Type: ELR-IF-0030, 0100 & 0300

Earth Leakage Relay with Integral Toroid (Fixed) - Type A

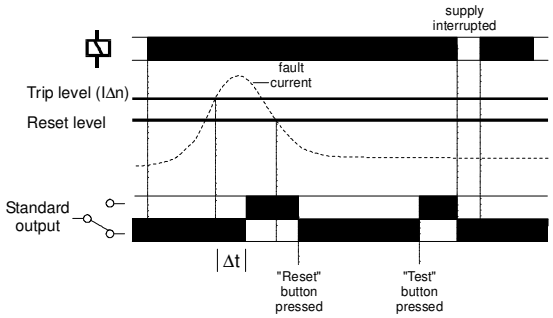
- ❑ **DIN Rail or Surface mount enclosure**
- ❑ **Integral toroid - 25mm ∅**
- ❑ **Designed to monitor and detect true RMS earth fault currents**
- ❑ **Protected against nuisance tripping**
- ❑ **Microprocessor controlled**
- ❑ **Three versions available - 30mA (instantaneous), 100mA (100mS) or 300mA (100mS)***
- ❑ **Separate "Test" and "Reset" push buttons**
- ❑ **SPDT relay output 5A**
- ❑ **Green LED indicates presence of power supply**
- ❑ **Red LED indicates fault current is >50% of IΔn if flashing, or relay has tripped if permanently illuminated**

Dims:
W. 70mm
H. 110mm
D. 37mm



Terminal Protection to IP20

FUNCTION DIAGRAM



INSTALLATION

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as shown in the diagram below.
- DO NOT install the unit in close proximity to equipment generating high magnetic fields.
- Ensure the conductors that pass through the aperture are straight, and as central as possible. Ensure the conductors do not cause any undue stress on the unit itself.

Applying power

- Ensure the voltage to be applied to terminals **"a"** and **"b"** corresponds with the voltage marked on the unit itself.
- Apply power, the green **"supply on"** LED will illuminate. The output relay will remain de-energised and red **"tripped"** LED extinguished. If the fault current is >50% of IΔn, then the red LED will flash to provide early indication that a fault current is present. When the fault current exceeds the fixed trip level (IΔn), the output relay will energise and red LED illuminate after the fixed delay (Δt).
- The relay will now remain in a latched condition until reset.

Fault simulation (Test mode)

- The unit can be placed into a fault condition by pressing the **"Test"** button on the unit. The output relay will energise.
- Press the **"Reset"** button on the front of the unit to reset the unit. The output relay will de-energise.
- The unit can also be reset by interrupting the power supply.
- To satisfy regulations, it is recommended that the device be tested periodically to ensure correct operation.

Troubleshooting

- If the unit fails to operate correctly check that all wiring and connections are good.

Note:

The operating function of this unit is classed as a Type A for which tripping is ensured for residual sinusoidal alternating currents and residual pulsating direct currents, whether applied suddenly or slowly rising. Additionally, this unit is protected against nuisance tripping. This unit will also satisfy the requirements for Type AC devices which only need to detect residual alternating currents.

This unit should be installed in conjunction with the latest wiring regulations and practices (IEE, etc)

TECHNICAL SPECIFICATION

Supply voltage Un (a, b)*:	120, 240V AC (85 - 115% of Un)
(see connection diagram)	
Frequency range:	48 - 63Hz
Isolation:	Over voltage cat. III
Rated impulse withstand voltage:	2.5kV (120V AC supply)
(1.2 / 50µS) IEC 60664	4kV (240V AC supply)
Power consumption (max.):	2W

Please state Supply voltage when ordering.

