

INSTALLATION INSTRUCTION FOR F3 ELR1

INTRODUCTION

It's the company's pleasure to enlist you as one of our esteemed user customer. Thank you for selecting & purchasing 'MINILEC' make EARTH LEAKAGE RELAY F3 ELR1.

The following installation instruction would guide you in installation F3 ELR1 and making best use of it.

F3 ELR1 operates on current sensing principle and is used in electrical circuits & systems where EARTH LEAKAGE protection is required.

F3 ELR1 relay is more accurate, easy to set, compact and easy to install at panel facia .This relay offers (1CO/2CO) relay contact of 5Amps at 240VAC rating.

MOUNTING

Your F3 ELR1 can be panel mounted & is flush fitting panel mounting type.(See fig.2 — for panel mounting & panel cutout dimensions)

CAUTION

Ensure that your F3 ELR1 is-

- Not installed near any heat sources like Burner, Sunlight ,electric arc etc.
- Not subjected to abnormal vibration.
- Not subjected to direct rains, stormy wind & dust.
- Installed as near to the starter as possible.

ELECTRICAL CONNECTION OF F3 ELR1

See fig 3 & 4 for electrical connection details of F3 ELR1.

FUNCTION

The unit is provided with settable EARTH LEAKAGE current trip setting, Trip time delay & with provision of relay energizing on fault condition logic. Select external CT to be installed in the system after considering EARTH LEAKAGE current levels expected in systems circuit. External CT should have secondary current rating of 300mA . Rated current input of 300mA can be provided through CT INPUT (300mA) indicated on back terminal (see fig.3 & 4)

When the power is applied to the unit relay remains in de - energized condition. The relay energized immediately , when input current exceeds Earth leakage set level for selected trip time delay.

The unit operates in manul reset mode hence for resetting it is necessary to press RESET push button provided on front side of unit. F3 ELR1 also be resetted by using external no type remote reset push button.

