

TOYO

EARTH LEAKAGE RELAY



■ Introduction

• Earth Fault Protection

The purpose of earth fault protection is to measure the earth leakage current of an electrical installation, or part of an installation and interrupt the supply of power if this current becomes dangerous to life or property. ELR is a range of earth fault relays with separate toroids, a solution offering both flexibility and performance.

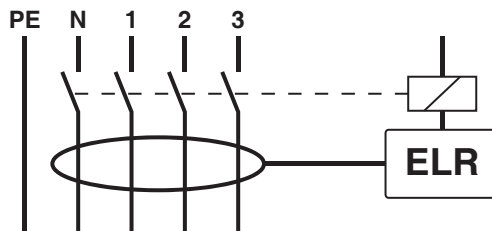
• Operation and Use

ELR relays are designed for use on low voltage AC installations. When the residual current detected by the toroid exceeds a certain threshold, referred to as the residual operating current I_n , the ELR relay trips the associated circuit breaker via a voltage release on the breaker. The control signal issued by the relay may be instantaneous or delayed.

The choice of the right ELR relay model for a given application depends on the type of protection required:

- additional protection against direct contact;
- protection against indirect contact;
- protection against fire hazards;
- source ground fault protection;
- motor protection.

These five types of protection are covered by standards and correspond to different current thresholds and time delays on the products.



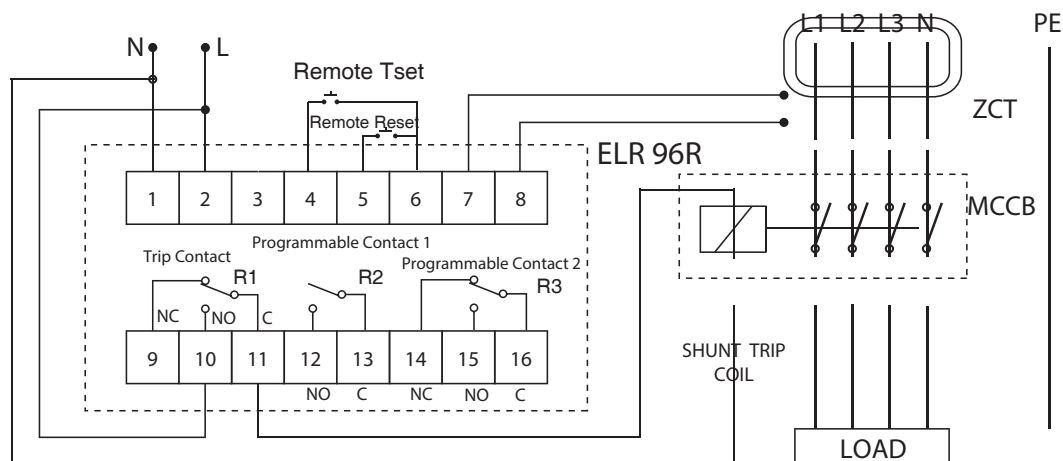
■ Specification

Type		ELR-96R
Auxiliary Supply		
	voltage	AC 110V(94~127V) or AC 220V(198~265V)
	frequency	50 or 60Hz (Adjustable)
	burden	3VA
Setting Range		
	sensitivity ($I_{\Delta n}$)	20mA~30.0A, step 1mA (<999mA), step 0.01A (<9.99A), step 0.1A (<30A)
	time delay	instantaneous / 0.00~10.0s (0.01s step)
Output Contact		
	trip contact (1 NO/NC)	activated when leakage trip, manual test trip or ZCT connection error
	programmable output contact 1 (1 NO)	activated when power on and relay function correctly. (programmable) activated when relay reach trip conditon and trip contact 1 fail to trip. (Stc)
	programmable output contact 2 (1 NO/NC)	activated when power on and relay function correctly. (programmable) activated when relay detected the relay error. (IrF)
	rating	5A(NO) / 3A(NC) / 250VAC AC1
	electrical life	100,000 operations at rated current
	mechanical life	5,000,000 operations
Fault Record		3 latest tripped fault currents
Remote Test / Reset		1 NO dry contact
Indicators		
	pre-fault alarm	PRE.F LED indicator blinking
	leakage pickup	TRIP LED indicator ON
	leakage tripped	TRIP LED indicator blinking
	ZCT connection error	ZCT LED indicator blinking
	real-time leakage current	7-segment red LED display (3-digit)
	fault record	7-segment red LED display (3-digit)
Electrical		
	harmonic filter	built-in
Mechanical		
	mounting	panel mount (91x91mm)
	front panel	standard DIN 96x96mm
	weight	0.5kg (without ZCT)
Enviromental Conditions		operating temperature: -10°C~55°C
		humidity: 5%~95% non-condensing
Standards		IEC 60255 standard

