

RESYS P40

Type A differential relays
for motor circuits



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RESYS P40

The solution for

- Energy
- Industry
- Building

Strong points

- Fully configurable
- Trigger accuracy by way of TRMS monitoring
- Real-time display of continuous leakage currents
- Compact sealed case
- Improved immunity to EMC interferences

Conformity to standards

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

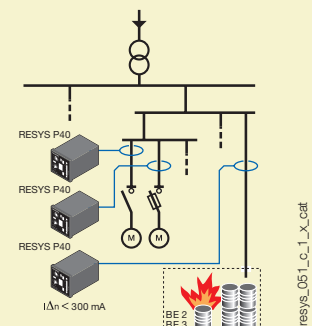


Approvals and certifications⁽¹⁾



(1) Product reference on request.

Applications



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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 $I\Delta n \leq 300$ 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.

Function

The RESYS P40 differential relay is combined with a triggered cut-off device (automatic power cutoff), to meet the following functions:

- Protect against indirect contact.
- Limit earth leakage currents.

It also ensures the preventive monitoring of electrical installations with its pre-alarm function (configurable) or when used in signalling relays.

Advantages

Fully configurable

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

Trigger accuracy by way of TRMS monitoring

Improves immunity to untimely triggers.

General characteristics

- Fully configurable.
- Tripping accuracy by TRMS measurement.
- Instantaneous display of permanent leakage currents.

Real-time display of continuous leakage currents

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

Compact sealed case

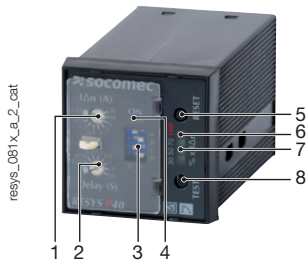
Compact 48 x 48 mm case is particularly well suited to integration in MCCs with high density withdrawable compartments.

Improved immunity to EMC interferences

The device has new electronics which improve electromagnetic compatibility.

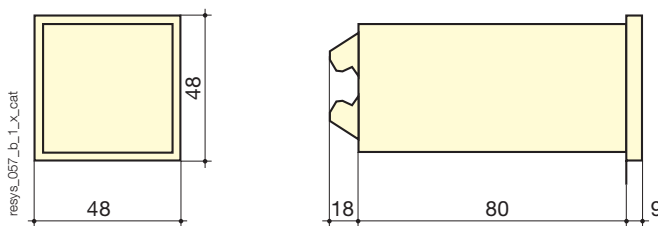
- Compact sealed case.
- Improved immunity to EMC interferences.

Front panel



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

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

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	
$I\Delta n$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I\Delta n$
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 % $I\Delta n$
Hysteresis of the PRE-ALARM relay	20 % $I\Delta n$

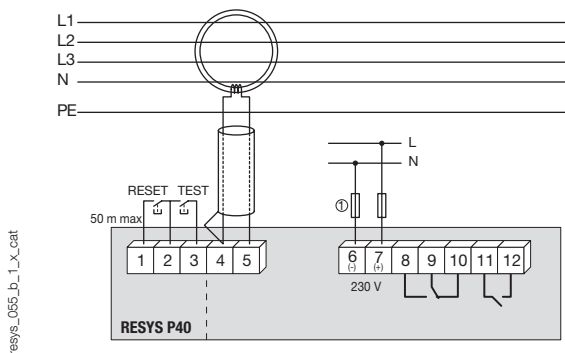
Alarm	
Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal

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.

Operating conditions	
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

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