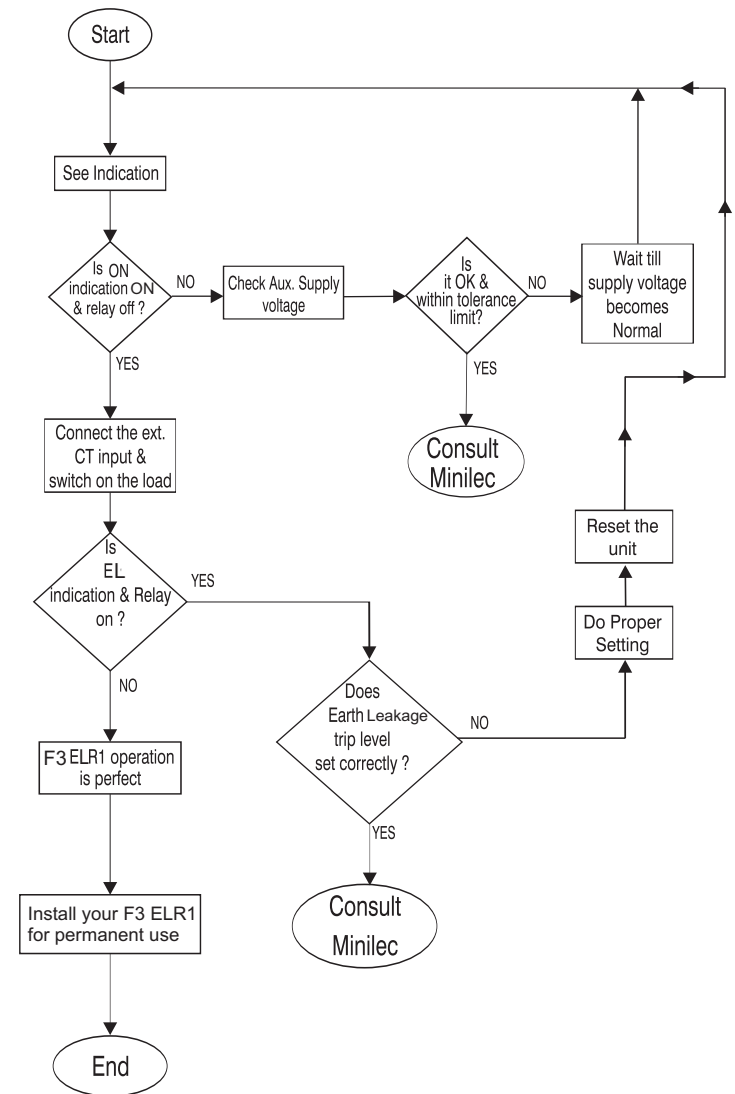
TRIP TIME DELAY SELECTION

On occurrence of earth leakage condition,F3 ELR1 will trip as per the trip sec selected on front plate.

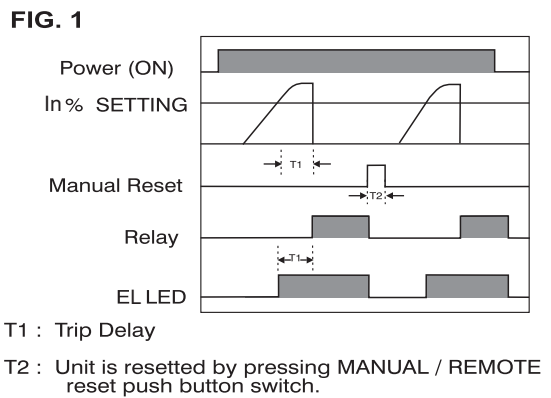
TECHNICAL SPECIFICATION OF F3 ELR1

- 1 . **Auxilliary supply** : 24 / 30VDC \pm 10%
110 - 240VAC/DC \pm 20%
380/415/440VAC \pm 20%
- 2 . **Rated current input** : 300 mA
- 3 . **Frequency** : 50 / 60Hz, \pm 3%
- 4 . **Power consumption** : 3VA max.
- 5 . **Output relay contact** : 2CO / (1CO)
- 6 . **Out put contact rating** : 5A,240VAC (resistive)
- 7 . **Life expectancy** : 0.5x10⁸operations at 100% rating
- 8 . **EL trip setting** : 10% to 100% of rated current input (variable)
- 9 . **Set accuracy** : For current - \pm 5% w.r.t. Current input of 100% (full scale)
For trip delay - \pm 10% w.r.t. Trip time delay (full scale)
10. **Trip time delay** : 0.1 sec. to 1sec .
11. **Reset** : manual / remote reset
12. **Indication** : ON (green) - Power ON
EL (red) - Earth leakage Trip
13. **Current sensor** : neutral CT / CBCT / summation CT with secondary current rating of 300mA (Protection class)
14. **operating conditions** : temperature - -5^oc to 60^oc
humidity - upto 95% R/H.
15. **Enclosure** : F3 ENCLOSURE (ABS)
16. **Dimension (mm)** : overall - 96 X 96 X 80mm
cut out - 92 X 92 mm
17. **Weight (approx)** : 235gms (24 / 30 VDC MODEL),
265gms (110 - 240 VAC/DC MODEL)
425gms (380 /415 /440 VAC MODEL)

