EFI.07 EARTH FAULT INDICATOR

EARTH-FAULT DETECTION AND SIGNALLING
FOR MEDIUM VOLTAGE CABLES

EARTH FAULT INDICATOR
Mod. EFI.07

PRESS FOR TEST OR RESET

FAULT

Fault time delay
40mS
60mS
80mS
160mS

Trip current
25A
50A
100A
200A

Flashing time
30min.
60min.
2hr.
4hr.

SW 1 — SW 6

C.E.DI.T. S.r.l.
Costruzioni Elettroniche Diversificate Torino
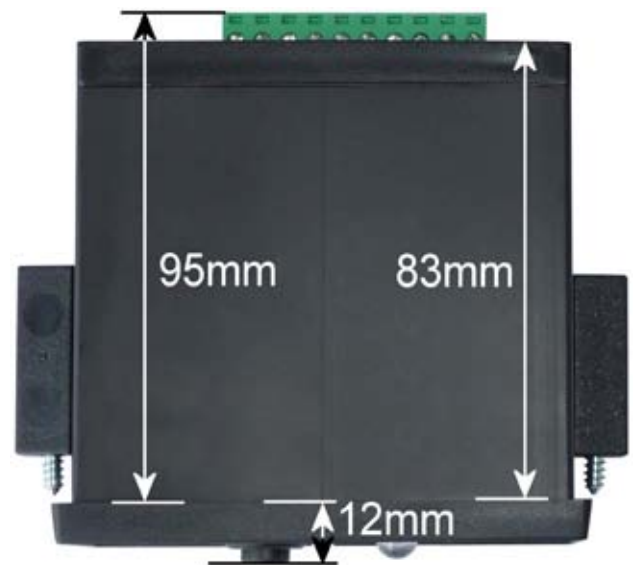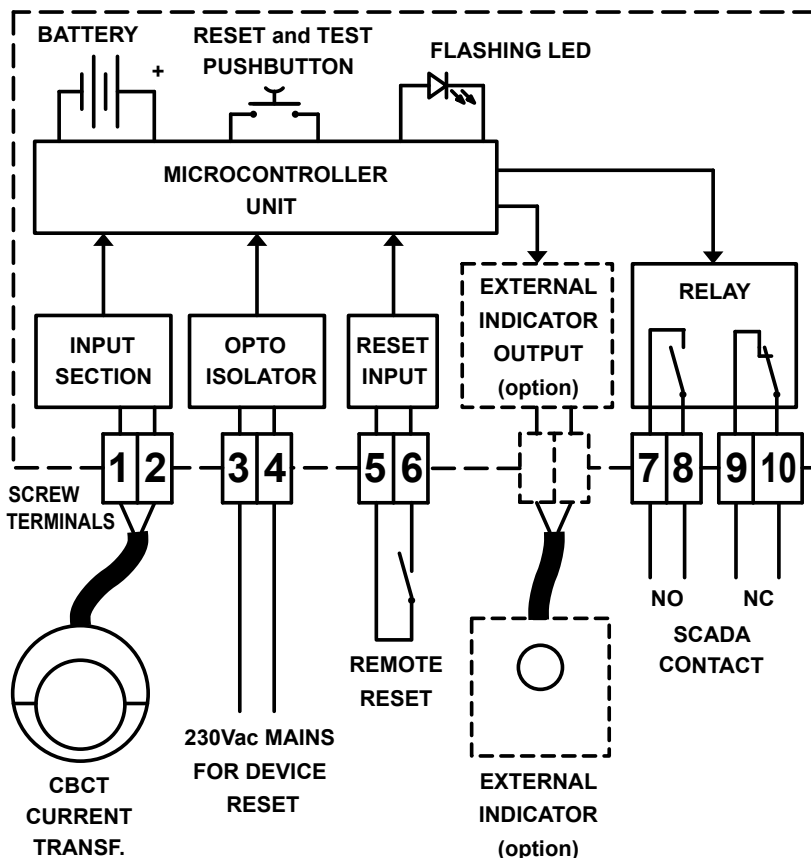ITALY - Tel. +39 011 6801 222   www.ceditnet.it

