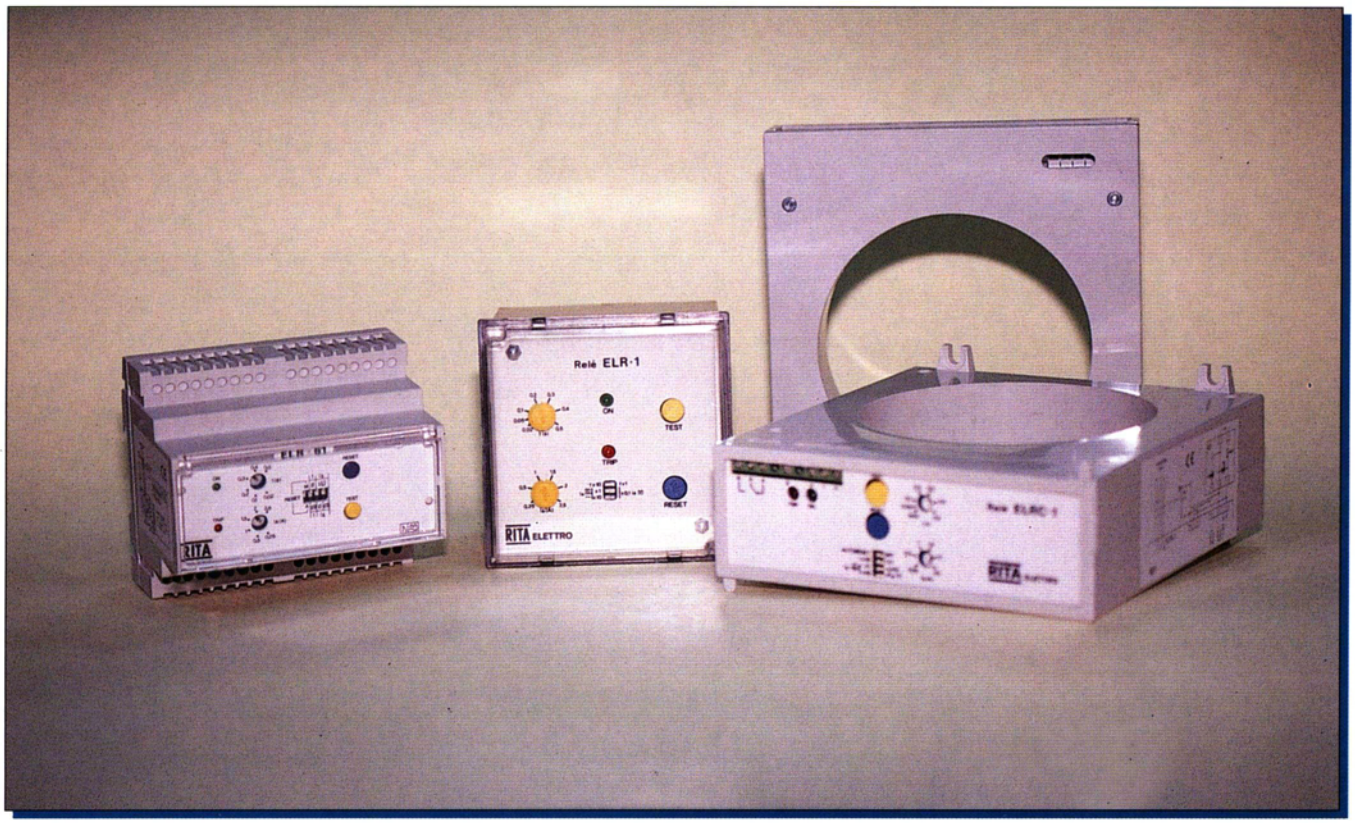
RITA

EARTH LEAKAGE RELAY



earth leakage relays

ELRC-1

The relay ELRC-1 type is particulary suitable for application where very reduced dimensions are necessary (for instance in MOTOR CONTROL CENTER, etc.). The main characteristic is to get in one single unit the toroidal transformer with the control electronic system.
Although of very reduced dimensions, the relay is featured by a very wide either current or delay setting field.
The great extend of adjustment allows to easily select the tripping current value so as to keep values of contact voltage below 50 V in compliance with the CEI regulations.
In addition these adjustments allow to perform a tripping selectivity of either current or delay when more relays are located along the line.
Another important féature is provided the insensitiveness of the device against external disturbance thanks to filters placed at the circuit input, as well as by the insensitiveness against direct currents existing on the line under control in compliance with specifications.
Signaling of existing auxiliary voltage supply (GREEN LED) and of tripped relay (RED LED), can be displayed on the front panel by means of the auxiliary device AD type on which the reset push-button is also located.