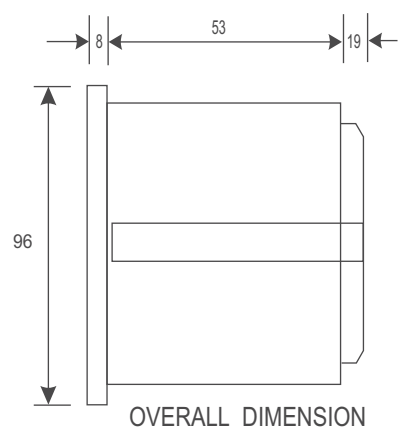
TESTING PROCEDURE



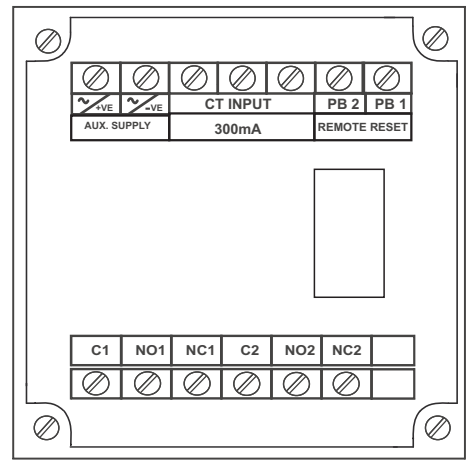
OPERATIONAL DIAGRAM



MOUNTING DIMENSION



TERMINAL DETAILS



- TERMINAL DETAILS (FIG. 3)
- ~/+VE, ~/-VE : AUX SUPPLY
 - C1 - NO1 - NC1 : OUTPUT RELAY CONTACT.
 - C2 - NO2 - NC2 : OUTPUT RELAY CONTACT.(2CO)
 - 300mA : CT INPUT 300mA SECONDARY
 - PB 1, PB 2 : REMOTE RESET
- INDICATION
- ON (GREEN) : POWER ON.
 - EL (RED) : EARTH LEAKAGE TRIP.

INSTALLATION INSTRUCTION MANUAL FOR EARTH LEAKAGE RELAY F3 ELR1



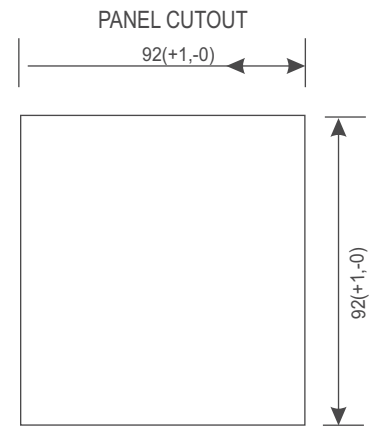
WARRANTY AGAINST ALL MANUFACTURING DEFECTS FOR 18 MONTHS FROM DATE OF SUPPLY OR 12 MONTHS FROM INSTALLATION WHICHEVER IS EARLIER

Manufactured by :
minilec®
www.minilecgroup.com
1073/1-2-3 AT POST : PIRANGOOT,
TAL. : MULSHI, DIST. : PUNE, (INDIA)
PIN : 412 111
VERSION- 01
(9 /10 / 2012)

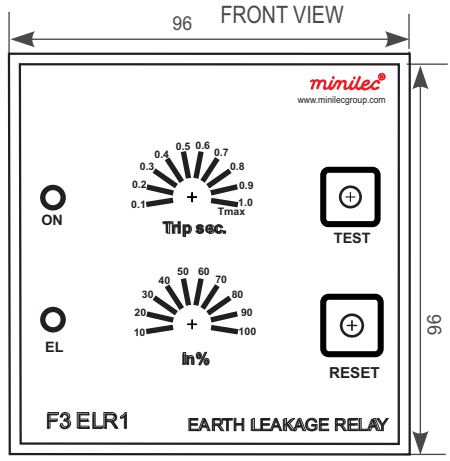
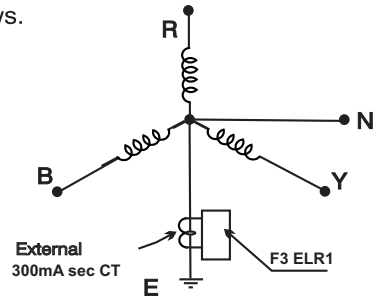
SETTING OF EARTH LEAKAGE RELAY

Minilec make F3 ELR1 is Provided with EARTH LEAKAGE current setting between 10% -100% Hence EARTH LEAKAGE at 10% setting = 10% x 300mA =30 mA Similarly EARTH LEAKAGE at 30% setting = 30% x 300mA =90 mA

These are typical EARTH LEAKAGE current calculations and settings shown as an example. Individual user can make the earth leakage settings as per their requirement.



For Generator and Transformer application, with 3Ph-4W system,connection of CT can be made as follows.



ALL DIMENSIONS ARE IN mm (FIG. 2)

ELECTRICAL CONNECTIONS IN POWER AND CONTROL WIRING (CBCT TYPE)

