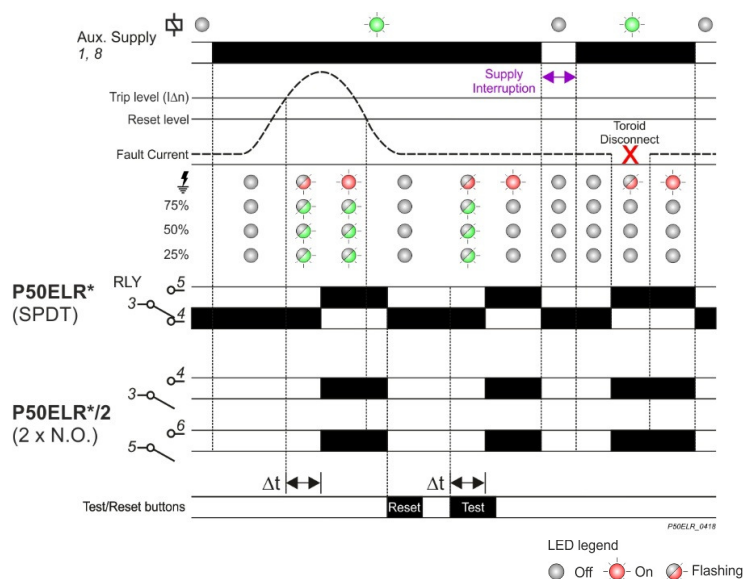


Terminal Protection to IP20



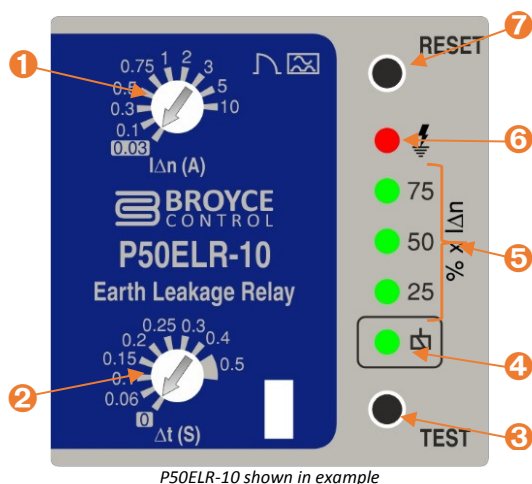
- ❑ Panel (Flush) Mount enclosure * -3, -10 or -30
- ❑ Adjustable side clips provide quick method of mounting (no fixing screws required)
- ❑ 6 models available (3A, 10A or 30A with either SPDT or 2 x N.O. relay outputs)
- ❑ Designed to monitor and detect true RMS leakage current in conjunction with separate toroid
- ❑ Adjustable Trip level ($I_{\Delta n}$) and Time delay (Δt) settings
- ❑ Separate "Test" and "Reset" push buttons
- ❑ Toroid open and short-circuit detection forces unit to trip (Red LED flashes during this condition)
- ❑ Relay energises when fault current exceeds set Trip level
- ❑ LED indication for Power Supply, Leakage Current and Trip status
- ❑ SPDT relay output - 8A (Part No. P50ELR-3, P50ELR-10 and P50ELR-30)
- ❑ 2 x N.O. relay outputs - 3A (Part No. P50ELR-3/2, P50ELR-10/2 and P50ELR-30/2)
- ❑ Single supply voltage option – 115V or 230V AC
- ❑ Compliant with IEC 60755

FUNCTION DIAGRAM



SETTING DETAILS

1. Trip setting adjustment ($I_{\Delta n}$) in Amps
2. Time delay adjustment (Δt) in seconds
3. "TEST" button
4. Green "Power On" (Normal) LED indication
5. Green "Leakage Current" LED indication
6. Red "Tripped" (Fault) LED indication
7. "RESET" button



INSTALLATION AND SETTING

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Remove the P50ELR from the packaging.
- Lift the raised part of the side clip and slide towards the rear of the housing to remove. Carry this out on both sides.
- Insert the P50ELR in to the panel cut-out and fit the side clips back on to the housing.
- Slide the clips towards the front of the unit until they come in to contact with the reverse side of the panel. The unit is now secured in place.
- Connect the wires to the rear terminals as required following the diagram shown on the next page and for the relevant model shown.
- Ensure the Auxiliary supply voltage to be connected to terminals 1 and 8 matches the rating of the product.

Setting up

- The unit should be set according to the requirements of the application.

Applying power

- Apply power and the green "Power on" LED will illuminate.
- Assuming no fault present, the output relay(s) will remain in the de-energised state.
- Prior to a fault occurring, the LED bargraph will indicate the % of $I_{\Delta n}$ being detected (the display is scaled between 25, 50, and 75% of the actual trip level). After all 3 LED's have illuminated and the unit trips due to an excessive fault current, the red "tripped" LED will illuminate.

