SCOPE

CFL PL3

Cable Fault Pre Locator

Cable Fault Testing Re-defined

Minimum outage time to restore supply.

The Product

Cable Fault Locator

Underground cable faults cannot be avoided due to many factors such as road widening, infrastructure improvement, digging carried out for repairs of other underground utilities etc.

These faults generally take long time to detect and hence long time to repair the damaged cables and restore the power supply. Long outages cause heavy production loss to industries, revenue loss to power distribution companies and inconvenience to general public. This calls for quick fault location and restoration of power supply in minimum possible time.

An ordinary fault locating kit comprising of diagnosis set and pin-pointing equipment can take long time to locate fault point. SCOPE offers pre-locator instruments that can give the fault distance to help the operator for reaching the spot quickly and pin-pointing the fault in a short time.

CFL PL3, new generation Cable Fault Pre-Locator from SCOPE is the ultimate solution for locating underground cable faults in minimum time. It uses advanced technology for fault distance measurement which helps even an unskilled operator to locate the fault with accuracy.

CFL PL3 is an advanced fault locating instrument. Three operating modes offered by the instrument enable the operator to locate all types of faults on any cable in minimum possible time. Complex and difficult to locate nature fault are located by CFL PL3 with high accuracy. These features classify the instrument to be a part of fault locating kit of Heavy Industries & Power Distribution Company.

① Display
② Function Select Keys
③ ON / OFF Switch
④ Enter Key
⑤ Referance Cursor Key
⑥ Signal Input
⑦ Trigger for SIM Filter
⑧ RS 232 Port
⑨ Battery Charging Socket
⑩ Cursor Knob

Features

- Measuring rage up to 16 km.
- Large LCD & User friendly operation.
- Adjustable Balance of instrument resistance to suit the cable under test.
- Adjustable Gain for optimal waveform resolution.
- Facility to store & compare the waveforms.
- Memory to store up to 50 waveforms.
- Housed in rugged, IP class moulded case.
- PC connection via RS 232.
- Printer connection via RS 232 (Printer is optional).
- Compact and light weight.
- Large range of Propagation Velocity from 90 to 300m/ µS covers all type of cables including pilot and telecom able with any type of insulation.

measurement

- Low Voltage Pulse echo / Time Domain Reflectometer (TDR)

Time Domain Reflectometer (TDR) works on the same basic principle as radar. The pulse echo unit sends very short pulses periodically into the cable under test. If the cable has constant impedance and is properly terminated, all of the energy will be absorbed. If the pulse reaches an impedance change due to an irregularity in the structure of the cable such as an open end or a fault, part or all of the pulse energy is reflected back to the instrument.

Based on the velocity of propagation and the time difference between instant of transmitting the pulse and receiving back the reflected pulse, the distance of fault point will be calculated.

TDR method is useful for identifying open circuit faults, short circuit faults and low resistance faults.

- Impulse Current Mode (ICM)

It is a current transient analysis method of pre-location of fault. During a breakdown or flashover at the fault, transient waves are generated that oscillate back to the source end and are sensed through a linear current coupler and are stored & displayed on Pre-Locator. ICM mode can be used, in conjunction with CFL SG Series High Voltage Surge Generator (Thumper) to detect high resistance and flashing faults. The above test can be performed automatically leaving No chance for human error.

- Secondary Impulse Method (SIM):

It is an arc stabilizing mode. Faults are stabilized by creating a temporary arc at the fault point through an arc reflection filter and reduce the resistance value of fault as short circuit. It is a voltage transient analysis method of pre-location of fault. Using DC voltage, at a fault point voltage transients are generated that oscillate back to the source end which are sensed through a voltage divider coupler and are stored & displayed on pre-locator.

In conjunction with the CFL SG Series High Voltage Surge Generator (Thumper) and CFL SIMF, Secondary Impulse Filter, SIM method can detect high resistance and flashing faults for power cables.

Specifications

- Transmitting Pulse Amplitude : 30V
- Transmitting Pulse width : 40ns-3.56µs
- Voltage withstand : 400V AC (50Hz)
- Output impedance : 5-80Ω
- Measuring Range : 0-16 km
- Sampling Speed : 100MHz
- Resolution : TDR Mode and SIM Mode
  : <± 1m up to range <4km
  <± 4m for ranges >4 km
  ICM Mode
  : <± 4m up to range <4 km
  <± 16m for ranges >4km
- Propagation Velocity : 90-300m/µs.
  This range covers all the cables including pilot and telecom cable with any type of insulation.
- Ranges : 500m, 1km, 4km, 5km, 8km & 16km. The operator can choose right range to get better resolution at fault point.
- Balance Adjustment : Under TDR mode it is required to balance the instrument resistance to suit the cable under test with this control the instrument resistance can be varied between 5 ohms to 79 ohms.
- Memory : 50 waveforms
- Display : 320x240 pixels
- Charging voltage : Input: 230V AC
  : Output: 8.4V±10% DC
- Operating time of rechargeable batteries: Approx. 5hrs
- Operating Temperature : -10˚C to 50˚C
- Storage Temperatures : -10˚C to 70˚C
- Type of protection IP 54 : Splash proof and dust protected
- Dimensions : 330 x 305 x 152mm
- Weight : 3kg

