

# RESYS P40

## Type A earth leakage relays for motor load break




resys_081_a_1_cat

*RESYS P40*

### Function

**RESYS P40** earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

### Advantages

**Fully configurable**

- 2 relays with configurable function (alarm or pre-alarm at 50% IΔn).
- Adjustment of IΔn from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.

**Tripping accuracy by TRMS measurement**

Improves immunity to nuisance tripping.

**Instantaneous display of permanent leakage currents.**

The LED bargraph provides a real-time display of fluctuations in leakage currents.

**Compact sealed case**

Compact 48 x 4 8 mm case is particularly well suited to integration in MCCs with high density withdrawable compartments.

**Improved immunity to EMC interferences**

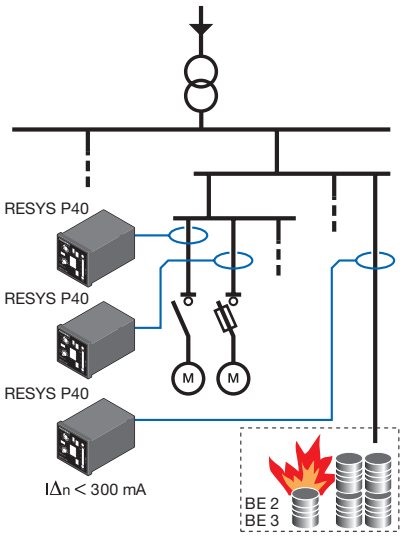
The device has new electronics which improve electromagnetic compatibility.

### Applications

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production. RESYS P40 are particularly suitable for insertion in electricity control panels with withdrawable compartments.

**Protection against fire or explosion risks**

The use of Residual Differential Devices (with adjustment IΔn ≤ 300 mA) provides protection against the risk of fire or explosion generated by tracking currents to earth, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.




resys_051_c_1_x_cat

### The solution for

- Process
- Manufacturing
- Oil, gas and petrochemistry

### Strong points

- Fully configurable
- Tripping accuracy by TRMS measurement
- Instantaneous display of permanent leakage currents
- Compact sealed case
- Improved immunity to EMC interferences

### Conformity to standards

- IEC 60755
- IEC 60947-2
- IEC 60664
- IEC 61543 A1

### Approvals and certifications(1)

*(1) Product reference on request.*

## Front panel




1. IΔn setting.
2. Time delay setting.
3. Configuration micro-switches (x4).
4. "ON" LED.
5. "RESET" pushbutton.
6. "TRIP" alarm LED.
7. LED bargraph (% x IΔn).
8. "TEST" pushbutton.

## Characteristics

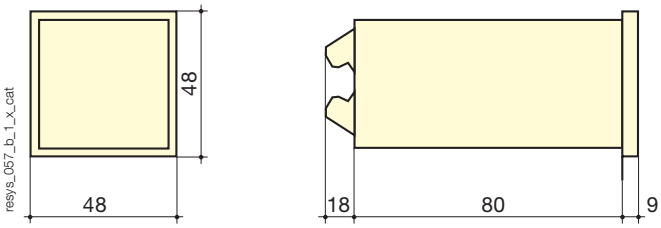
| | |
|---|---|
| **Auxiliary power supply $U_s$** | |
| Frequency | 47 … 63 Hz |
| AC operating zone | 0.8 … 1.15 $U_s$ |
| DC operating zone | 0.8 … 1.05 $U_s$ |
| Consumption | 6 VA (AC) / 5 W (DC) |
| **Insulation (according to IEC 60664-1 standard)** | |
| Rated insulation voltage | 250 VAC |
| Rated impulse voltage | 2.5 kV (115 VAC) / 4 kV (230/400 VAC) |
| Degree of pollution | Class 3 |
| **Threshold values** | |
| IΔn setting | 0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A |
| Accuracy of tripping | - 20 … - 10 % IΔn |
| Domain of mains frequency | 15 … 400 Hz |
| Time delay setting | 0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 4 - 10 s |
| PRE-ALARM relay tripping | 50 % IΔn |
| Hysteresis of the PRE-ALARM relay | 20 % IΔn |

| | |
|---|---|
| **Alarm** | |
| Alarm configuration mode | storage / automatic reset |
| Alarm factory setting | storage |
| Reset | manual by pushbutton / using terminal |
| **Output contacts** | |
| Number of contacts | 2 |
| Type of ALARM 1 contact | 250 VAC - 8 A - 2000 VA |
| Type of ALARM 2 or PRE-ALARM contact | 250 VAC - 6 A - 1500 VA |
| ALARM 1 operating mode | positive / negative security(1) |
| ALARM 2 or PRE-ALARM operating mode | positive security(1) |
| Factory setting of ALARM 1 operating mode | negative security |
| Factory setting of ALARM 2 operating mode | positive security |

*(1) Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.*

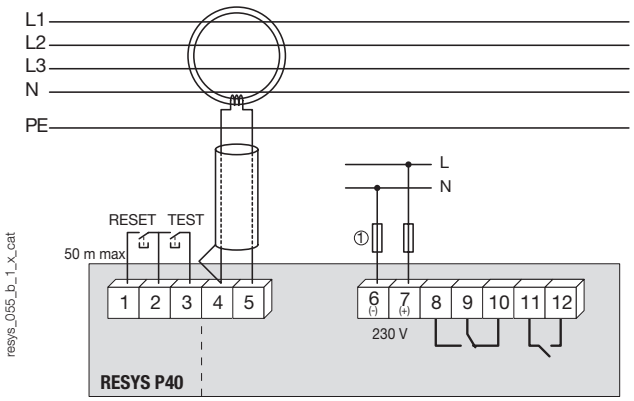
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|---|---|
| **Operating conditions** | |
| Operating temperature | - 20 … + 55 °C |
| Storage temperature | - 30 … + 70 °C |

## Case




| | |
|---|---|
| Type | panel mounting |
| Dimensions W x H x D | 48 x 48 x 107 mm |
| Case protection index | IP40 |
| Terminal protection index | IP20 |
| Rigid cable cross-section | 0.2 … 4 $mm^2$ |
| Flexible cable cross-section | 0.2 … 2.5 $mm^2$ |
| Weight | 190 g |
| Cutout | 45 x 45 mm |

## Terminals and connections




**1 - 2 - 3:** external push buttons
**4 - 5:** SOCOMEC differential toroid connections
**6 - 7:** Auxiliary power supply $U_s$
**8 - 9 - 10:** alarm relay 1 output
**11 - 12:** alarm relay 2 or pre-alarm outputs

**Note:** The earth conductor must not pass through the toroid.
For single phase applications, only the live and neutral need to be passed through the toroid.
Cabling: for distances 1 m, use twisted pair cable between the unit and toroid.
Do not connect the shield to earth.

*1. Fuses 2 A gG .*

## References

| **Auxiliary power supply $U_s$(1)** | **RESYS P40 Reference** |
|---|---|
| 115 VAC | 4942 **3711**(2) |
| 230 VAC | 4942 **3723**(2) |
| 12 … 125 VDC | 4942 **3602**(2) |

*(1) Other rating: Please consult us. (2) References and characteristics of closed, split core and rectangular toroids: see "Core balance transformers type A"*

| **Description of accessories** | **Reference** |
|---|---|
| Soft protection cover IP65 | 4942 **0000** |