**Type: ELRV-30**

**Earth Leakage Relay (Variable) - Type A**

- 70mm DIN rail housing
- Designed to monitor and detect earth fault current (up to 30A) in conjunction with a separate toroid
- Digital display shows measured leakage current as well as various user settings
- Microprocessor controlled with internal monitoring (self-checking)
- Sensitivity (Δn) and time delay (Δt) adjustable using simple 2-button operation
- “Display” push button allows user to view settings without needing to open the terminal box
- Single button operates for “Test/Reset” and connection facility for remote “Test” and “Reset” push buttons
- Connection for remote lamp facility warning user prior to a trip condition (level adjustable by user)
- Toroid open circuit detection forces unit to trip
- 2 x SPDT relay output 8A
- LED indication of user settings and fault condition after unit has tripped

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**FUNCTION DIAGRAM**

- Trip level (δn)
- Re-set level
- Standard output
- Positive safety output
- Test current
- Power consumption (max.): 6VA (AC supplies) 5W (DC supplies)
- Ambient temp: -5 to +60°C
- Memory: storage of leakage fault and reset with “test/reset” button
- Reset time: < 120mS (from supply interruption)
- Display accuracy: ±15% of actual measured leakage current
- Time delay: < 120mS

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**INSTALLATION**

- Installation work must be carried out by qualified personnel
- Before installation, isolate the supply
- Connect the unit as shown in the diagram below (N.B. certain features may not be required and therefore do not need to be installed)
- Operative and testing instructions can be found on the reverse of this data sheet

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**CONNECTION DIAGRAM**

- A1 (+ve)
- A2 (-ve)
- Terminal conductor size: 4mm² solid wire
- Power consumption: 250mW for DC outputs
- Rated impulse withstand voltage: 4kV (1.2/50μs)
- Rated impulse dielectric voltage: 2kV AC rms IEC 60947-1
- Terminal protection to IP20

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**MOUNTING DETAILS**

- Terminal conductor size: 4mm² solid wire
- Approvals: Conforms to IEC 755, 50081-1, 50081-2, 50082-1 and 50082-2

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**TECHNICAL SPECIFICATION**

- Supply voltage (U1, 3): 110-230V AC 50-60Hz
- Frequency range: 50-60Hz (AC supplies)
- Over voltage category: Over voltage category III
- Rated impulse withstand voltage: 1.5kV (1.2/50μs)
- Rated impulse dielectric voltage: 2kV AC rms IEC 60947-1
- Nominal current: 10-30A
- Time delay: < 120mS
- Reset value: < 7% of tripped level
- Display accuracy: ±15% of actual measured leakage current
- Time delay: < 120mS
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**ACCESSORIES**

- Toroids: BZCT035 - 35mm, BZCT070 - 70mm
- Accessories: BZCT120 - 120mm, BZCT210 - 210mm
- Note: The 120 and 210mm toroids MUST NOT be used if sensitivity settings of less than 30mA are required.

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**TERMINAL PROTECTION TO IP20**

- Supplies to DIN 43880
- Weight: 250g
- Dimensions: 70mm

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**Z-TRAUQ INC.**

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OPERATING INSTRUCTIONS AND SETTINGS

Description
- The operating function of this unit is classed as a Type A for which tripping is ensured for residual sinusoidal alternating current and residual pulsating direct current, whether applied suddenly or slowly rising. Additionally, this unit is protected against nuisance tripping.

Applying power (assuming no leakage current present)
- Apply power and the “positive safety output” relay will energize and contacts 6 and 8 will close. The “standard output” relay will remain de-energized (contacts 12 and 14 open).
- After carrying out a self-test all segments illuminate on the LED display for a short period, indicating that it is in the test mode.

Troubleshooting
- Leakage currents
- If during normal service, the leakage current increases above the setting for the leakage current output (i.e. 50%), the relay will de-energize and contacts 3 and 6 will open.

Note: The unit is factory set to 30mA trip and instantaneous delay. The remote fault level output is set to 50%. Adjustment of these settings is prevented by the tamperproof cover, which is sealed at the factory. Access to the push buttons, which are used to change the settings, can only be made once the factory seal is broken. A spare seal is supplied with the unit and should be fitted if any adjustments are made.

Viewing and changing the user settings.
- The setting can be viewed and checked by pressing the “Display” button as shown. Carrying out adjustments to these settings requires the tamperproof cover to be lifted and access to the two push buttons underneath.
- If during the adjustment of any settings, a push button is released, the display will revert back to indicating the measured “leakage current” after short duration.

Fault simulation (Test mode)
- The unit can also be reset using the external “Reset” button (if fitted) or by interrupting the power supply.
- To satisfy regulations, it is recommended that the device be tested periodically to ensure correct operation.

Fault conditions
- Leakage currents
- If the unit is not in a fault condition and the applied voltage is <80% of Un, the unit will not operate and the display shows the following characters.

Note: After a change to a setting has been made, the new setting will only be stored once the yellow LED has stopped flashing.

Fault simulation (Test mode)
- The unit can be placed into a fault condition by pressing the “Test/Reset” button on the front of the unit (or by pressing the remote “Test” button - if fitted). If the unit is already in a “no fault” condition, i.e., not tripped, the first press will trip the unit. The output relays operate accordingly. The display shows the following characters.

To modify settings
- Release “Display” button

Note: The above is only an example of how the unit could be set.