Rated current:	2-wire: 167A (35mm²) 3-wire: 136A (25mm²) / 4-wire: 100A (16mm²)
Applicable wire sizes:	2-wire: 35mm²
(using 600V AC tri-rated wiring conforming to BS 6231)	3-wire: 25mm² / 4-wire: 16mm²
Monitored leakage current:	0 to 1A (15 - 400Hz)

Sensitivity IΔn (Time delay Δt)*:	30mA (0 / instantaneous**), 100mA (100mS) or 300mA (100mS) (*to be specified when ordering)

***Actual delay for "0" or "Instantaneous" is <25mS when fault current @ 5 x IΔn.*

Trip level:	75% of IΔn (nominal)
Hysteresis:	8% of IΔn
Accuracy:	±10%
Reset time:	≈ 2S (from supply interruption)
LED indication:	
Power supply present:	Green
Tripped:	Red (see "INSTALLATION" to the left)
Memory:	storage of the leakage fault and reset with the "Reset" push button
Ambient temp:	-20 to +55°C
	-5 to +40°C (in accordance with IEC 60755)
Relative humidity:	+95%
Output :	SPDT relay (21, 22, 24)
Output rating:	AC1 250V 5A (1250VA)
	AC15 250V 2.5A
	DC1 25V 5A (125W).
Electrical life:	≥ 150,000 ops at rated load
Dielectric voltage:	2kV AC (rms) IEC 60947-1
Rated impulse withstand voltage:	4kV (1.2 / 50µS) IEC 60664
Housing:	Grey flame retardant Lexan UL94 VO
Weight:	≈ 190g
Mounting option:	1. Using the two fixing holes for mounting directly to a back plate 2. On to 35mm symmetric DIN rail to BS5584:1978 (EN50 002, DIN 46277-3)
Terminal conductor size:	≤ 2.5mm² stranded, ≤ 4mm² solid
Approvals:	Conforms to: IEC60755, IEC 61543 (EMC) CE and RCM Compliant.

( ) Numbers in brackets shown above refer to terminal identification on the housing.

Options

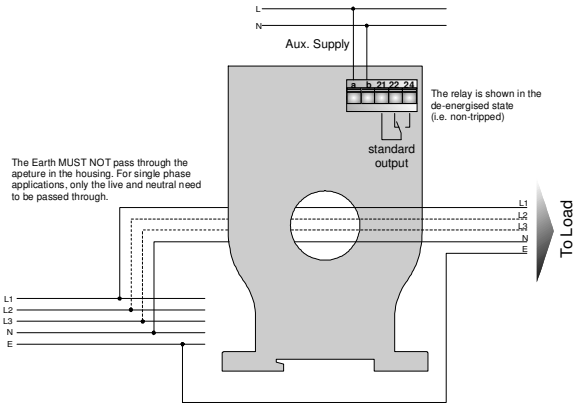
For other supply voltages, alternative trip levels or time delays, please consult the sales office.

Ordering*

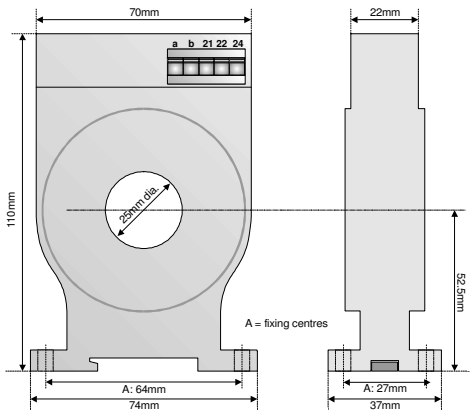
Please state full part number and voltage when ordering. The suffix, which should follow ELR-IF, is **0030** (30mA), **0100** (100mA) or **0300** (300mA), then the voltage.

Example: **ELR-IF-0100** 240V AC

CONNECTION DIAGRAM



MOUNTING DETAILS



Broyce Control Ltd., Pool Street, Wolverhampton, West Midlands WV2 4HN. England
Tel: +44 (0) 1902 773746 Fax: +44 (0) 1902 420639 Email: sales@broycecontrol.com Web: www.broycecontrol.com

ISO 9001 REGISTERED FIRM

The Information provided in this literature is believed to be accurate (subject to change without prior notice); however, use of such information shall be entirely at the user's own risk

ELR-IF-3-A
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