Type: LELRV

Earth Leakage Relay (Variable) – Type A

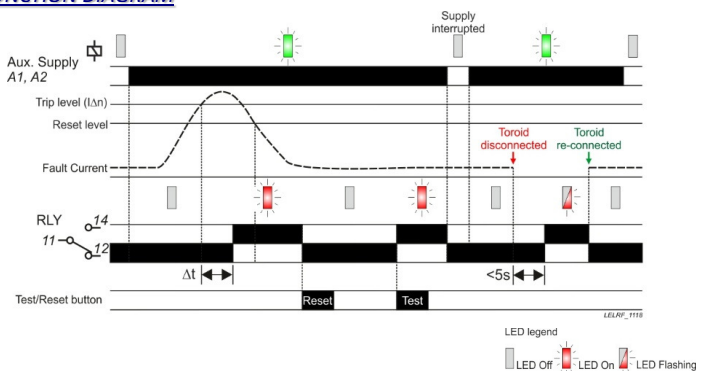
Terminal Protection to IP20

Dims: to DIN 43880
W. 17.5mm

- Compact 17.5mm wide DIN rail housing allows for product to be used where space is tight
- Designed to monitor and detect true RMS fault currents
- Protected against nuisance tripping
- Microprocessor controlled
- Relay normally de-energised and energises on trip
- Selectable trip levels: 30, 100, 300 or 500mA*
- Selectable time delay: inst. to 10s
- Combined "Test" and "Reset" push button
- SPDT relay output 7A
- Green LED indicates presence of power supply
- Red LED permanently illuminates indicating unit has tripped or flashes if external toroid has been disconnected
- Compliant with IEC 60947-2 Annex M

ISO 9001:2015
Cert. No. 14125771

FUNCTION DIAGRAM



INSTALLATION AND SETTING

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as shown in the diagram below. Please note that the size of the externally connected toroid (connected to terminals "**CT1**" and "**CT2**") will have a minimum recommended trip/sensitivity (please refer to separate toroid data sheet) so the model of ELR should be chosen bearing this in mind.
- DO NOT install the unit in close proximity to equipment generating high magnetic fields.
- Ensure the voltage to be applied to terminals "**A1**" and "**A2**" corresponds with the voltage marked on the unit itself.

Setting the unit

- Set the **"trip level"** ❹ and **"time delay"** ❺ adjustments according to the requirements of the application.

Applying power

- Apply power, the green "**supply on**" ❶ LED will illuminate. The output relay will remain de-energised.
- When a fault current exceeds the fixed IΔn trip setting, the output relay will energise and red "**tripped**" ❷ LED will illuminate. 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/Reset**" ❸ button on the unit. The output relay will energise.
- Press the same "**Test/Reset**" ❸ button again 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.

TECHNICAL SPECIFICATION

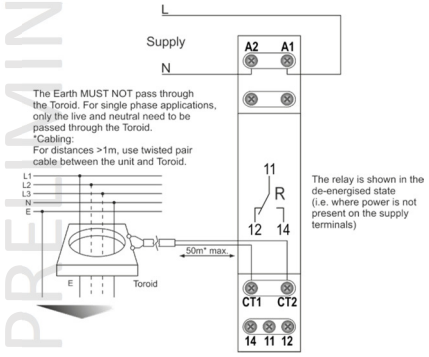
Supply voltage Us^ **(A1, A2):**	24, 115, 230V AC (85 – 115% of Us)	
Frequency range:	48 - 63Hz	
Overvoltage category:	III (IEC 60664)	
Rated impulse withstand voltage Uimp: (1.2/50µS) IEC 60947-2	800V (Us = 24V AC) 2.5kV (Us = 115V AC) 4kV (Us = 230V AC)	^ Please state supply voltage when ordering
Power consumption (max.):	<10W	
Monitored input **(CT1, CT2)**:	Via external toroid connected	
Unit classification:	Type A	
External toroid ratio:	1000:1	
Rated current In:	See BZCT data sheet for recommended toroids	
Trip level/Sensitivity settings (IΔn):	30, 100, 300, 500mA	
Time delay settings (Δt):	0*, 0.06, 0.15, 0.5, 1, 5, 10s ** Actual delay is <25ms when fault current @ 5 x IΔn*	

Note:
1. For IΔn setting of 30mA, the time delay is fixed to 0s (instantaneous) and is not adjustable (i.e. setting any other time delay has no effect)
2. The unit is factory set to 30mA and 0s (instantaneous) delay. Adjustment of these settings can be made if necessary to suit the requirements of the installation.

Trip level:	75% of IΔn	
Hysteresis:	8% of IΔn	
Accuracy:	±10%	
Reset time:	≈ 100ms (from supply interruption)	
Power on indication:	Green LED	
Tripped:	Red LED	
Memory:	Storage of the leakage fault and reset with the "Reset" push button	
Ambient temperature:	-20 to +55°C	
Relative humidity:	+95% max.	
Output **(11, 12, 14)**:	SPDT relay	
Output rating:	AC1	250V 7A (1750VA)
	AC15	250V 3A
	DC1	25V 10A (250W)
Electrical life:	≥ 100,000 ops at rated load	
Dielectric voltage:	750V AC (rms) IEC 60947-1 (C to N.O. contact)	
Rated impulse withstand voltage:	1kV (1.2/50µS) IEC 60664	
Housing:	Grey flame retardant Lexan UL94	
Weight:	62g	
Mounting option:	On to 35mm symmetric DIN rail to BS EN 60715 or direct surface mounting via 2 x M3.5 or 4BA screws using the black clips provided on the rear of the unit.	
Terminal conductor size:	2 x ≤ 2.5mm² solid or stranded	
Terminal screw:	M3 (Designed for use with **PZ1** "pozi-driver")	
Tightening torque:	0.6Nm Max.	
Approvals:	Conforms to: IEC 60947-2/Annex M CE, and RoHS Compliant. IEC 61000 (EMC)	

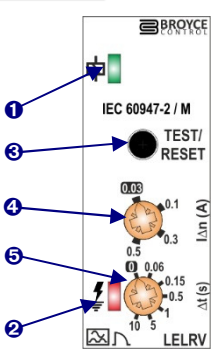
Numbers/characters shown above in bold/within brackets refer to terminal printing on the housing.

CONNECTION DIAGRAM

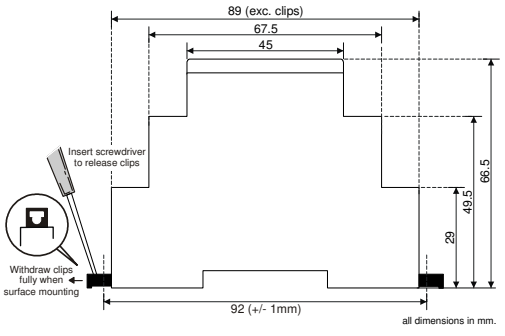


INDICATION & SETTINGS

1. Power supply status (Green) LED
2. Tripped status (Red) LED
3. "Test/Reset" button
4. Trip setting adjustment (IΔn) in Amps
5. Time delay adjustment (Δt) in seconds



DIMENSIONS



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