ELR-4M SERIES
EARTH LEAKAGE RELAY



Introduction

The ELR series earth leakage relay enhances electrical safety by continuously monitoring leakage current with advanced leakage current transformer. When leakage current exceeds the preset threshold, it instantly triggers an alarm for early fault detection.

Featuring an alarm hold function, it retains the alarm signal until reset, simplifying fault diagnosis. Ideal for preventing equipment damage, reducing downtime, and ensuring personnel safety, the ELR series provides reliable and efficient protection for your power system.

Main Features

- Standard 35mm din rail mounting;
- Digital display with real-time readings;
- Adjustable trip levels (5mA-3A) and time delay;
- Pre-alarm and alarm adjustable response;
- Remote test/rest connections for external activation;
- RS485 Modbus communication;

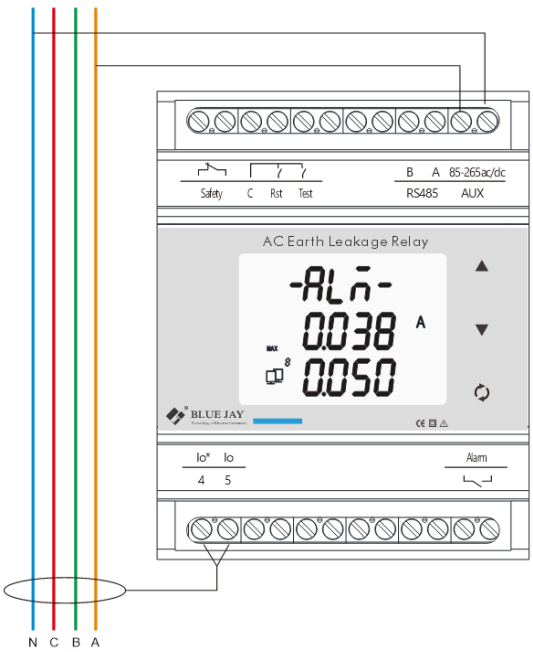
Ordering Information

Model	Description
ELR-4MA	• Use for AC measurement; • Compatible with leakage current transformer; • Adjustable alarm threshold 5mA-3A;
ELR-4MD	• Use for DC measurement; • Compatible with Hall effect current transformer; • Adjustable alarm threshold 5mA-3A;

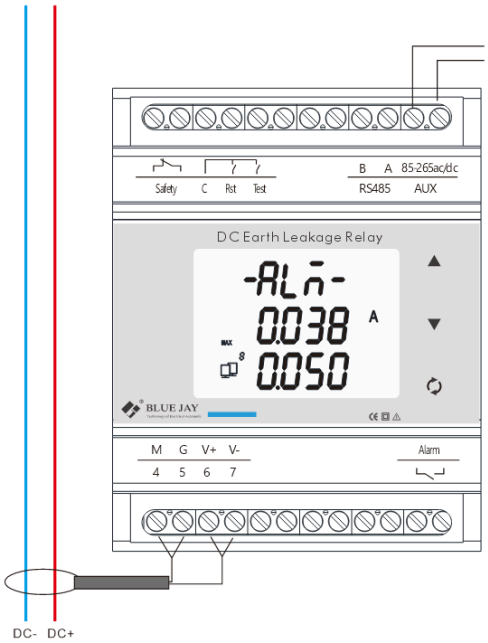
Applcation

- Medium and low voltage systems;
- Battery energy storage systems;
- Commercial and residential buildings;
- Utilities and power distribution systems;
- Motor control panels and switchboards;
- UPS systems and backup power supplies;
- DC system leakage current measurement;
- Industrial control system (PLC, SCADA, DCS);

Wiring Method



ELR-4MA



ELR-4MD

Technical Characteristics

Leakage relay parameter	Value
Auxiliary power supply	85-265Vac/dc
Power consumption	≤4VA
Frequency	50/60Hz, Accuracy ±0.01Hz
AC leakage CT	
Alarm threshold	5mA-3A, can be set; sensitivity: 1mA
Trip time delay	50ms-10sec, can set as need.
Rated input	0-1A
Rated output	0-1V or 0-0.5mA
Measurement range	10%IN-130%IN
Operating frequency	50-400HZ
Operating performance	Type A (acc.to IEC 62020)
Dielectric strength	AC2.5KV 1mA/60S
Insulation resistance	DC500V/1000MΩ
Wiring method	Terminal type/shielded stranded wire 1.5M
DC hall CT	
Alarm threshold	5mA-3A, adjustable; sensitivity: 1mA
Trip time delay	50ms-10sec, adjustable
Power supply	±15Vdc
Rated current range	0-250A, hole size: 60mm
Rated output	±4V
Operating frequency	50-400HZ
Operating performance	Type A (acc.to IEC 62020)
I/O capacity	
Digital input	2* DI for reset/ test, NC dry contact, Ri<500Ω turns on, Ri>100kΩ turns off
Digital output	2* DO; 1* relay, NO for safety; 1* relay NC for alarm; Load capacity: 5A@250VAC
Others	
Communication	RS-485 MODBUS-RTU
Display	LCD with backlit
Dimension (W*H*D)	78*90*60mm
Withstand voltage	2.5KV 1min
Insulation	Input, output, power supply to shell >5MΩ
Storage environment	-40~70°C
Working environment	-25~55°C Altitude ≤2500m,0~95%RH, non-condensing, non-corrosive gas

