

# RESYS M40R

Type A differential relays  
with automatic reclosing



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## The solution for

- > Healthcare
- > Energy
- > Industry
- > Building

## Strong points

- > Automatic reclosing
- > Fully configurable
- > Ensures continuity of the power supply for strategic applications or in isolated sites
- > Trigger accuracy by way of TRMS monitoring
- > Real-time display of continuous leakage currents

## Conformity to standards

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



## Function

The **RESYS M40R** differential relay is combined with a cut-off device equipped with a motorised control (automatic cut-off and restoration of power), ensuring the functions of:

- Protect against indirect contact.
- Limiting earth leakage currents.
- Re-engaging the cut-off device after detecting earth leakages and power outages.

The relay re-engages the system up to six consecutive times after different time intervals. If the fault is still present after the sequence of six re-engage attempts, the relay enters an alarm state and manual intervention is required.

## Advantages

### Automatic reclosing

This function provides protection, particularly in isolated sites or for processes requiring a restart in the event of transient faults (continuity of service ensured in the absence of a maintenance team).

### Fully configurable

- Adjustment of  $I\Delta n$  from 0.03 to 30 A.
- Time delay 0 to 10 s.

### Ensures continuity of the power supply for strategic applications or in isolated sites

In the majority of cases, where the fault is not permanent, simply reclosing may resolve the situation.

## General characteristics

- Automatic reclosing.
- Fully configurable.
- Continuity of the power supply for strategic applications.
- Tripping accuracy by TRMS measurement.
- Instantaneous display of permanent leakage currents.

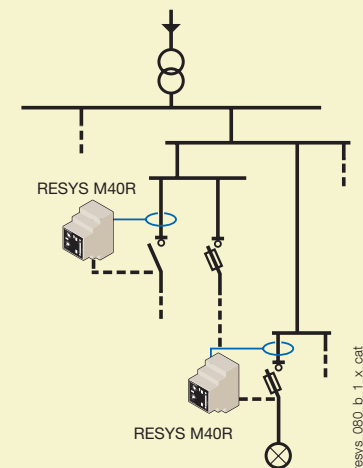
### Trigger accuracy by way of TRMS monitoring

Improves immunity to untimely trippers.

### Real-times display of continuous leakage currents

LED bargraph shows the fluctuations of leakage currents in realtime.

## Applications

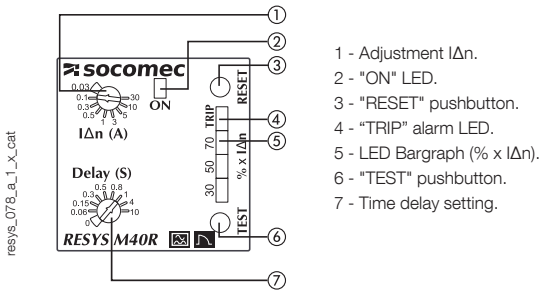


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The RESYS M40R relay must be combined with an automatic tripping/reclosing breaking device:

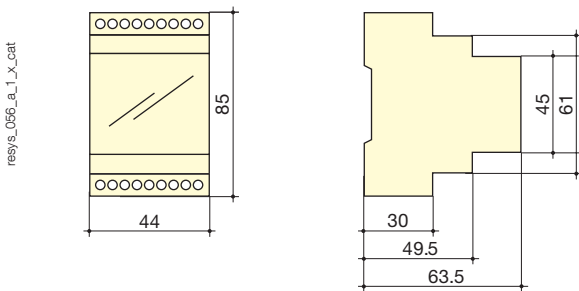
- a motorised switch
- a device fitted with an undervoltage coil
- a contactor.

## Front panel



- 1 - Adjustment  $I\Delta n$ .
- 2 - "ON" LED.
- 3 - "RESET" pushbutton.
- 4 - "TRIP" alarm LED.
- 5 - LED Bargraph (%  $\times I\Delta n$ ).
- 6 - "TEST" pushbutton.
- 7 - Time delay setting.

## Case



Type	modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5 mm
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm <sup>2</sup>
Flexible cable cross-section	0.2 ... 2.5 mm <sup>2</sup>
Weight	190 g

## 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 $U_s$
Max. 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

### Reclosing

Nb of automatic reclosing attempts	6 max
Time delay between two reclosing	7.5 - 15 - 30 - 60 - 120 - 240 s
Reset of automatic reclosing counter ( $t_{CR}$ )	15 min

### Alarm

Alarm configuration mode	automatic reset (6x max, then recording)
Reset	manual by pushbutton / using terminal

### Output contacts

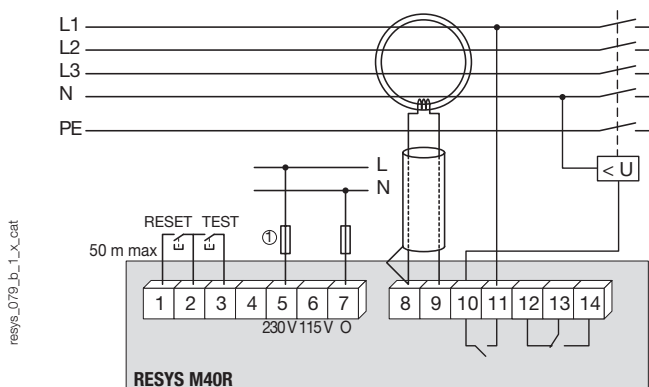
Number of contacts	2
Type of ALARM 1 contact	inverter
Type of ALARM 2 contact	simple
Characteristics contact ALARM 1	250 VAC - 8 A - 2000 VA
Characteristics contact ALARM 2	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	negative security <sup>(1)</sup>
ALARM 2 operating mode	positive security <sup>(1)</sup>

(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
- 5 - 6 - 7: auxiliary power supplies  $U_s$
- 8 - 9: SOCOMEC differential toroid connections
- 10 - 11: alarm relay 2 output
- 12 - 13 - 14: alarm relay 1 output

**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 $U_s$ <sup>(1)</sup>	RESYS M40R Reference
115/230 VAC	4941 3724
400 VAC	4941 3741

(1) Other rating: Please consult us.