CT.01

- **ENCLOSURE STANDARD DIN 48 x 96 SUITABLE FOR PANEL MOUNTING.**

- **VISUAL LED LOCAL INDICATION WITH SELF TEST BY PUSHBUTTON.**

- **4 RESET MODES: TIME-DELAY, 230Vac MAINS VOLTAGE, PUSHBUTTON AND REMOTE RESET.**

- **DIP SWITCHES SELECTABLE TRIP CURRENT (4 VALUES) AND DELAY FOR TIME RESET (4 VALUES).**

- **SCADA CONTACT FOR REMOTE SIGNALLING AND CONTROL.**

- **10 YEARS BATTERY OPERATION. OVER 2500 FLASHING HOURS.**

- **EASY-TO-FIT CBCT RESIN SPLIT-TYPE CURRENT TRANSFORMER.**

- **(OPTION) EXTERNAL REMOTE INDICATOR OUTPUT.**

- **(OPTION) GSM/UMTS REMOTE CONTROL AND SCADA SIGNALLING.**

GENERAL DESCRIPTION

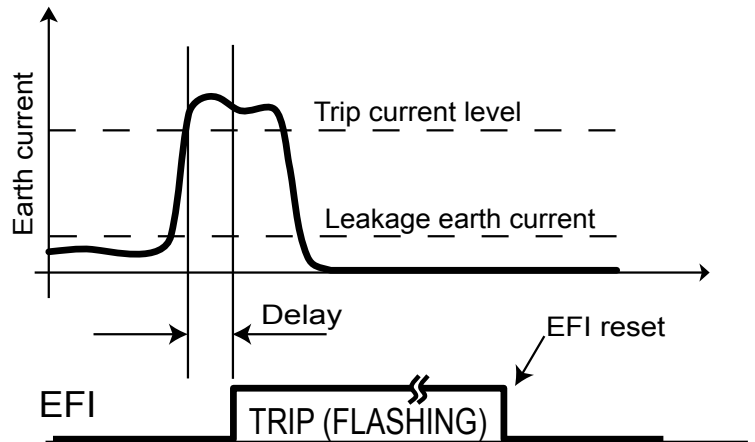**EFI** Earth-Fault Indicator device for earth-fault detection and signalling on medium voltage networks:

• Designed to be installed on MV cables up to 33kV (underground, switchgears, cells, etc.).

• Local and remote earth fault signalling by means of flashing LED and SCADA relay contact.

• Up to four levels of trip current, selectable by front dip switches (current values can be customer defined).

• Four reset modes: time-delay, 230Vac mains voltage, pushbutton reset and remote reset.

• Up to four time-delay values for automatic time reset, selectable by front dip switches (time-delay values can be customer defined).

• Up to four fault delay values for transient cancellation, selectable by front dip switches (delay values can be customer defined).

• Correct operation (test) can be checked pressing the pushbutton on the front.

• Self-powered by the internal lithium battery with 10 years lifetime and over 2500 flashing hours.

• Battery can be easily replaced with lithium 3,6V - ½ AA type (no soldering or tools required).

• Electronic module enclosed in standard DIN 48 x 96 box linked to the external current transformer CBCT.

• Split-type resin current transformer CBCT ring-type, composed by two halves that can be installed without MV cables disconnection and held together by metallic screw tie.

• Option: screw terminal output to drive the external flashing indicator (option).

Enclosure:
Standard DIN 48 x 96 mm
Panel cutout: 45 x 92 mm

C.E.DI.T.
www.ceditnet.it

OPERATION

The device continuously checks the earth current. When the selected trip level is exceeded for more than the selected delay time, the device trips: the LED starts flashing and the SCADA relay gives a pulse signalling, closing the contact for 500ms. If a second fault occurs when the EFI is already tripped, the SCADA contact will close again for 500ms to indicate that a second fault has occurred. The minimum fault duration (delay) time is designed to discriminate real faults from simple line transients.

