RESYS®

Type A differential relays

socomec
Innovative Power Solutions

Differential protection

> Safety for property and personnel

An insulation fault in any electrical installation represents a potential risk both to users and equipment. The installation itself can be subject to a fire risk if there is a build up of heat caused by a fault current.

The installation standard IEC 60364 for Low Voltage networks specifies the use of residual current differential devices. Specifically the protection requirements to be implemented for differing neutral points.

> Availability of installations

Rapid recognition of insulation faults ensures availability of distribution networks, avoids undesirable interruptions and minimises resultant production losses.

SOCOMEC, a specialist in control and protection for low voltage networks

SOCOMEC offers a complete range of devices for fault location and protection:

GAMME 087 A

- Type A differential relays (sinusoidal alternating currents or alternating currents with a pulsed direct current component) ***RESYS*** ***M*** and ***P*** range
- Type B differential relays (sinusoidal differential alternating currents or alternating currents with a pulsed direct current component or smooth direct differential currents): ***RESYS*** ***B 420*** range
- Fault location device: ***ISOM DLRD 460*** system
- Associated detection toroids.

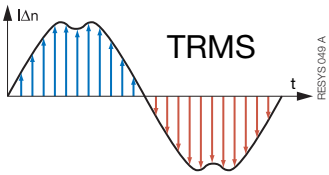
EASY INSTALLATION

- Compact size (48 x 48 x 90 mm) with quick release terminal block can be flush-mounted
- Modular, 2.5 modules only (44 mm).

RESYS 048 A

MEASUREMENT

Efficient TRMS measurement provides improved performance against erroneous tripping.

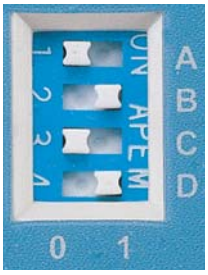


RESYS 049 A

FRONT PANEL CONFIGURATION

Dip switches for configuring:

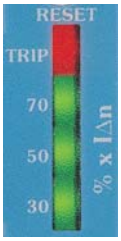
- operating mode for relays,
- storage mode,
- choice of transformer ratio for toroids.



RESYS 046 B

MONITORING DISPLAY

The bargraph displays leak currents so that insulation faults can be identified at an early stage.



RESYS 046 AB

RESYS® M and P
A complete range

PRINCIPAL FUNCTIONS

	RESYS® M20	*RESYS® M40*	*RESYS® P40*
TRMS measurement principle	●	●	●
Tripping threshold	set at 30 mA or 300 mA	30 mA to 30 A	30 mA to 30 A
Time delay	set at 0 or 60 ms	0 to 10 s	0 to 10 s
Instantaneous leak current indication (bargraph)		●	●
Pre-alarm signal		●	●
Sinusoidal residual current monitoring (class AC ~)	●	●	●
Pulsed residual current monitoring (class A ⏦)	●	●	●

REFERENCES

AUXILIARY POWER SUPPLY U_S	*RESYS® M20*	*RESYS® M40*	*RESYS® P40*
12 to 125 V DC		4941 **2602**	4942 **2602**
115 V AC			4942 **2711**
230 V AC			4942 **2723**
115/230 V AC		4941 **2723**	
400 V AC		4941 **2740**	
30 mA - 0 s - 115/230 V AC	4941 **4723**		
300 mA - 0 s - 115/230 V AC	4941 **5723**		
300 mA - 60 ms - 115/230 V AC	4941 **6723**		

DIFFERENTIAL TOROIDS

Associated detection toroids: closed or open type, suitable for all cabling configurations

	W SERIES CLOSED TOROIDS	*WR AND TFR SERIES RECTANGULAR CLOSED TOROIDS*	*WS SERIES SPLIT CORE TOROIDS*
TOROID DIAMETER (mm)	REFERENCES	REFERENCES	REFERENCES
15	4793 **2001**		
35	4793 **2003**		
70	4793 **2007**		
105	4793 **2010**		
140	4793 **2014**		
210	4793 **2020**		
70 x 175		4795 **0717**	
115 x 305		4795 **1130**	
150 x 350		4795 **1535**	
200 x 500		4795 **2050**	
50 x 80			4795 **0508**
80 x 80			4795 **0808**
80 x 120			4795 **0812**
80 x 160			4795 **0816**

RESYS® M and P

Protection which makes the difference

The differential relays in the ***RESYS***® range provide optimised protection for electrical networks:

- cut off the installation when there is an insulation fault (when used with an associated automatic tripping device),
- signal an earth fault current when the relay is used as a preventive signalling relay.