ELR-1 - ELR-m1

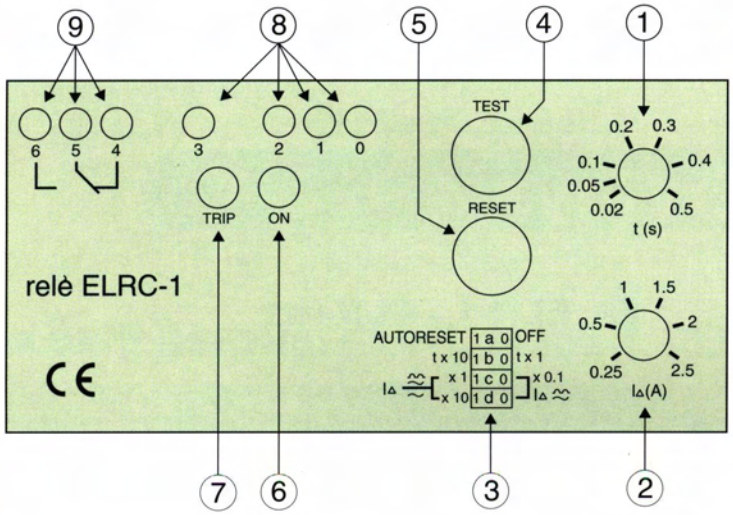
The relay ELR-1 type adds the amplitude of adjustment of the relay ELRC-1 type to the possibility of being combined with any type of toroidals transformer. It has also available auxiliary voltage supplies in much greater number than the previous type. The relay works with relay usually not excited and is excited just in case of tripping because of fault. On request is however possible to present the same in order to make it working with relay normally excited, which de-excites in case of tripping. The earth leakage relay ELR-m1 adds to the electrical characteristics of ELR-1 relay an important signalling through magnetic stop signaller this eliminates the necessity of having an auxiliary supply voltage also in relay tripped condition in order to maintain the optical information of trip for earth fault.

ELR-2S - ELRm-2S

The relay RLR-2S type adds to the characteristics of relay ELR-1 type an alarm signal that operates when the earth current leakage exceed the 70% of the trip current adjustment (IΔN).
The earth leakage relay ELRm-2S adds to the electrical characteristics of ELR-2S relay an important signalling through magnetic stop signaller this eliminates the necessity of having an auxiliary supply voltage also in relay tripped condition in order to maintain the optical information of trip for earth fault.

TYPE	ELRC-1	ELR-1	ELRm-1	ELR-2S	ELRm-2S
Auxiliary supply voltage	AC110/220/380V	AC110/220/380V			
Frequency	50-60HZ				
Max consumption	3VA	4VA			
Trip current adjustement IΔN	0,025÷0,25A K=0,1 0,25÷2.5A K=1 2,5÷25A K=10	0,025÷0,25A K=0,1 0,25÷2.5A K=1 2,5÷25A K=10 25÷250A**			
Alarm current adjustement	—	—		70% IΔN	
Delay time adjustement	0,025÷0.5 sec. K=1 0,2÷5 sec. K=10				
Mechanical signalling	—	—	•	—	•
Output:2 change over contacts	5A 250V				
Operating temperature	-10 + 60°C				
Storage temperature	-20 + 80°C				
Relative humidity	90%				
Insulation test	2,5KV 60 sec.				
Reference standards	CEI 41-1 IEC 255 VDE 0664				
Type of connection	By terminal cable section 2,5 mmq				
Protection class according to DIN 40050	IP20				