DEVICE TEST: simply press the pushbutton when the device is not flashing. The EFI will start flashing and the SCADA relay will give a pulse signalling.

DEVICE RESET: After the device has tripped, it can be reset in the following ways:

• Pressing the pushbutton on the front.

• TIME RESET: the EFI will reset automatically when the selected preset time has elapsed.

• REMOTE RESET: closing the contact or remote pushbutton connected to the screw terminals.

• 230Vac MAINS RESET: the EFI will reset when the mains 230Vac is back after the fault restoration. Simply connect this input to mains 230Vac voltage.

Note: in order to use this reset feature, the 230Vac voltage must disappear when the fault occurs, i.e. it must be cut off by the MV circuit breaker that breaks the faulty line, otherwise the EFI will reset immediately after the fault.

OPTIONAL ACCESSORIES
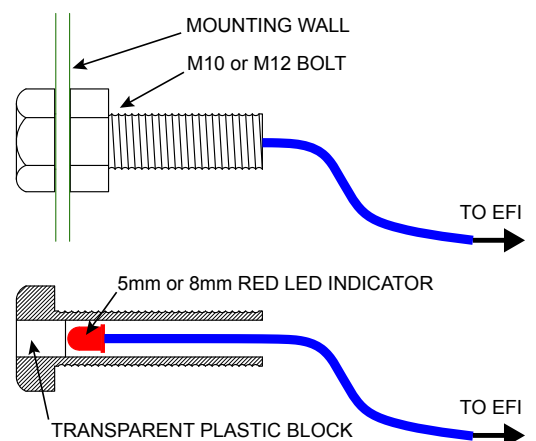
LXI SERIES

LAMP EXTERNAL INDICATORS

LXI.01

LXI.02

BXI BOLT EXTERNAL INDICATOR

MOUNTING WALL

M10 or M12 BOLT

TO EFI

5mm or 8mm RED LED INDICATOR

TRANSPARENT PLASTIC BLOCK

TO EFI

TECHNICAL SPECIFICATIONS

Earth fault trip Current	Dip switches selectable: 25A, 50A, 100A, 200A (±20%). Factory default 25A. (current values can be customer defined)
Min. Fault Duration (Delay)	Dip switches selectable: 40ms, 60ms, 80ms, 160ms (±20ms). Factory default 40ms. (delay time values can be customer defined)
CBCT Current Transformer	Resin, split in 2 halves tied by metallic screw tie. Internal standard diameter 110mm (**CT.01**) - option 150mm (**CT.03**).
Device link with CBCT	5m 2x1sqmm PVC cable. (custom lengths on request)
Visual Fault Signalling	Flashing red LED, ultra bright flash at 1 flash per second. Visibility in excess of 5m.
Remote Fault Signalling (SCADA contact)	1NO + 1NC SCADA relay contact - Signalling time (pulse): 500ms. Contact ratings: 1A max, 230Vac, 30W max. (option permanent contact)
Power Supply	Self-powered by internal lithium battery 3,6V - ½ AA type. 10 years lifetime with over 2500 hours flashing time. Battery can be easily replaced with lithium 3,6V - ½ AA standard type (no soldering or tools required).
Reset modes (All features present)	• Automatic after time delay, dip switches selectable: 30 min, 1hr, 2hrs or 4hrs (± 5min). Factory default: 2hrs. (time values can be customer defined) • When the 230 Vac mains voltage is restored (link cable not provided). • By the pushbutton placed on the cover. • By remote NO reset contact (SCADA) or remote pushbutton.
Device Test	By the pushbutton placed on the cover.
Environment	Enclosure DIN 48 x 96 for panel mouting - Ambient temp. -20 to +55 deg C
OPTION: external indicator output	Screw terminal outputs to drive the external flashing indicator.

We reserve the right to change the design and specification of any item shown herein, therefore the contents shall not form part of any contract or constitute a warranty.

For further information please visit: www.ceditnet.it