CROMPTON INSTRUMENTS EARTH LEAKAGE RELAY

MONITORS THE EARTH LEAKAGE CURRENT THROUGH CORE BALANCED CURRENT TRANSFORMERS

APPLICATIONS

- Motor protection
- Mining equipment
- Industrial premises
- Substation premises

RELEVANT STANDARDS AND TEST REPORTS

- IEC 61326.
- IEC 60947-2 : Annex - M
- IEC 61010-1- 2001

KEY FEATURES

- Easy operation
- CBCT connection fault detection
- True RMS Measurement up to 15th harmonic
- Programmable parameter
- Trip Delay

TE Connectivity's Crompton Instruments Earth Leakage Protection Relay is a safety device designed to protect electrical installations from electric shock and equipment damage. These hazards may arise due to compromised insulation or accidental contact with live components.

The relay functions by continuously monitoring earth leakage current via a Core Balance Current Transformer (CBCT). When hazardous leakage levels are detected, the device promptly disconnects the circuit to prevent harm.

Key Features and Configurable Options (via DIP Switches):

1. **Reset Mode Selection**
   Choose between automatic reset (auto-reclosure) or manual reset. The relay resets once the fault condition is cleared and current levelsreturn to normal.
2. **Alarm Relay Configuration**
   Option to configure a single normally open (1 NO) relay as either an Alarm Relay or a Fail-Safe Relay.
3. **Main Relay Operation Mode**
   Configure the main relay to operate in either energized or de-energized mode upon fault detection.

Relay Operation Modes:

- **Energized Mode:**
  The relay pole and normally open (NO) contacts are energized (ON) when a fault occurs.
- **De-energized Mode:**
  The relay pole and NO contacts are de-energized (OFF) when a fault occurs.

Product selection	
Product	**Description**
ELR-H	24-240 V AC/DC
ELR-L	12-24 V DC

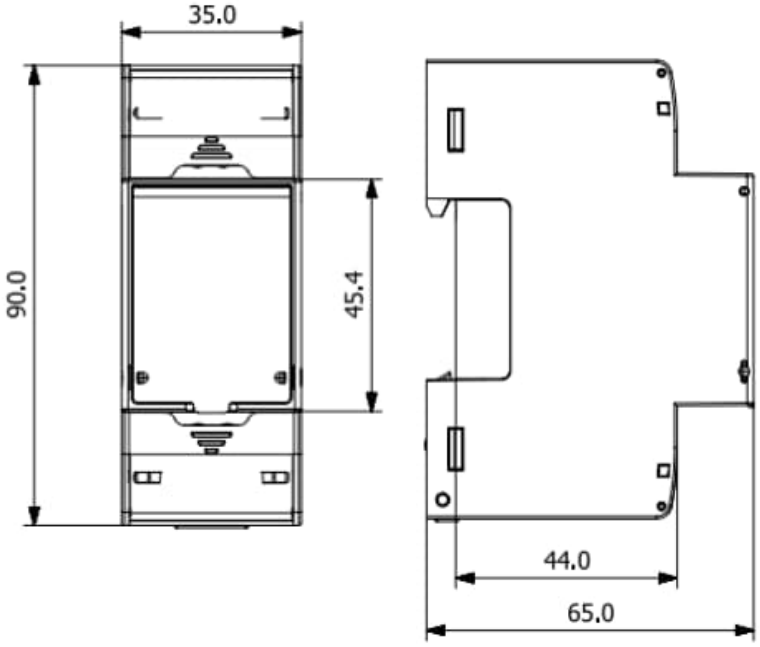
The following configurations are possible through DIP switch positions.

1. Auto-reclousure (Reset) or manual reset selection for reset of relay when currents are normal after fault condition is removed
2. Configuration option of 1 NO relay (Alarm Relay or Fail Safe Relay)
3. Main Relay configuration as Energized or De-energised

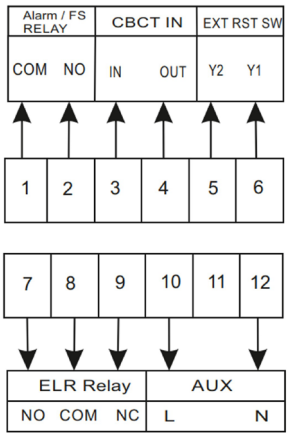
NOTE:

1. Energized configuration : Relay Pole and NO contacts become energized (ON) upon fault.
2. De-Energized configuration : Relay Pole and NO contacts become De-energized (OFF) upon fault.

