

ELR-1E | ELR-2 | ELR-2M

EARTH LEAKAGE RELAY - FLUSH-MOUNT VERSION DIN 96x96 mm



GENERAL CHARACTERISTICS - ELR-1E

- Earth leakage relay type A
- Green power LED indicator (ON)
- Red relay tripped LED indicator (TRIP)
- Front TEST and RESET buttons
- Configurable automatic or manual resetting
- Flush mount 96x96mm housing with transparent cover
- IEC degree of protection: IP20 terminals, IP40 on front with cover.

ADJUSTMENTS PER ELR-1E

Configurable tripping set-point ($I_{\Delta n}$)	0,025...0,25A
	0,25...2,5A
	2,5...25A
	25...250A (with external multiplier CT1-M)
Configurable tripping delay time (t)	0,02...0,5s
	0,2...5s.

GENERAL CHARACTERISTICS - ELR-2 | ELR-2M

- Earth leakage relay type A
- 2 output relays each with changeover contact, configurable 2 tripping or 1 tripping and 1 alarm
- Configurable fail safe prealarm and operation
- Automatic toroid connection control
- Green power LED indicator (ON)
- Red relay tripped LED indicator (TRIP)
- Red tripping prealarm LED indicator (ALARM)
- Front TEST button
- Manual resetting by front RESET button or remote contact closing
- Automatic resetting by remote contact closing or rear jumper connection
- Flag indicator (TRIP MEMORY) (ELR-2M only)
- Flush mount 96x96mm housing with transparent cover
- IEC degree of protection: IP20 terminals, IP40 on front with cover

ADJUSTMENTS PER ELR-2 | ELR-2M

Configurable tripping set-point ($I_{\Delta n}$)	0,025...0,25A
	0,25...2,5A
	2,5...25A
	25...250A (with external multiplier CT1-M)
Prealarm set-point	70% fisso
Configurable tripping delay time (t)	0,02...0,5s
	0,2...5s.

ORDER CODE	RATED AUXILIARY SUPPLY VOLTAGE	OUTPUTS CONTACTS	WT [kg]
ELR-1E 12	12 VAC/DC	1	0,280
ELR-1E 48	24-48 VAC/DC	1	0,280
ELR-1E 415	110 VAC/DC-240-415 VAC	1	0,280
ELR-2 48	24-48 VAC/DC	2	0,395
ELR-2 415	110 VAC/DC-240-415 VAC	2	0,395
ELR-2M 48	24-48 VAC/DC	2	0,405
ELR-2M 415	110 VAC/DC-240-415 VAC	2	0,405

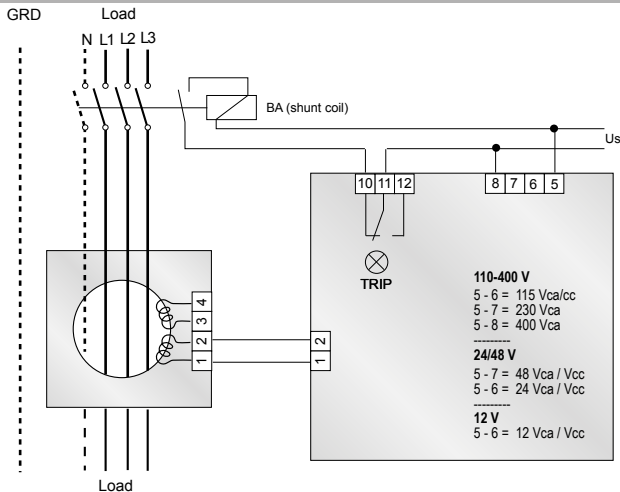
OPTIONS	
T	Tropicalisation
F	Built-in filter for 3rd harmonic (ELR-2, ELR-2M only)

ELR-1 E | ELR-2 | ELR-2M

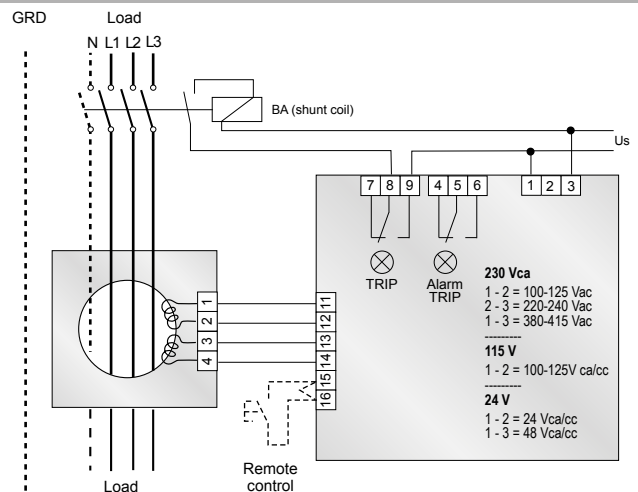
EARTH LEAKAGE RELAY - FLUSH-MOUNT VERSION DIN 96x96 mm