Standard Accessories

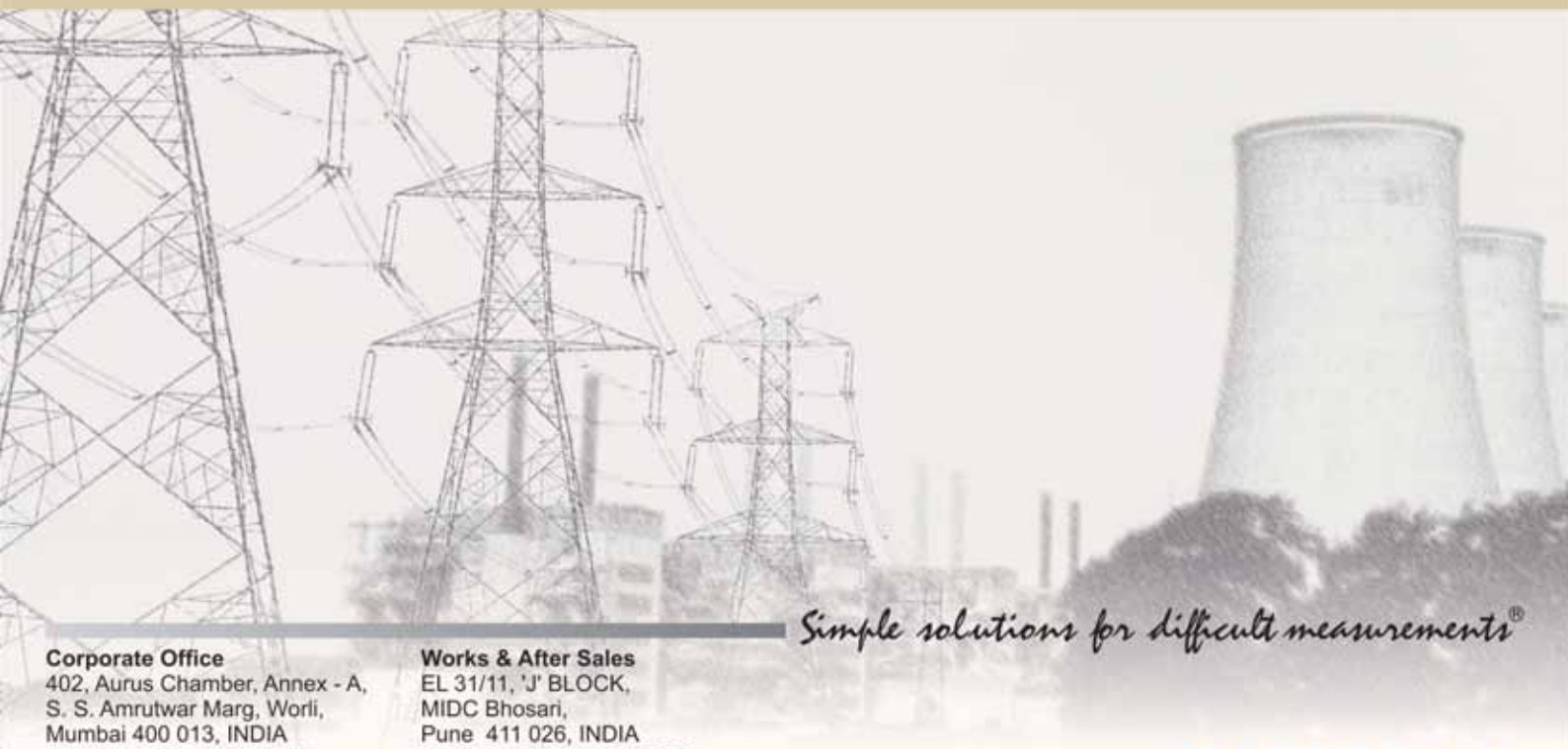
- Linear current coupler: for ICM method.
- Coupler cable
- Testing Cable
- Charger
- Instruction Manual
- Factory test reports
- Carrying bag.

Optional Accessories

- RS 232 Serial Cable
- Mini Printer

Generation, Transmission,
Distribution, Industry ...

... there is **SCOPE** *always !*



Simple solutions for difficult measurements®

Corporate Office
402, Aurus Chamber, Annex - A,
S. S. Amrutwar Marg, Worli,
Mumbai 400 013, INDIA
Phone: +91 22 4344 4244
FAX : +91 22 4344 4242
e-mail: marketing@scopetnm.com

Works & After Sales
EL 31/11, 'J' BLOCK,
MIDC Bhosari,
Pune 411 026, INDIA
Phone: +91 20 6733 3999
FAX : +91 20 6733 3900
e-mail : works@scopetnm.com

SCOPE
T&M Pvt Ltd