

RESYS N40

Type A differential relays

for motor load break



Function

RESYS N40 earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions: protection against indirect contact and limitation of earth 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% $I_{\Delta n}$).
- 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.
- Built-in NFC allows user to access and change settings via Smartphone/Device with installed app.

Highly accurate

- TRMS measurement trigger accuracy which reduces false triggers.

Effective visualisation of leakage current

The application and the product's front panel provide clear, real-time monitoring of leakage current. The LED bar graph instantly displays fluctuations, enabling the precise tracking of current variations.

Improved immunity to EMC interference

The RESYS N40 has new electronics which improve electromagnetic compatibility.

The solution for

- > Process
- > Manufacturing
- > Oil, gas and petrochemicals
- > Energy generation

Strong points

- > Fully configurable
- > Highly accurate
- > Effective visualisation of leakage current
- > Improved immunity to EMC interference

Conformity to standards

- > IEC 60755
- > IEC 60947-2/Annexe M
- > IEC 62020
- > IEC 61543 A1
- > UL 508



Approvals and certifications

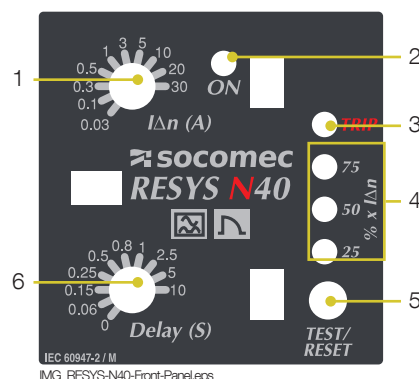


(1) Product part numbers available on request.

General characteristics

- RESYS N40 with 2 configurable relays:
 - either 2 alarm relays,
 - or 1 alarm relay and 1 pre-alarm relay (50% $I_{\Delta n}$).
- Adjustment sensitivity from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Tripping accuracy by TRMS measurement.
- Built-in NFC communication.
- Automatic instantaneous tripping at 30 mA.
- Positive or negative security set by the user.
- Selection of toroid ratio.
- Continuous automatic testing of CT connection.
- Sealable cover.

Front panel



1. $I_{\Delta n}$ Trip level selector (in amps)
2. Power on LED indicator (Green)
3. "Tripped" LED indicator (Red)
4. Bar graph LED indicator (Yellow)
5. Combined "Test/Reset" button
6. Δt Time delay selector (in seconds)

Characteristics

Auxiliary power supply U_s

Rated frequency	47 to 63 Hz
Voltage range (U_s)	24-230 V AC/DC
AC operating zone	0.8 to 1.15 U_s
DC operating zone	0.8 to 1.05 U_s
Max. consumption	6 VA (AC)/5 W (DC)

Insulation (as per standard IEC 60664-1)

Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC)/4 kV (230/400 VAC)
Pollution degree	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	85% of $I_{\Delta n}$ (+/- 5%)
Network frequency range	15 to 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 via push button/use of 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/negative security ⁽¹⁾
Factory setting of ALARM 1 operating mode	Negative security
Factory setting of ALARM 2 operating mode	Positive security

Operating conditions

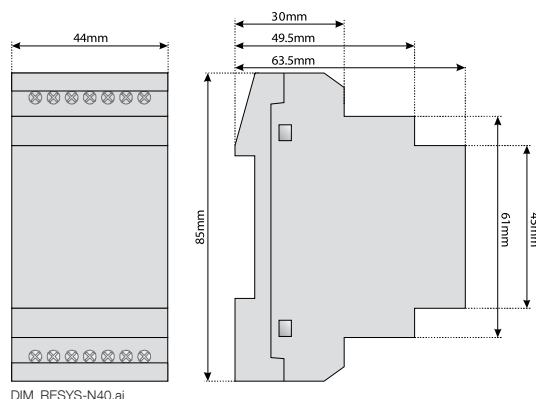
Operating temperature	-20 to +55 °C
Storage temperature	-30 to +70 °C

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

RESYS N40

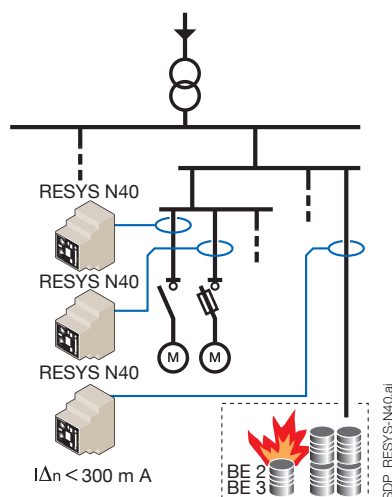
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Dimensions



RESYS N40	
Type	Modular
Number of modules	2.5
Dimensions W x H x D	44x85x63.5 mm
Case ingress protection rating	IP40
Terminal block ingress protection rating	IP20
Rigid cable cross-section	0.2 to 4 mm ²
Flexible cable cross-section	0.2 to 2.5 mm ²
Weight	190 g

Installation



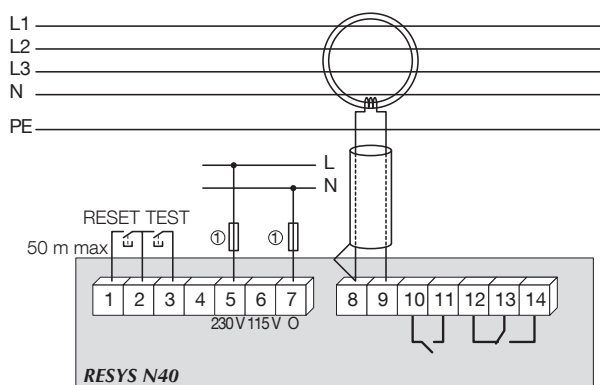
Protection against risk of fire or explosion

The use of Residual Differential Devices (with $I_{\Delta n}$ setting ≤ 300 mA) provides protection against the risk of fire or explosion by monitoring earth leakage current and tripping the associated circuit protection device, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.

NFC application

Quickly view leakage currents and configure the RESYS N40 in seconds, thanks to the smartphone app with NFC connectivity.

Terminals and connections



- 1 - 2 - 3: external push buttons
- 5 - 6 - 7: auxiliary power supplies U_s
- 8 - 9: SOCOMEC residual core balance transformer connections
- 10 - 11: alarm 2 or pre-alarm relay output
- 12 - 13 - 14: alarm 1 relay output

NOTE: The protective conductor must not pass through the toroid.
For single-phase applications, only the live and neutral must pass through the toroid.

Wiring: for distances >1 m, use twisted pair cable for the connection between the relay and toroid. Do not connect the shield to earth.

(1) 2 A gG fuse.

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References

Description	References
RESYS N40	4941 3130
Accessories	References
Auxiliary power supply 24 - 230 VAC/DC	4941 3130
Toroid Δ IC - $\varnothing$ 15 mm	4950 6015
Toroid Δ IC - $\varnothing$ 30 mm	4950 6030
Toroid Δ IC - $\varnothing$ 50 mm	4950 6050
Toroid Δ IC - $\varnothing$ 80 mm	4950 6080
Toroid Δ IC - $\varnothing$ 120 mm	4950 6120
Toroid Δ IC - $\varnothing$ 200 mm	4950 6200
Toroid Δ IC - $\varnothing$ 300 mm	4950 6300