TECHNICAL CHARACTERISTICS	ELR-1E	ELR-2 / ELR-2M
CONTROL CIRCUIT		
Toroidal transformer	External	External
Adjustments tripping set-point (I Δ)	0.025÷25A (25÷250A with external multiplier)	0.025÷25A (25÷250A with external multiplier)
Adjustments tripping time (t)	0.02÷5s	0.02÷5s
AUXILIARY SUPPLY		
Auxiliary voltage (Us)	12 VAC/DC 24-48 VAC/DC 110-240-415 VAC/DC	24-48 VAC/DC 110-240-415 VAC/DC
Rated frequency	50-60 Hz	50-60 Hz
Maximum power consumption	5,5 VA	4,5 VA
OUTPUT RELAYS		
Contact arrangement	1 changeover (trip)	2 changeovers (1 trip, 1 alarm)
Rated contact capacity Ith	5 A (240 VAC)	5 A (240 VAC)
INDICATIONS		
Auxiliary voltage available (ON)	Green LED	Green LED
Relay tripping (TRIP)	Red LED	Red LED
Alarm advance (ALARM)	-	Red LED (ELR-2, ELR-2M only)
Mechanical flag (TRIP)	Flag indicator (ELR-2M only)	Flag indicator (ELR-2M only)
INSULATION		
Insulation test	2.5kV for 1 minute	2.5kV for 1 minute
AMBIENT OPERATING CONDITIONS		
Operating temperature	-10÷60 °C	-10÷60 °C
Storage temperature	-20÷80 °C	-20÷80 °C
Relative humidity	≤90%	≤90%
ENCLOSURE		
Version	96x96mm	96x96mm
Degree of protection	IP20 terminals IP40 with protective cover	IP20 terminals IP40 with protective cover
CERTIFICATIONS AND COMPLIANCE		
Reference standards	IEC/EN 61010, IEC/EN 61000-6-2 IEC/EN 61000-6-3, IEC/TR 60755 CEI EN 60947-2 Annex M	

