

# EL731 SERIES

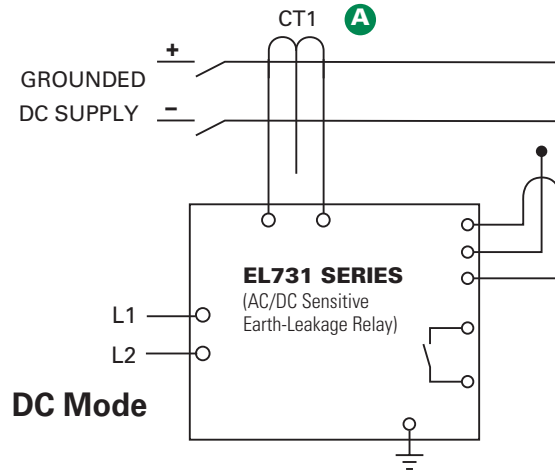
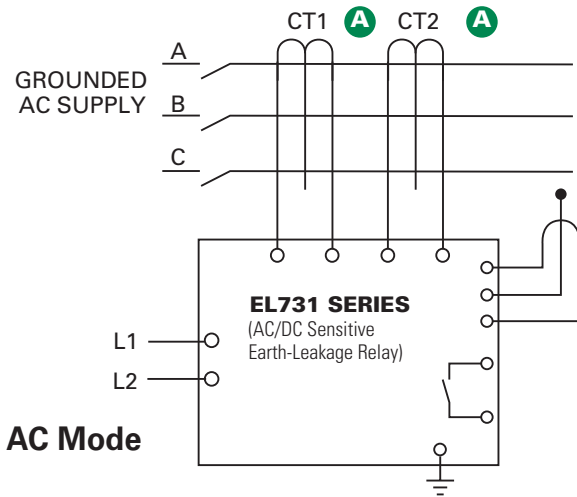
## AC/DC Sensitive Earth-Leakage Relay



### Description

The EL731 is a microprocessor-based AC/DC Sensitive Earth-Leakage Relay that offers complete coverage for all frequencies from 0 to 6,000 Hz. Two CTs are required for the entire frequency range, or one CT can be used for only low- or high-frequency detection. An RTD/PTC sensor input allows over-temperature protection for a motor or drive. The EL731 offers metering, password-protected alarm and trip settings and optional network communications. It is primarily used to add low-level ground-fault protection to variable-speed drives, and to dc circuits.

### Simplified Circuit Diagram



For detailed wiring diagram, see adjacent page.

### Ordering Information

ORDERING NUMBER	CONTROL POWER	COMMUNICATIONS
EL731-00-X0	120/240 Vac/Vdc	None
EL731-01-X0	120/240 Vac/Vdc	DeviceNet™
EL731-02-X0	120/240 Vac/Vdc	Profibus®
EL731-03-X0	120/240 Vac/Vdc	EtherNet/IP™
EL731-04-X0	120/240 Vac/Vdc	Modbus® TCP
EL731-10-X0	48 Vdc & 24 Vac	None
EL731-11-X0	48 Vdc & 24 Vac	DeviceNet™
EL731-12-X0	48 Vdc & 24 Vac	Profibus®
EL731-13-X0	48 Vdc & 24 Vac	EtherNet/IP™
EL731-14-X0	48 Vdc & 24 Vac	Modbus® TCP
EL731-20-X0	24 Vdc	None
EL731-21-X0	24 Vdc	DeviceNet™
EL731-22-X0	24 Vdc	Profibus®
EL731-23-X0	24 Vdc	EtherNet/IP™
EL731-24-X0	24 Vdc	Modbus® TCP

### Accessories

**A** **EFCT Series Earth-Fault Current Transformer**  
Required zero-sequence current transformer specifically designed for low level detection.

**AC700-CUA Series Communication Adapter**  
Optional network-interface and firmware-upgrade communications adapters field-install in EL731.

**AC700-SMK DIN-rail & Surface-mount Adapter**  
EL731 plugs into adapter for back-plane mounting.

ACCESSORIES	REQUIREMENT
EFCT Series CT	One Required
AC700-CUA Series Com. Unit	Optional
AC700-SMK Surface-Mount Kit	Optional
AC700-CVR-00 Watertight Cover (IP66) for Panel-Mount Applications	Optional
PGA-0520 Analog Meter	Optional

Note: When building a part number, replace the "X" with "1" for AS/NZS 2081:2011 Compliant product, "0" otherwise.

