

EL731 SERIES

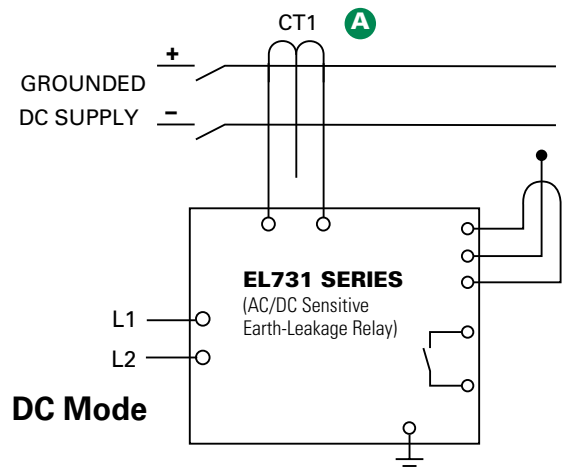
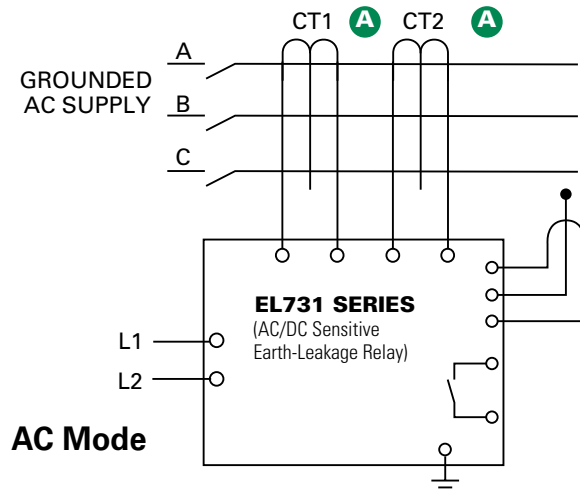
AC/DC Sensitive Earth-Leakage Relay



Description

The EL731 is a microprocessor-based AC/DC Sensitive Earth-Leakage Relay that offers complete coverage for all frequencies from 0-6,000 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. The EL731 offers metering capabilities, password-protected alarm and trip settings and optional network communications. It is used to add low-level ground-fault protection to variable-speed drives, and to dc currents.

Simplified Circuit Diagram



For detailed wiring diagram, see adjacent page.

Ordering Information

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

Accessories



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 |

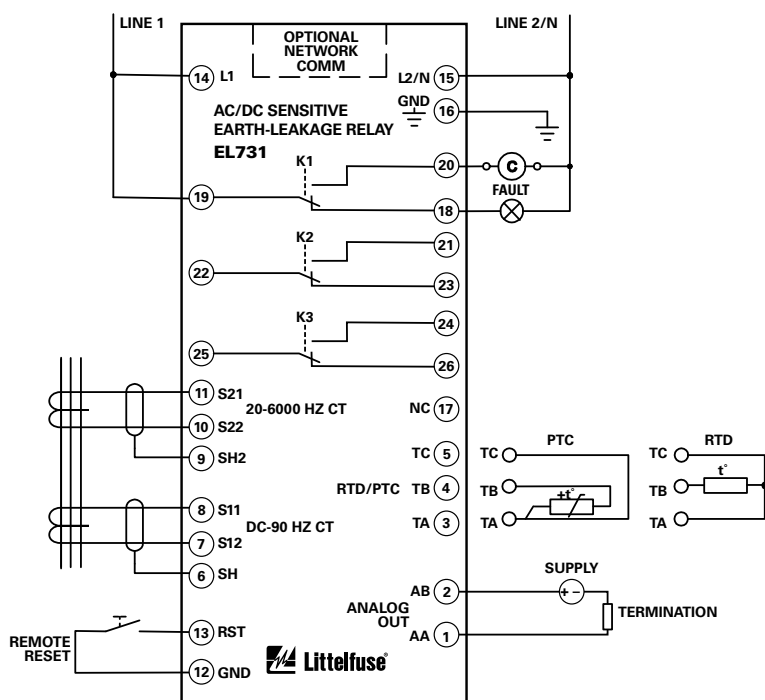
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Features & Benefits

| FEATURES | BENEFITS |
|---|---|
| Adjustable pickup (30-5,000 mA) | Adjustable trip setting provides a wide range of low-level protection and system coordination |
| Frequency range (0-90 Hz, 20-6,000 Hz) | Operate in either AC or DC mode or both. Use single or combined ranges. Separate metering. |
| 32-char OLED display | Earth-leakage metering, setup and programming |
| Local LED indication | Visual Trip, Alarm, CT connection indication |
| CT-Loop monitoring | Alarms when CT is not connected |
| Analog output (4-20 mA) | Connect to DCS. Allows connection to an optional meter (PGA-0500) or control system |
| Adjustable time delay | Adjustable trip delay for quick protection and system coordination |
| Alarm and trip settings | Detect a deteriorating condition before damage occurs |
| Temperature-sensor input | Drive or motor temperature protection |
| Output contacts | 3 programmable: Operate 2 alarm and 1 trip circuit |
| Network communication | Optional connection to plant network. |
| Harmonic filtering | Eliminates nuisance tripping due to harmonic noise |
| Microprocessor based | No required calibration saves maintenance cost |
| Universal power supply | Allows operation in application where one side of PT is faulted, provides flexibility for numerous applications |

Wiring Diagram



Specifications

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

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