

EL731 SERIES

AC/DC Sensitive Earth-Leakage Relay

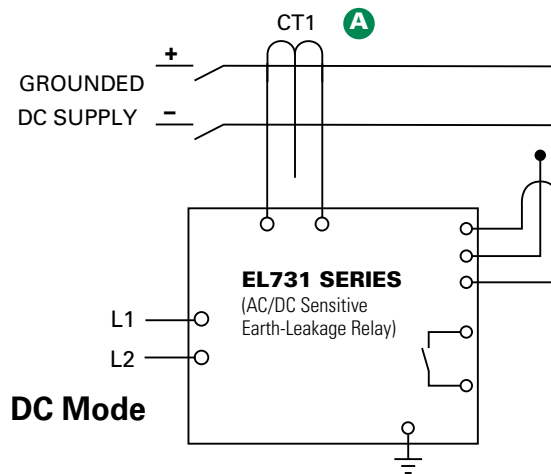
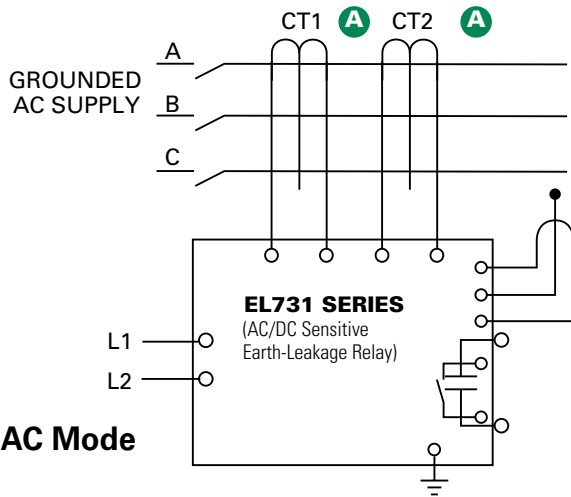
Cross Reference RA Part Number PN-279960



Description

The EL731 is a microprocessor-based AC/DC Sensitive Earth-Leakage Relay that offers complete coverage for all frequencies from 0-15,000 Hz. Two CT's 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 and page 148.

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	PAGE
EFCT Series CT	One Required	114
AC700-CUA Series Com. Unit	Optional	121
AC700-SMK Surface-Mount Kit	Optional	111

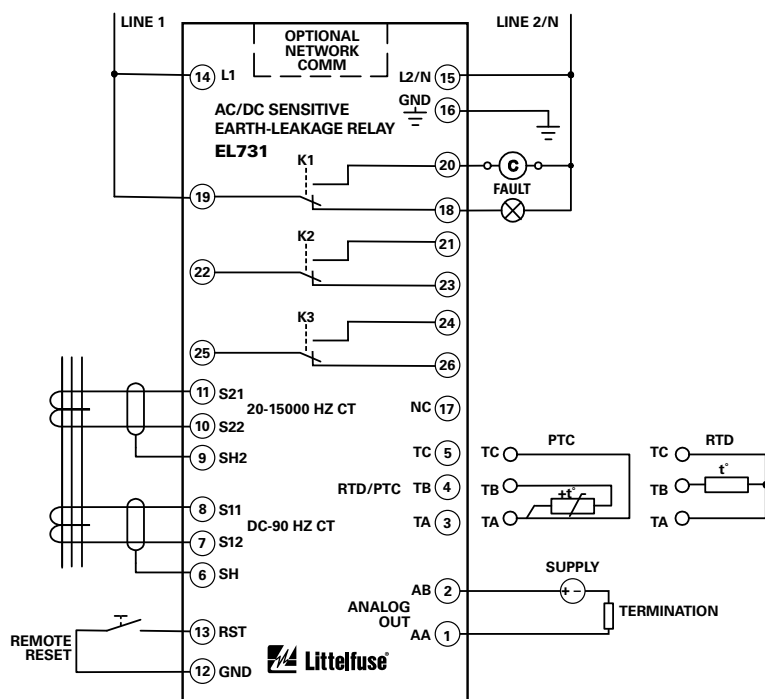
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GROUND-FAULT PROTECTION



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, 20-15,000 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	20-15,000, 190-15,000, 20-90 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, CSA, C-Tick (Australian)
Warranty	5 years
Mounting	Panel; Surface and DIN (with optional AC700-SMK)