Fault simulation (Test mode)

- The unit can be placed into a fault condition by pressing the "Test" button on the front of the unit. The output relay(s) will energise.
- Press the "Reset" button on the front to reset the unit. The output relay(s) revert back to the de-energised state.
- 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

Auxiliary Power Supply (1, 8)

Supply voltage (Un):	115V or 230V AC (To be specified when ordering)
Frequency range:	50/60Hz
Supply variation:	85 – 115% of Un
<i>Auxiliary supply is galvanically isolated from the Toroid connections</i>	
Overvoltage category:	III
Rated impulse withstand voltage:	4kV (1.2/50µs) IEC 60664
Power consumption (max.):	6VA

Device Characteristics

Unit classification:	Type A
Measurement principle:	True R.M.S.
Trip level [Sensitivity] settings (IΔn): <i>See "Ordering" also</i>	
P50ELR-3:	30mA, 50mA, 100mA, 200mA, 300mA, 500mA, 1A, 1.5A, 2A, 3A
P50ELR-10:	30mA, 100mA, 300mA, 500mA, 750mA, 1A, 2A, 3A, 5A, 10A
P50ELR-30:	30mA, 300mA, 500mA, 1A, 3A, 5A, 10A, 15A, 20A, 30A
Trip level limits:	80 – 90% of IΔn
Reset value:	~85% of tripped level
Time delay [Operating time] settings (Δt):	0*, 60, 100, 150, 200, 250, 300, 400, 500ms <i>*Actual delay when set to "0" is <25ms @ 5 x IΔn</i>

Note:

- 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)
- 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. Once the settings are made, the front window can be sealed if required to prevent unnecessary adjustment.

Reset time:

<2s (from supply interruption)

Monitored input (via external Toroid connected to terminals 2 and 7)

External Toroid ratio: 1000:1

LED indication

Power Supply:	Green x1	
Tripped:	Red x1	<i>LED flashes if the external toroid is disconnected.</i>
Bargraph (25, 50, 75%):	Green x3	

Test and Reset

"Test" method (assuming unit is in the non-tripped state): Press once to trip the unit

"Reset" method (assuming unit is in the tripped state and fault current cleared): Press once to reset the unit

Temperature rating

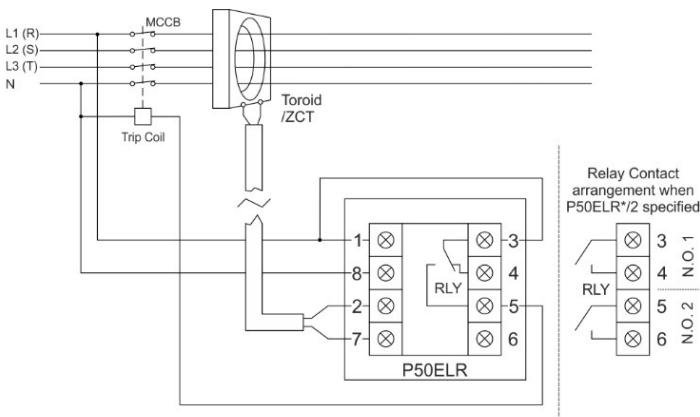
Operating:	P50ELR* -20 to +60°C	P50ELR*/2 -20 to +55°C
Storage:	-30 to +70°C	
Relative humidity:	+95% max.	

Output - Model No./Type

Rear Terminal No.:	P50ELR* (3, 4, 5)	P50ELR*/2 (3, 4 / 5, 6)
Contact arrangement:	1 x SPDT	2 x SPNO
AC1 (250V)	8A (2000VA)	3A (750VA)
AC15 (250V)	2.5A	1.5A
DC1 (25V)	8A (200W)	3A (75W)

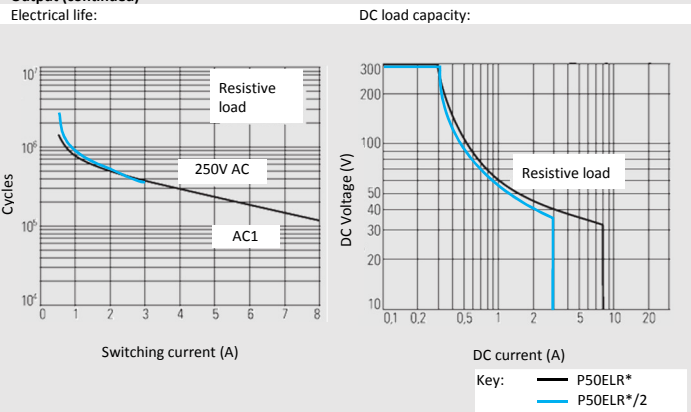
Where * refers to product current rating, i.e. 3, 10 or 30

CONNECTION DIAGRAM



TECHNICAL SPECIFICATION (continued)

Output (continued)



Dielectric voltage:	1kV AC (rms) IEC 60947-1
Rated impulse withstand voltage:	4kV (1.2/50µs) IEC 60664

Housing

Material:	Grey flame retardant Lexan UL94 V0
Weight:	≈ 205g
Protection:	IP40 (front face) / IP20 (rear)
Mounting:	Panel mount. Cut-out (see information below)
Max. panel thickness:	10mm

Rear Terminals

Conductor size:	0.3 – 2mm ² (22 – 14AWG)
Wire stripping length:	≈ 6mm
Recommended tightening torque:	1.3Nm (12lb-in)

Standards

Product:	IEC 60755, IEC 62020
EMC:	IEC 61543, IEC 61000-4 Series
	CE and RoHS Compliant. C-tick

Toroid options

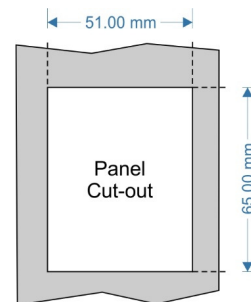
Part number:	Aperture	Internal diameter/size:	Rated current
BZCT035	○	35mm ∅	150A
BZCT050	○	50mm ∅	250A
BZCT070	○	70mm ∅	400A
BZCT120	○	120mm ∅	600A
BZCT160	○	160mm ∅	1000A

Ordering:

Please specify product part number and voltage when ordering.
For example:

P50ELR-30 230V AC

CUT-OUT



DIMENSIONS

