

## INSTALLATION INSTRUCTION FOR F3 ELR2

### 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 ELR2.

The following installation instruction would guide you in installation F3 ELR2 and making best use of it. F3 ELR2 operates on current sensing principle and is used in electrical circuits & systems where EARTH LEAKAGE protection is required. F3 ELR2 relay is more accurate, easy to set, compact and easy to install at panel fascia. This relay offers (1CO/2CO) relay contact of 5Amps at 240VAC rating.

### MOUNTING

Your F3 ELR2 can be panel mounted & is flush fitting panel mounting type. (See fig.2 — for panel mounting & panel cutout dimensions)

### CAUTION

Ensure that your F3 ELR2 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 ELR2

See fig 3 & 4 for electrical connection details of F3 ELR2.

### 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 CBCT to be installed in the system after considering EARTH LEAKAGE current levels expected in systems circuit.

Rated current input of 300mA can be provided through CT INPUT (S1 S2) 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 manual reset mode hence for resetting it is necessary to press RESET push button provided on front side of unit. F3 ELR2 also be reset by using external no type remote reset push button.

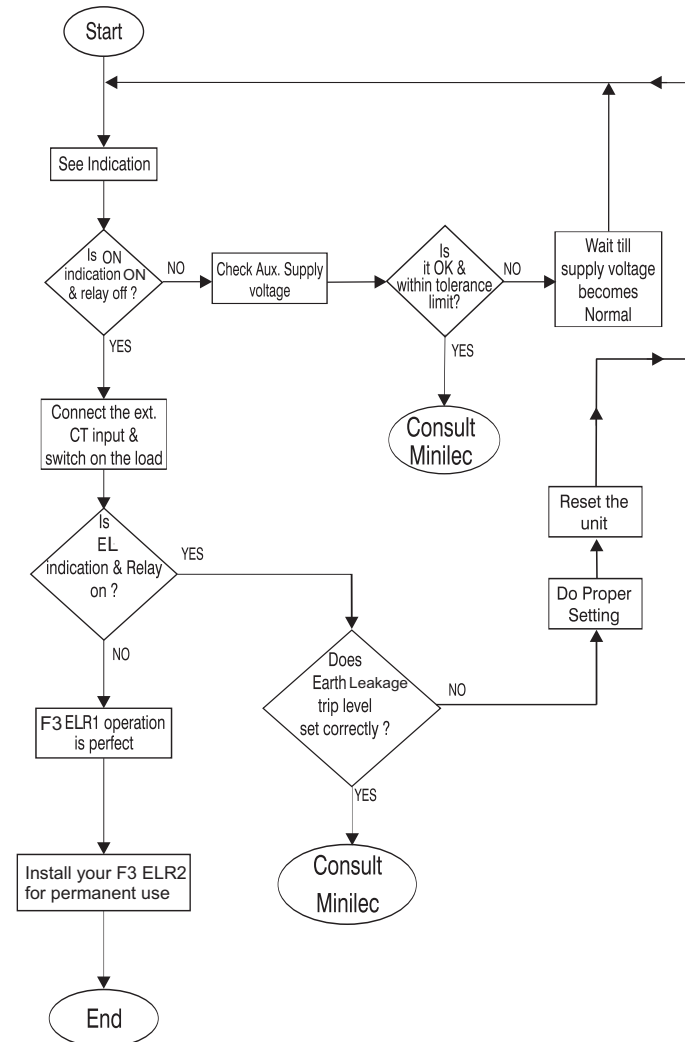
## TRIP TIME DELAY SELECTION

On occurrence of earth leakage condition, F3 ELR2 will trip as per the trip sec selected on front plate.

### TECHNICAL SPECIFICATION OF F3 ELR2

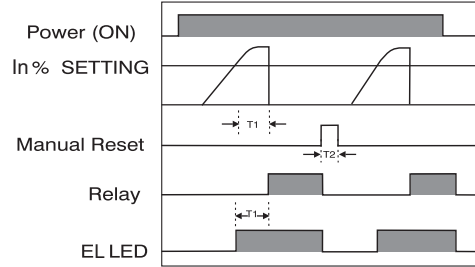
- Auxiliary supply** : 24 / 30VDC  $\pm 10\%$   
110 - 240VAC/DC  $\pm 20\%$
- Rated current input** : 30 to 300 mA via CBCT
- Frequency** : 50 / 60Hz,  $\pm 3\%$
- Power consumption** : 3VA max.
- Output relay contact** : 2CO / (1CO)
- Out put contact rating** : 5A, 240VAC (resistive)
- Life expectancy** :  $0.5 \times 10^8$  operations at 100% rating
- EL trip setting** : 30, 50, 100, 125, 150, 200, 225, 250, 275, 300 mA
- Power ON Delay** : 500mSec  $\pm 100$ mSec
- Trip time delay** : 0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 5, 7, 10 sec
- Set accuracy** : For current :  $-10\%$  w.r.t. Set Value  
For trip delay :  $\pm 10\%$  w.r.t. Trip time delay (SET VALUE) + 100mS
- Reset** : manual / remote reset
- Indication** : ON (green) - Power ON  
EL (red) - Earth leakage Trip
- Current sensor** : CBCT
- operating conditions** : temperature -  $-5$  c to  $60$  c  
humidity - upto  $95\%$  R/H.
- Enclosure** : F3 ENCLOSURE (ABS)
- Dimension (mm)** : overall -  $96 \times 96 \times 80$ mm  
cut out -  $92 \times 92$  mm
- Weight (approx)** : 235gms (24 / 30 VDC MODEL),  
265gms (110 - 240 VAC/DC MODEL)

## TESTING PROCEDURE



## OPERATIONAL DIAGRAM

FIG. 1



T1 : Trip Delay

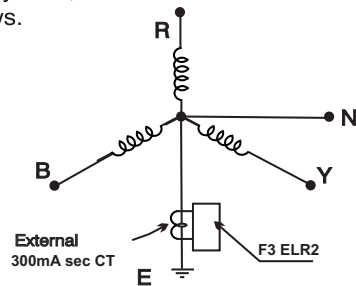
T2 : Unit is reset by pressing MANUAL / REMOTE reset push button switch.

