connecting terminal**:
  ≤ 2,5 mm2 flexible, ≤ 4 mm2 rigid
- **Certification**:
  conforms to IEC 60755, 60947, 61543, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-12, 61000-4-16.
  CE compliant.
- **References**:

Auxiliary power supply:	Reference
12-125 VDC	4941 3602
115/230 VAC	4941 3723
400 VAC	4941 3740

- **Accessories**

Toroids (C.T.) :	
ΔIC - Ø 15 mm	4950 6015
ΔIC - Ø 30 mm	4950 6030
ΔIC - Ø 50 mm	4950 6050
ΔIC - Ø 80 mm	4950 6080
ΔIC - Ø 120 mm	4950 6120
ΔIC - Ø 200 mm	4950 6200
ΔIC - Ø 300 mm	4950 6300

Use of toroids ≥ 120 mm: setting IΔn min = 300 mA
Other toroids: consult us.

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