ELR-CH16 MULTI CHANNEL EARTH LEAKAGE RELAY

Introduction

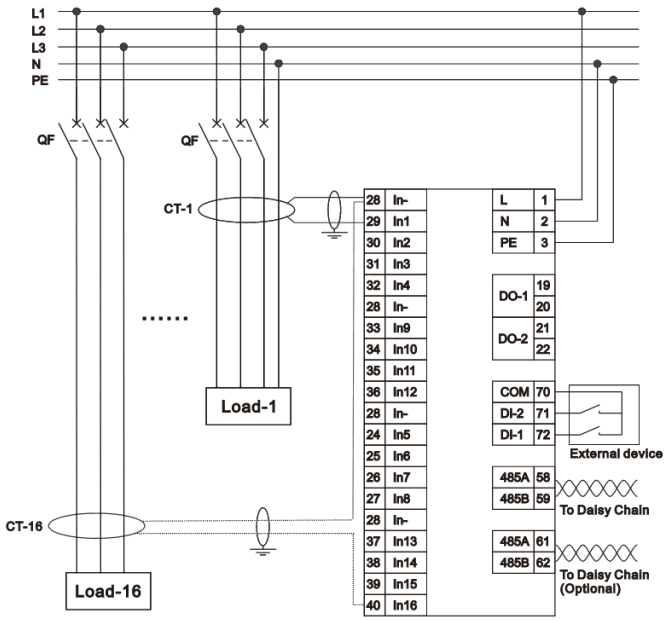
ELR-CH16 Multi-channel earth leakage relay is designed for measuring leakage current and operating temperature in TT and TN-S systems. It can inject multiple sensor signals, which are able to detect and evaluate fault, leakage and operating currents in earthed power supplies.

When the leakage current in the protected line or the temperature exceeds preset alarm value, ELR-CH16 will generate audible & visual alarm signal, front screen shows details value. RS485 port can transfer data to remote host, and data will be recorded internally for post-event failure analysis.

Main Features

- Max 100 events record with timestamp;
- RS485/ Modbus RTU communication;
- Backlit 7-segment display with status LEDs;
- Up to 16 channels for leakage current or temperature;
- Leakage current alarm: 20–1000mA, step 1mA;
- Temperature alarm: 50–120°C, step 0.1°C;
- 2* configurable digital inputs /outputs;
- Built-in buzzer, can manual mute/ reset via function keys;

Wiring Method



Application

- Low-voltage power distribution systems;
- Industrial electrical installations;
- EV charging infrastructure;
- Data centers and critical power systems;
- Commercial and building electrical systems;
- Substations and utility networks;
- Electrical panels and switchgear systems;

Ordering Information

Model	Description
ELR-CH16IN	With 16 leakage current sensor
ELR-CH8IN	With 8 leakage current sensor
ELR-CH8IN8T	With 8 leakage current sensor, 8 temperature sensor
ELR-CH4IN4T	With 4 leakage current sensor, 4 temperature sensor

Technical Characteristics

Working power supply	
Power supply	85-265Vac/dc, DC 20-60V (Optional)
Maximum power consumption	6W
Frequency	45/65Hz, Accuracy ±0.01Hz
Leakage CT	
Alarm threshold range	20mA ~ 1000mA; Default 300mA; Accuracy 1%
Primary side current In	1A(rms)
Secondary side current Io	0.5mA (rms)
CT ratio	2000:1
Load resistor RL	≤ 620 ohm
Secondary side impedance R	100±20 ohm
Temperature sensor	
Measurement range	0 ~120°C
Accuracy	±2°C
Alarm threshold range	50~120°C; Default 50°C
I/O capacity	
Relay capacity	5A@250Vac/ 30Vdc; 2500V optocoupler isolation
Others	
Dimension	Installation size: 96mm×96mm×74mm Hole size: (91+0.8mm) × (91+0.8mm)
Communication	RS-485 MODBUS-RTU
Withstand voltage	2.5KV 1min
Insulation	Input, output, power supply to shell >5MΩ
Dielectric strength	IEC / EN 61010-1:2010 2kV AC RMS 1 minute, between input / output / case / power supply
Storage environment	-25°C ~ +70°C, Altitude ≤2500m, 20~95%RH, non-condensing, non-corrosive gas
Working environment	-20°C ~ +60°C, Altitude ≤2500m, 20~95%RH, non-condensing, non-corrosive gas