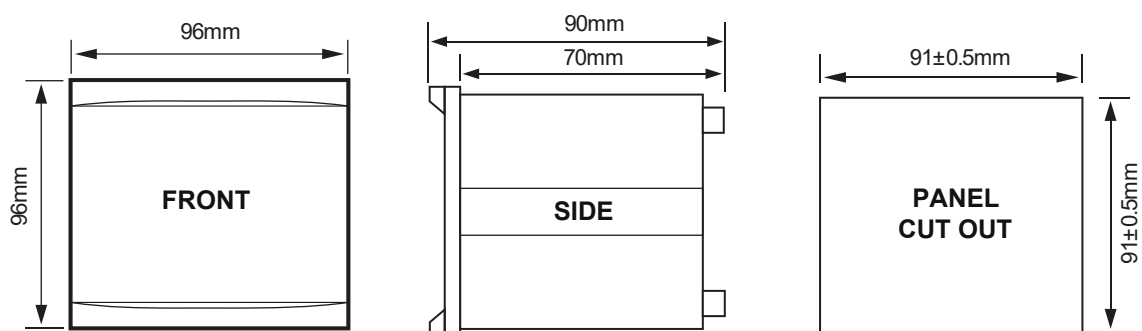
■ Connection Diagrams

ELR 96R

Aux. Power
110V (94~127VAC) or 220V (198~265VAC)



■ Case Dimension

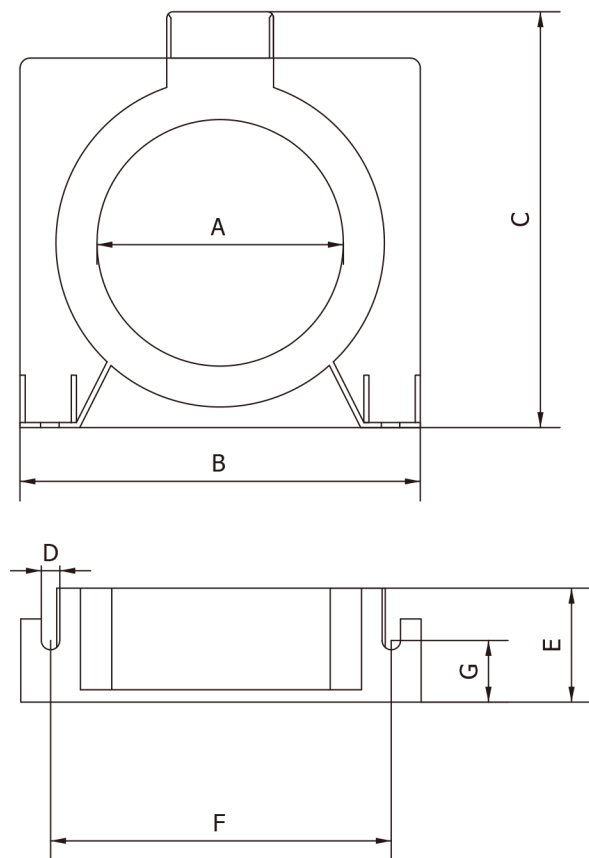


■ Zero Phase Current Transformer

The Zero Phase Current Transformer (ZCT) to be combined with the earth leakage relays consist of a core in magnetic sheet of very good magnetic qualities, which permits to detect fault currents even of very low value.

During installation, inside the zero phase current transformer all phase conductors and eventually the neutral conductor if existing, should pass through. **Attention! The earth conductor (PE) should NOT pass through the ZCT.**

ZCT 40 , 80 , 120 , 210



Dimension (mm)	ZCT 40S	ZCT 80S	ZCT 120S	ZCT 210S
A	40	80	120	210
B	89	130	180	310
C	94	135	195	311
D	6	6	6	6
E	37	37	37	37
F	75	112	159	292
G	27	27	27	18

■ Ordering Information

Model	Description	Weight
ZCT- 40S	40mm inner diameter	0.16KG
ZCT- 80S	80mm inner diameter	0.28KG
ZCT- 120S	120mm inner diameter	0.57KG
ZCT- 210S	210mm inner diameter	1.5KG

普得企業股份有限公司

總 公 司：台北市內湖區行愛路 68 號 6 樓
電 話：(02)8791-8588 傳 真：(02)8791-9588
電 子 郵 件：toyotech@ms37.hinet.net
網 址：www.toyotech.com.tw

台中辦事處：台中市文心路四段 200 號 10 樓之 2
電 話：(04)2296-9388 傳 真：(04)2296-9386
高雄辦事處：高雄市民生一路 56 號 15 樓之 6
電 話：(07)227-2133 傳 真：(07)227-2173