

RI-ELR00 Series

Earth Leakage Relay with Integral Transformer



- Single phase or three phase network compatible
- DIN Rail or Surface mount enclosure
- Integral 35mm transformer
- Designed to monitor and detect true RMS earth leakage currents
- Protected against nuisance tripping
- Microprocessor controlled
- Three versions available - 30mA, 100mA and 300mA
- Separate 'Test' and 'Reset' push buttons
- SPDT relay output 5A
- Green LED indicates presence of power supply
- Trip & pre-trip visual warning
- Type A leakage detection

Product Description

The RI-ELR00 is an Earth Leakage relay with integral transformer, preset trip level and fixed delay. The trip level may be preset to 30mA, 100mA or 300mA.

Designed to detect low level leakage currents and to operate a contact if the leakage current exceeds the selected trip level. All phase conductors of the circuit being monitored are passed through the aperture of the ELR00 integral core balance transformer. The transformer output is connected to the internal circuitry which monitors the proportional leakage current and triggers the output relay accordingly.

Two LEDs on the front of the relay provide visual indication of power status pre-trip and trip indication.

A SPDT relay contact is provided for alarm indication.

Parameters

Pre-set trip level 30mA, 100mA or 300mA

Fixed time delay

Test facility:- Front panel push button

Reset facility:-

1. Front panel push button
2. By removal and re-applying of the supply

Note: The relay will remain in trip state until reset as above

Type A leakage detection to IEC/EN60947-2

Response time:-

- <30mS if leakage current $\geq 5 \times I_{\Delta n}$
- <50mS if leakage current $\geq 1 \times I_{\Delta n}$

Display

Display type	LED
LED size	3mm
Displayed parameters	'ON' LED - Powered (Green) 'R' LED - Tripped $>I_{\Delta N}$ (Red) 'R' LED - blinking $> 50\%$ leakage $I_{\Delta N}$ (Red)

Programming

Programmable parameters	None - preset 30mA, 100mA, 300mA
Programming access	None
Memory retention	Non Volatile memory

Input

Connection (1ph, 3ph etc., configurable)	Single phase , Three phase four wire, Three phase three wire
Current transformer connection	N/A - Integral transformer
Monitored leakage current	0...1A
Trip level	75% of $I_{\Delta n}$ (nominal)
Accuracy	Current: $\pm 5\%$ of $I_{\Delta N}$ Time: $\pm 5\%$ of response time
Hysteresis	8% of $I_{\Delta N}$
Trip time delay	30mA = Instantaneous, 100mA & 300mA = $<100\text{mS}$
Reset	Reset button or Reset by interrupting supply
Test	Push-button on front panel
Trip characteristic	Class A (IEC/EN60947-2)
Impulse voltage withstand	4kV 1.2/50us 0.5J
AC voltage withstand	2kV 50Hz for 1 min.
Frequency	45...65Hz

Auxiliary Supply

Voltage range	230V, 110V $\pm 15\%$
Operating frequency	47...63Hz
Power consumption	$<15\text{VA}$

Outputs

Number of relay outputs	One SPDT changeover contact
Relay output function	Position: 15-16 Healthy (unpowered position) 15-18 Tripped
Relay contact rating	AC 250V/5A (AC1), 250V/3A (AC3) DC 25V/5A (DC1)
Contact life expectancy	$>100,000$ operations

Insulation

Installation category	III
Pollution degree	2
Insulation voltage rating	300V (L-N)

Environmental Conditions

Reference temperature	23°C ± 2°C
Specified temperature operating range	-20...50°C
Storage temperature	-20...75°C
Relative humidity	0...95%, non condensing
Installation type	Indoors

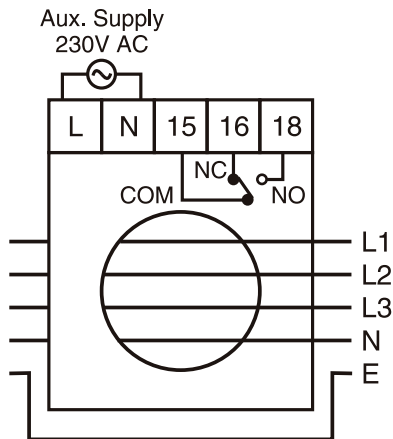
Mechanical

Housing	
Housing	Moulded plastic casing with integral transformer
Mounting	DIN rail or surface mounting
Tamper sealing	Device housing (by means of a tamper evident seal)
Housing material	Self-extinguishing polycarbonate (UL94 V-0)
Protection degree (IEC/EN60529)	IP20 (terminals), IP51 (front of housing)
Weight	<190g
Termination	
Current input terminal type	N/A Integral transformer
Max. wire size	N/A Integral transformer
Auxiliary supply terminal type	Rising clamp
Max. wire size	2.5mm ²
Relay output terminal type	Rising clamp
Max. wire size	2.5mm ²

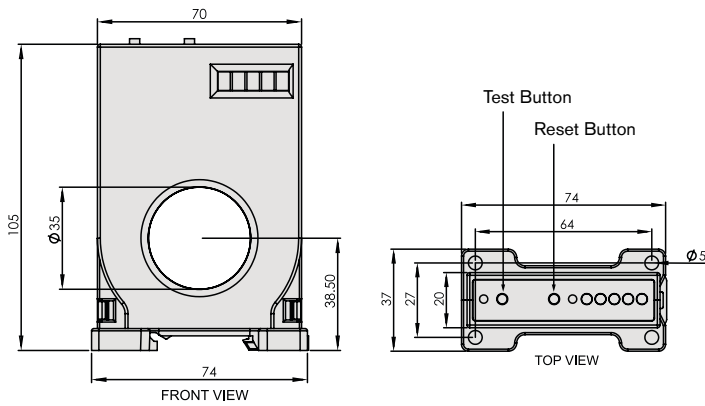
Conformity

Electromagnetic compatibility	IEC/EN61326-1, IEC/EN55011 Class A, IEC/EN61000-4-2, -3, -4, -5, -6, -8, -11
Accuracy and functionality	IEC/EN60947-2, IEC/EN60755, IEC/EN62020
Safety	IEC/EN60947-1

Terminal Connections



Dimensions



Model Selection Table

Set Point - mA	Auxiliary Vac	Model
30	230	RI-ELR00-030
30	110	RI-ELR01-030
100	230	RI-ELR00-100
100	110	RI-ELR01-100
300	230	RI-ELR00-300
300	110	RI-ELR01-300