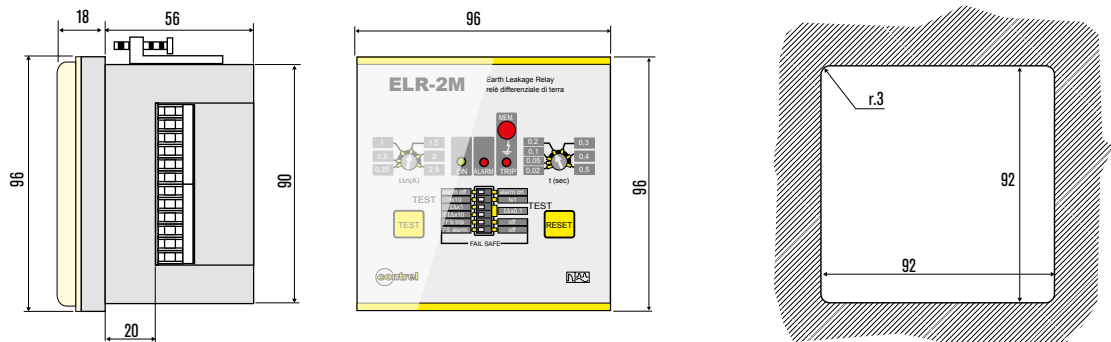
WIRING CONNECTION ELR-1E



WIRING CONNECTION ELR-2 | ELR-2M

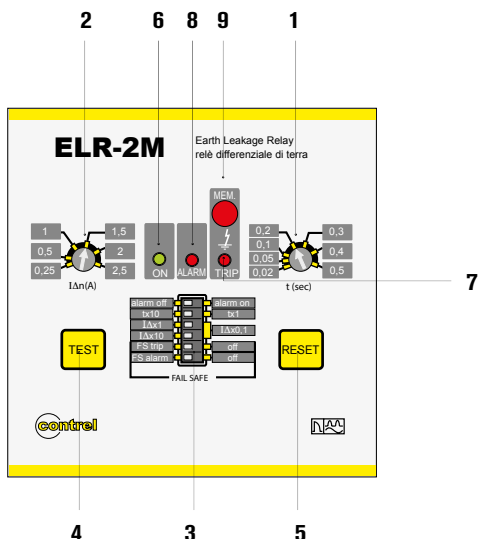
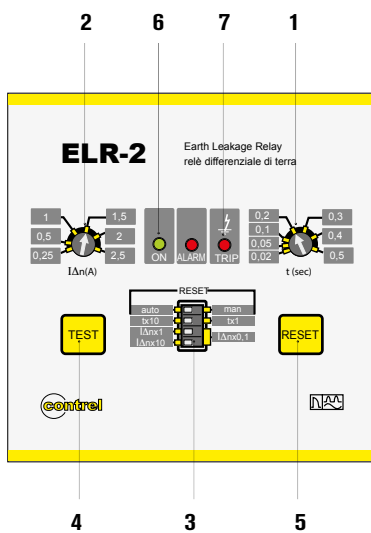
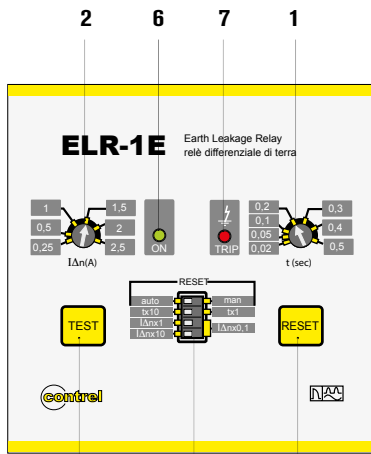


MECHANICAL DIMENSIONS ELR-1E | ELR-2 | ELR-2M



ELR-1 E | ELR-2 | ELR-2M

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LEGENDA

1	Tripping delay time adjustment
2	Fault current to earth adjustment
3	<p>Dip switches settings:</p> <p>3a - Version ELR-1E auto reset (A) - man reset (M) auto reset = automatic reset man reset = manual reset through RESET key on the front. For remote resetting, simply shut off the auxiliary supply for about 1 second</p> <p>Versions ELR-2, ELR-2M alarm off - alarm on alarm on = trip prealarm activated; upon reaching 70% of the set $I\Delta n$ rate, LED ALARM lights up and signal contact changeover takes place. Upon exceeding the set $I\Delta n$ rate LED TRIP will light up and the TRIP contacts will change over</p> <p>3b - tx10 - tx1 constant selection for tripping delay time adjustment. Examples: positioning the dip switch on tx10 and the potentiometer on 0.3 we will have a tripping delay upon exceeding the $I\Delta n$ threshold of $0.3 \times 10 = 3$ seconds; positioning the dip switch on tx1 and the potentiometer on 0.3 we will have a tripping delay upon exceeding the $I\Delta n$ threshold of $0.3 \times 1 = 0.3$ seconds</p> <p>3c - $I\Delta n \times 0,1$ - $I\Delta n \times 1$ - $I\Delta n \times 10$ constant selection for fault current to earth adjustment. The constants in relation to the position of the 2 dip switches are the following:</p> <ul style="list-style-type: none"> • dip switch position $I\Delta n \times 0,1$ and $I\Delta n \times 0,1$ K = 0,1 • dip switch position $I\Delta n \times 1$ and $I\Delta n \times 0,1$ K = 1 • dip switch position $I\Delta n \times 1$ and $I\Delta n \times 10$ K = 10 <p>3d - Versions ELR-2, ELR-2M FS trip - off FS trip = positive safety activated on TRIP relay; in this condition the TRIP relay (terminals 7-8-9) is normally energised; therefore in the event of the lack of auxiliary voltage the output contacts move to the tripping condition (TRIP). Off = positive safety deactivated. TRIP relay normally deenergised.</p> <p>3e - Versions ELR-2, ELR-2M FS alarm- off FS alarm = positive safety activated on ALARM relay, in this condition the prealarm relay ALARM is normally energised; therefore in the event of the lack of auxiliary voltage the output contacts move to the trip condition (TRIP). Off = positive safety deactivated. ALARM relay normally deenergised.</p>
4	TEST key. Causes tripping of the relay.
5	RESET key. To reset the relay after tripping. For remote reset, simply shut off the auxiliary supply for about 1 second.
6	ON LED. Indicates the presence of auxiliary voltage.
7	TRIP LED. Lighting up indicates the cutting in of the TRIP relay due to exceeding the $I\Delta n$ set.
8	ALARM LED (versions ELR-2, ELR-2M). Lighting up depends on the dip switch programming; see the instructions of point 3a)
9	TRIP MEMORY (versions ELR-2M) Mechanical trip relay indicator for exceeding the $I\Delta n$ set. It stores the indication also in the lack of auxiliary voltage. The flag indicator resetting can only be made with the RESET button.