PROTECTION OF PERSONNEL

- indirect contacts (TT arrangement)
- extended cables (TN or IT arrangement)
- exposed conductive parts not interconnected (IT arrangement)

PROTECTION OF INSTALLATIONS

- fire risk premises (BE2)
- premises or sites classified as at risk of explosion (BE3)

PROTECTION OF EQUIPMENT AND MACHINERY

- risk of perforation of electrical sheets (motors)
- risk of destruction due to resistance drop
- PLC inputs (relays)

PREVENTIVE MONITORING

- detection of progressive deterioration in the insulation
- remote supervision so that maintenance can be carried out before tripping occurs

RESYS® M and P
Optimised performance

CHARACTERISTICS


RESYS 041 B


RESYS 042 B


RESYS 044 B

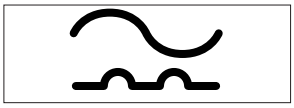
	RESYS® M20	RESYS® M40	RESYS® P40
SETTING RANGE			
Sensitivity	30 mA or 300 mA	0.03/0.1/0.3/0.5/1/3/5/10/30 A	
Time delay	0 or 60 ms	0/0.06/0.15/0.3/0.5/0.8/1/4/10 s	
MONITORED NETWORK			
Rated frequency	15...400 Hz		
AUXILIARY POWER SUPPLY			
Us DC	-	12 to 125 V DC (85 to 105%)	
Us AC	115/230 V AC	115, 230, 400 V AC ± 15%	
INPUTS			
External TEST/RESET	Push button until it latches		
Toroid	Transformer ratio 1/600	Transformer ratio 1/600 or 1/1000	
OUTPUTS			
Type of ALARM contact	1 changeover contact (250 V AC - 8 A - 2000 VA)	1 changeover contact (250 V AC - 8 A - 2000 VA) + 1 single contact (250 V - 6 A - 1500 VA)	
ENVIRONMENT			
Working temperature	-20 to +55 °C		
Storage temperature	-30 to +70 °C		
Relative humidity	95%		
SWITCH BODY			
Type	2.5 modules		48 x 48 x 107 mm flush-mounted
Flush mounting cutout	-		45 x 45 mm
Front panel degree of protection	IP40		

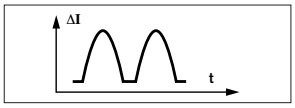
THE RIGHT DIFFERENTIAL PROTECTION

> Type A differential relays: *RESYS® M* and *P* range

The device offers tripping with residual differential currents, alternating sinusoidal currents or pulsed continuous residual differential currents in which the direct current component remains below 6 mA for an interval of at least 150° at the rated frequency.


RESYS 045 B


CATEC 081 C



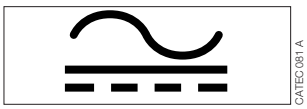
CATEC 219 A

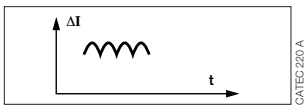
> Type B differential relays: *RESYS® B420* range

The device offers tripping with differential currents identical to those in class A but also for differential currents originating from rectifier circuits:

- simple alternation with capacitive load producing a smooth continuous current,
- three-phase simple or double alternation,
- single-phase double alternation between phases,
- any which charges an accumulator bank.


RESYS 069 B


CATEC 081 A



CATEC 220 A

> Fault location device

The *DLRD 460* system monitors insulation fault currents and load currents: this innovative system prevents faults and provides control of TT or TN arrangement installations.

This solution is suited to industrial environments or specific environments such as public lighting, water treatment, telecoms. etc.


ISOM 370 B


ISOM 175 B

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