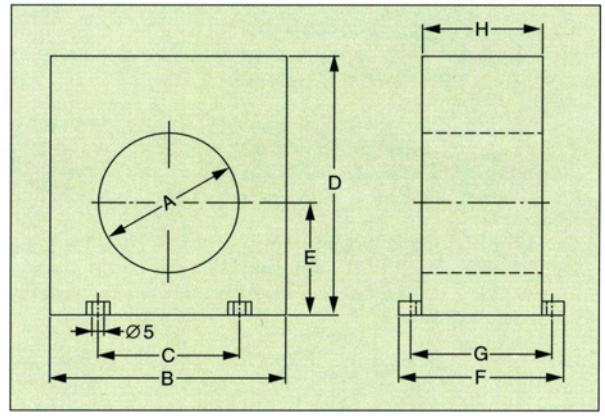
**By means of external multiplier



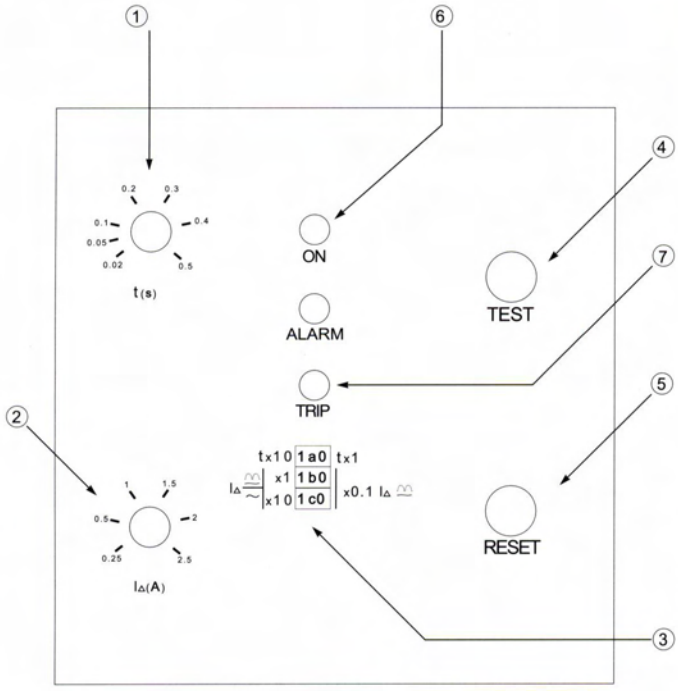
Legend

1) Delay adjustement potentiometer.
2) Tripping current adjustement potentiometer.
3) Sliding contact switch for selection of constants:
   —automatic resetting with switch (a) in pos. 1:
   —selection of constant for delay rating:
   K=1 for switch (b) in pos. 0;
   K=10 for switch (b) in pos. 1:
   —selection of constant for current rating:
   K=0,1 for switch (c) and (d) in pos. 0;
   K=1 for switch (c) in pos. 1 and switch (d) in pos. 0
   K=10 for switch (c) in pos. 1 and switch (d) in pos. 1.
4) Test push-button.
5) Manual reset push-button.
6) Signalling lamp of existing auxiliary voltage supply (green LED).
7) Signalling lamp of tripped relay (red LED).

Type	Dimensions mm							
	A	B	C	D	E	F	G	H
ELRC - 1/35	35	100	60	110	47	70	60	50
ELRC - 1/60	60	100	60	110	47	70	60	50
ELRC - 1/80	80	150	110	160	70	70	60	50
ELRC - 1/110	110	150	110	160	70	70	60	50



ELR-1



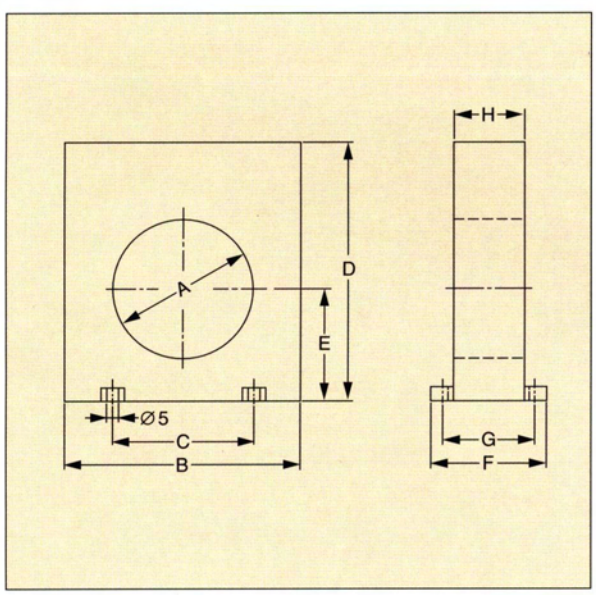
Legend

1) Delay adjustement potentiometer.
2) Tripping current adjustement potentiometer.
3) Sliding contact switch for selection of constants:
   —selection of constant for delay rating:
   K=1 for switch (a) in pos. 0;
   K=10 for switch (a) in pos. 1:
   —selection of constant for current rating:
   K=0,1 for switch (b-c) in pos. 0;
   K=1 for switch (b) in pos. 1 and switch (c) in pos. 0
   K=10 for switch (c=b) in pos. 1
4) Test push-button.
5) Manual reset push-button.
6) Signalling lamp of existing auxiliary voltage supply (green LED).
7) Signalling lamp of tripped relay (red LED).