## SETTING OF EARTH LEAKAGE RELAY

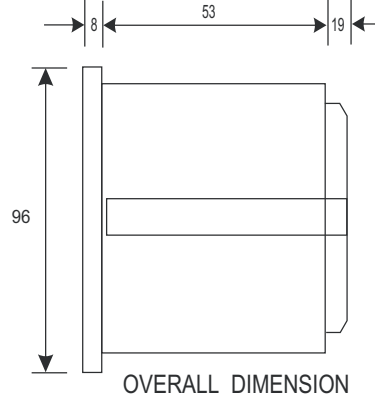
Minilec make F3 ELR2 is provided with **EARTH LEAKAGE** current between 30 & 300mA

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.



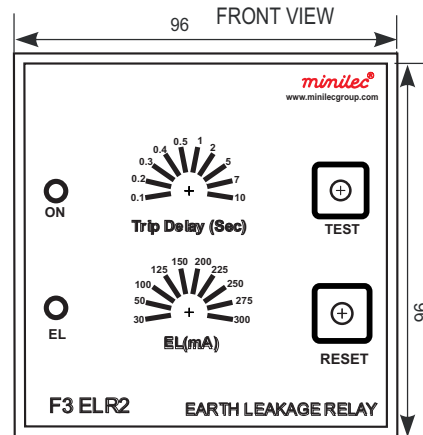
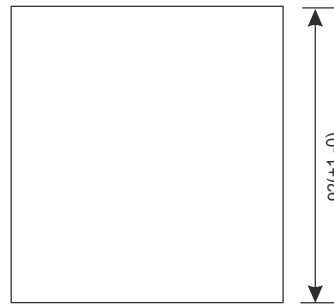
## MOUNTING DIMENSION



OVERALL DIMENSION

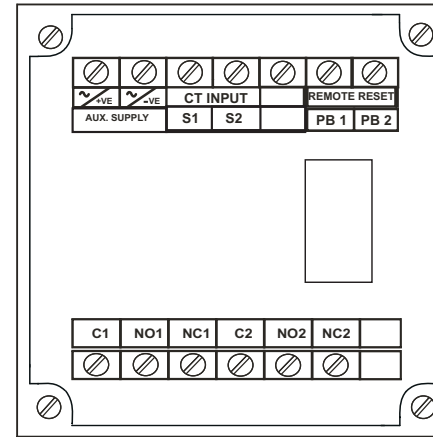
PANEL CUTOUT

92(+1,-0)



ALL DIMENSIONS ARE IN mm (FIG.2)

## TERMINAL DETAILS



### TERMINAL DETAILS (FIG.3)

- ~/+VE, ~/-VE : AUX SUPPLY
- C1 - NO1 - NC1 : OUTPUT RELAY CONTACT.
- C2 - NO2 - NC2 : OUTPUT RELAY CONTACT.(2CO)
- CT INPUT : 30 - 300mA PRIMARY VIA CBCT
- PB 1, PB 2 : REMOTE RESET

### INDICATION

- ON ( GREEN ) : POWER ON.
- EL ( RED ) : EARTH LEAKAGE TRIP.

## INSTALLATION INSTRUCTION MANUAL FOR EARTH LEAKAGE RELAY F3 ELR2



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

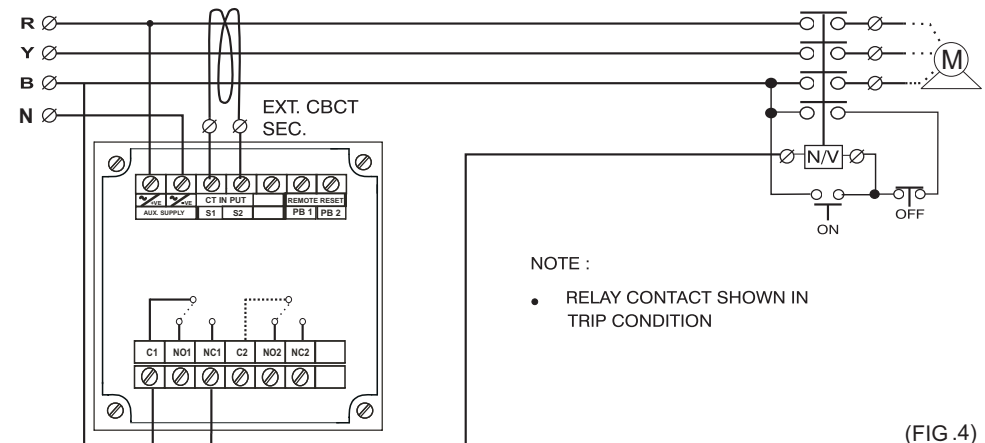
Manufactured by :

**minilec**<sup>®</sup>  
www.minilecgroup.com

1073/1-2-3 AT POST : PIRANGOOT,  
TAL. : MULSHI, DIST. : PUNE, (INDIA)  
PIN : 412 111

VERSION- 02  
(23 /10 / 2019)

## ELECTRICAL CONNECTIONS IN POWER AND CONTROL WIRING ( CBCT TYPE )



NOTE :

- RELAY CONTACT SHOWN IN TRIP CONDITION

(FIG.4)