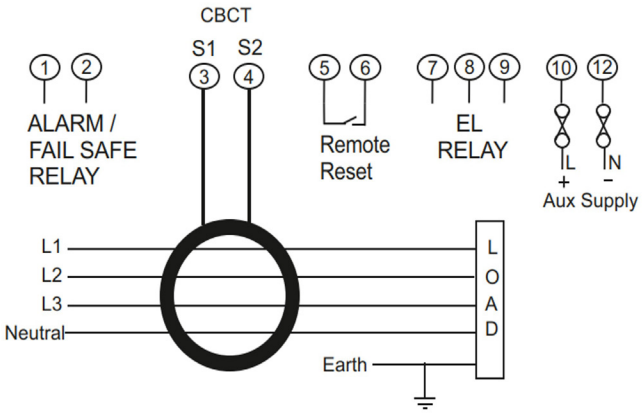
DIMENSIONAL INFORMATION



TERMINAL DETAILS



CONNECTION DIAGRAM



TECHNICAL SPECIFICATIONS

Input characteristics	
Leakage current (In)	30mA to 30A (Type A)
Tripping operating range	80 % to 100% of In
Alarm operating range	> 50 % of In
Resetting value	- 15 % of operating range
Auxiliary Supply	
Auxiliary supply option1	60V-300V AC / DC
Auxiliary supply option	2 20-60V DC / (20-40 VAC)
Auxiliary supply frequency	45 to 66 Hz range
Auxiliary supply burden	< 4 VA approx.
Accuracy	
Leakage current	+ 5% of full scale
Trip Delay (Including Setting Accuracy)	+ 5% of set trip time or 50ms (whichever is greater)
Instantaneous Trip function	< 25 millisecond for leakage current greater than 5 times (5x) set In*.
Reference Conditions for Accuracy	
Reference temperature	23°C +/- 2°C
Input Waveform	Sinusoidal (distortion factor 0.005)
Input frequency	50/60 Hz ± 2%
Auxiliary supply voltage	230 ± 1%
Auxiliary supply frequency	50 or 60 Hz ±2%
Applicable Standards	
EMC	IEC 61326-1:2012 Table2
Terms, definitions & Test method	IEC 60688
Immunity	IEC 61000-4-3 10 V/m Min - Level 3
Safety	IEC 61010-1-2001,Permanently connected use
IP for water & dust	IEC60529
Pollution degree	2
Installation category	III 300 V
High Voltage Test	2.2 kV AC, 50Hz for 1 minute between all electrical circuits
Environmental:	
Operating temperature	- 20 to + 65°C
Storage temperature	- 40 to + 70°C
Relative humidity	0... 90% (non condensing)
Shock (As per IEC60068-2-27)	Half sine wave, Peak acceleration 30 gn (300 m/s^2),duration 18ms 10... 150...10 Hz, 0.15mm amplitude
Number of Sweep cycles	10 per axis

TECHNICAL SPECIFICATIONS

Relay Contacts	
Relay 1 (ELR) output	1 NO + 1 NC (1 CO)
Relay 2 (Alarm / FS) output	1 NO
Contact rating	5A / 250 VAC or 30VDC
Mechanical endurance	1 x 10^7 OPS
Electrical endurance	5 x 10^4 OPS (Resistive Load)
Remote Reset	
Operation	Non potential free (Voltage level 12 VDC Approx), Isolated contacts for remote resetting of ELR and alarm relay.
Mechanical	
Housing dimensions	90 x 65 x 35 mm As per DIN 43880
Weight	125 Gram Approx.
*Note : 5x current measurement not applicable for 30A range	

CROMPTON INSTRUMENTS CORE BALANCE CURRENT TRANSFORMERS

5 APERTURE SIZES

The TE Connectivity's (TE) Crompton Instruments XLCBCT series of core balanced current transformers are exclusively for use with our ELR earth leakage protection relay. The extremely sensitive toroidal core and secondary winding are encapsulated by a self extinguishing case providing excellent mechanical strength, protection from damage, and electrical insulation.

APPLICATIONS

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Motor protection
- Transformer protection
- Overload protection

KEY FEATURES

- Compact design, reliable & accurate
- Common wall mouting clamp for all sizes
- Sealable cap for secondary terminal connections
- Protective cap for connectors
- Side & vertical mounting provision
- Cable tie for holiding Busbar/ Cables

RELEVANT STANDARDS AND TEST REPORTS

- Conformity to Standard IEC 61869-1

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