toroidal current transformers

general

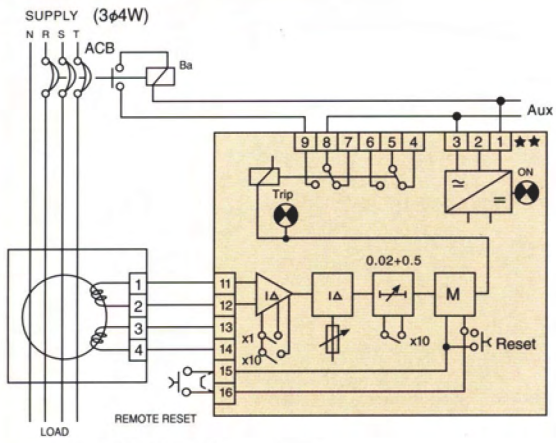
The toroidal current transformers to be combined with the earth leakage relays consist of a core in magnetic sheet of very good magnetic qualities, which permits to detect fault currents even of very low value.
On the core there are two windings, one for detecting the fault signal in line to be delivered to the leakage earth relay and the other one for testing.
Testing is performed on the combination toroid and relay in full manner, that is a signal is from the leakage relay and sent on the test winding.
This signal produces a flux equivalent to that of the fault which, being picked up by the other winding is then transferred to the relay thus causing its tripping.
This allows to check during periodical inspections, the efficiency as well as the integrity of connections between toroid and leakage relay.
During installation, inside the toroid all phase conductors and eventually the neutral conductor if existing, should get through.
Earth conductor instead should not get through.



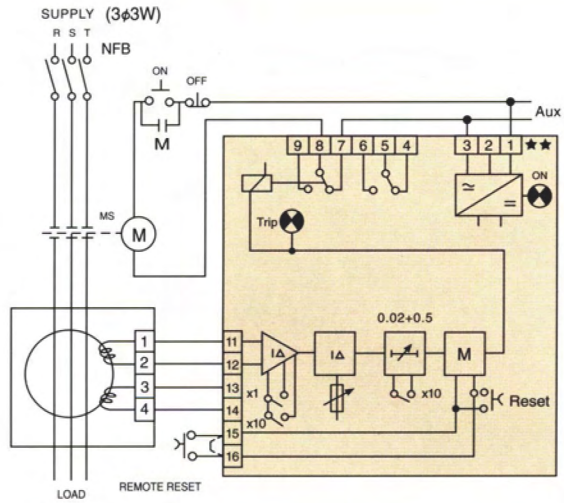
Type	Dimensions mm							
	A	B	C	D	E	F	G	H
CT - 1/S	35	100	60	110	47	50	43	30
CT - 1/35	35	100	60	110	47	50	43	30
CT - 1/60	60	100	60	110	47	50	43	30
CT - 1/80	80	150	110	160	70	50	43	30
CT - 1/110	110	150	110	160	70	50	43	30
CT - 1/210	210	300	240	300	150	135	105	40
CTA - 1/110	110	180	110	150	75	45	35	25
CTA - 1/210	210	300	240	300	150	135	105	40

CONNECTING DIAGRAMS:

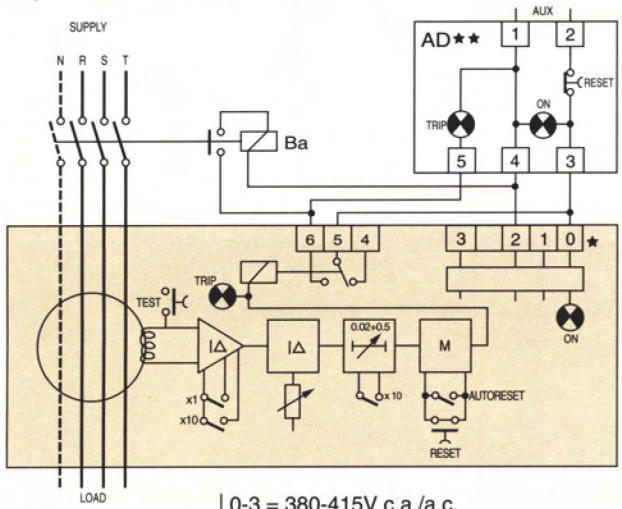
ELR-1



★★ 1-2=110-127 V c.a./a.c.
2-3=220-240 V c.a./a.c.
1-3=380 V c.a./a.c.



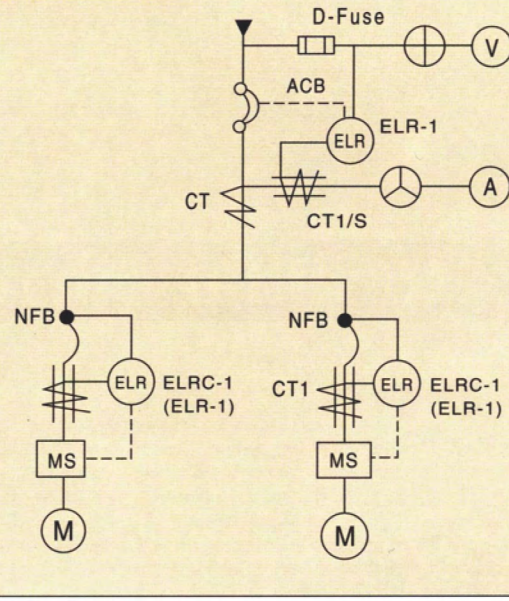
ELRC-1



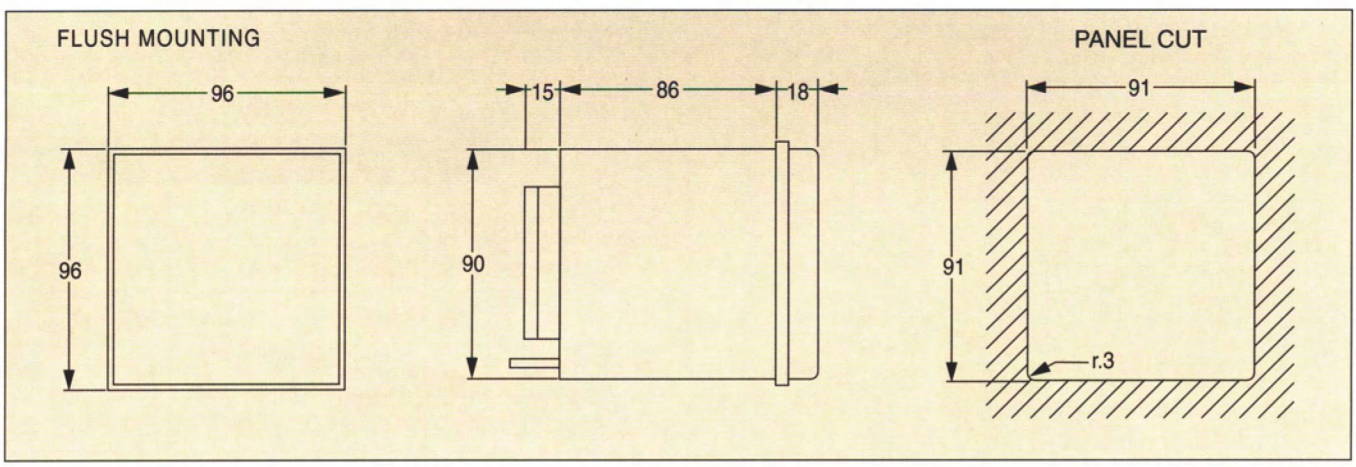
□ 0-3 = 380-415V c.a./a.c.
0-2 = 220 V c.a./a.c.
0-1 = 110 V c.a./c.c.-a.c./d.c.

□ 0-2 = 48 V c.a./c.c.-a.c./d.c.
0-1 = 24 V c.a./c.c.-a.c./d.c.

DESIGN REFERENCE:



DIMENSIONS: ELR-1, ELRm-1, ELR-2S, ELRm-2S



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