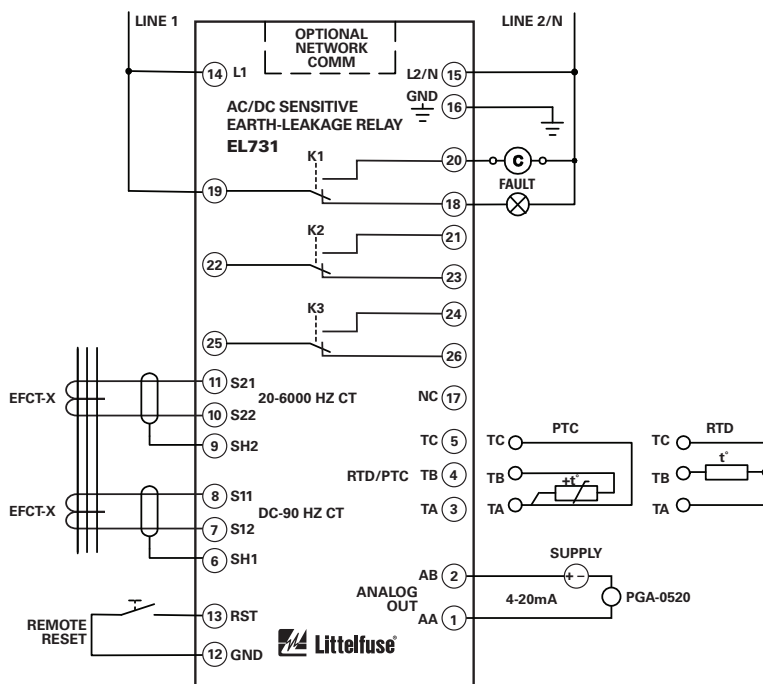
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### Features & Benefits

FEATURES	BENEFITS
<b>Adjustable pickup (30-5,000 mA)</b>	Adjustable trip setting provides a wide range of low-level protection and system coordination
<b>Frequency range (0-90 Hz, 20-6,000 Hz)</b>	Operate in either AC or DC mode or both. Use single or combined ranges. Separate metering
<b>32-char OLED display</b>	Earth-leakage metering, setup and programming
<b>Local LED indication</b>	Visual Trip, Alarm, CT connection indication
<b>CT-Loop monitoring</b>	Alarms when CT is not connected
<b>Analog output (4-20 mA)</b>	Connect to DCS. Allows connection to an optional meter (PGA-0520) or control system
<b>Adjustable time delay</b>	Adjustable trip delay for quick protection and system coordination
<b>Alarm and trip settings</b>	Detect a deteriorating condition before damage occurs
<b>Temperature-sensor input</b>	Drive or motor temperature protection
<b>Output contacts</b>	3 programmable: Operate 2 alarm and 1 trip circuit
<b>Network communication</b>	Optional connection to plant network
<b>Harmonic filtering</b>	Eliminates nuisance tripping due to harmonic noise
<b>Microprocessor based</b>	No required calibration saves maintenance cost
<b>Universal power supply</b>	Provides flexibility for numerous applications

### Wiring Diagram



### Specifications

<b>IEEE Device Numbers</b>	AC ground fault (50G/N, 51G/N), DC ground fault (79G), PTC overtemperature (49), RTD temperature (38, 49)
<b>Supply Voltage</b>	120/240 Vac/Vdc, 24 Vdc, 48 Vdc/24 Vac
<b>Trip Level Settings</b>	30-5,000 mA AC and DC
<b>Alarm Level Settings</b>	30-5,000 mA AC and DC
<b>Trip Delay</b>	0.05-2 s
<b>Output Contacts</b>	3 Form C (programmable)
<b>Contact Operating Mode</b>	Fail-safe & non-fail-safe
<b>Reset</b>	Front panel and remote
<b>Freq. Response, CT1</b>	0-90 Hz
<b>Freq. Response, CT2</b>	20-6,000, 190-6,000, 20-90, 20-3,000 Hz; selectable
<b>Current Transformer</b>	EFCT-x series
<b>CT Detection</b>	Open & short detection
<b>Terminals</b>	Plug-in, wire clamping, 24 to 12 AWG (0.2-2.5 mm <sup>2</sup> )
<b>Communications</b>	EtherNet/IP™, DeviceNet™, Profibus®, Modbus® TCP (optional)
<b>Analog Output</b>	4-20 mA (selectable 0-5 A or 0-100% trip-level setting)
<b>Conformal Coating</b>	Standard feature
<b>Dimensions</b>	<b>H</b> 48 mm (1.9"); <b>W</b> 96 mm (3.8"); <b>D</b> 129 mm (5.0")
<b>Approvals</b>	UL Listed (E340889), CSA, RCM (Australia), CE
<b>Warranty</b>	5 years
<b>Mounting</b>	Panel; Surface and DIN (with optional AC700-SMK)

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