

## ELV-PRO ANALYSER

### Electrical Protection Relays

#### Description

Ampcontrol's ELV-PRO is a high performance, microprocessor based, wide bandwidth earth leakage protection relay that is capable of measuring and analysing power and switching frequency currents flowing in IT power systems. The ELV-PRO uses patented technology (US20130258537) to characterise earth leakage currents giving superior fault discrimination.

The ELV-PRO relay is designed for use in systems that may exhibit circulative earth currents and complex earth leakage currents typically associated with variable speed drives in mining environments.

#### Features

- Compliance to AS/NZS 4871 and AS/NZS 2081
- Patented earth leakage analysis method\*
- Fail safe operation
- Wide range Earth Leakage Current Measurement (20 Hz to 8 kHz)
- Wideband, Narrowband and Weighted Frequency Response Modes
- Adjustable trip level and trip times
- On board memory logs last 1000 data logs and 50 events
- CIP over EtherNet/IP for control and monitoring
- Modbus TCP
- Continuous Toroid Connection Monitoring
- DIN rail mounted



\* International patent application number PCT/AU2011/000705

#### Application

The ELV-PRO is intended for use at transformer NER connection points as a BUEL Protection relay. The relay is not limited to be used in this configuration only, and can be utilised on any individual outlet if desired. This would allow greater earth leakage current data to be captured relating to a specific outlet, rather than the entire system connected to the transformers secondary that the NER is protecting.

The ELV-PRO provides data logging to assist in fault finding. On each event trigger, the relay stores system data 2 seconds before and 2 seconds after the event including system time, earth leakage current, phase current and zero crossing of the phase current.

Ethernet connection to the ELV-PRO relay provides the ability to monitor the device parameters and real time measured current from an internet browser. All data logs stored on the unit can also be viewed.



### Specifications

<b>Supply</b>	
<i>Regulated Voltage</i>	24V DC $\pm$ 25%
<i>Power Supply Requirement</i>	12W
<b>Dimensions</b>	
<i>OTS (W x H x L) (mm)</i>	135 x 135 x 107
<b>Operating Conditions</b>	
<i>Ambient operating temperature</i>	0-60°C
<i>IP Rating</i>	IP20
<b>Earth Leakage Protection</b>	
<i>Trip Current Level</i>	50mA – 5A (50mA – 1A in 50mA increments, 1A – 5A in 100mA increments)
<i>Trip Operation Time</i>	Instantaneous – 500ms in 50ms increments.
<b>Output Contacts</b>	
<i>Relay 1 – Fail Safe</i>	1xCO (Mechanical) 6A / 250VAC, 50VDC, 300VA ( $\cos\phi=1$ )
<i>Relay 2 – Fail Safe</i>	1xNO (Solid State) 2.9A / 110VAC/DC, 100VA ( $\cos\phi=1$ )
<b>ELV-PRO Inputs</b>	
<i>Inputs 1-5</i>	Programmable Trip/Log functions
<i>Input 6 – Trip Reset</i>	Manual trip reset by external pushbutton.
<i>Earth Leakage Toroid (CT)</i>	Toroid 100/1A (Ampcontrol EL500S series recommended).
<i>Phase Monitoring Toroid (CT)</i>	Optional; 5A secondary toroid, for monitoring a selected phase current
<i>Zero Crossing (110VAC)</i>	Optional; Phase current zero crossing detection
<b>Communication Interface</b>	
<i>Ethernet Socket</i>	Relay 10BASE-TX or 100BASE-TX accessible via http (using a standard web browser).
<i>EtherNet IP</i>	Standard Protocol, See above for details
<i>Modbus IP</i>	Standard Protocol, See above for details
<b>Find Out More</b>	
For more information on this product, contact Ampcontrol Customer Service on +61 1300 267 373 or <a href="mailto:customerservice@ampcontrolgroup.com">customerservice@ampcontrolgroup.com</a> or visit the Ampcontrol website: <a href="http://www.ampcontrolgroup.com">www.ampcontrolgroup.com</a>	

### Equipment List

<b>Part Number</b>	<b>Description</b>
176426	ELV-PRO - Wideband earth leakage relay
179971	ELV-PRO Settings Dongle
115437	Toroid EL500S - 25mm ID
101658	Toroid EL500S - 60mm ID
101656	Toroid EL500S - 112mmID

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