

Mobile Cable Fault Location



Megger^R

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Cable Fault Locating made easy with

Cable fault location has often been seen as a dark art, as the causes of faults are different and varied. The challenge presented to the Megger engineering teams when tasked to develop this family of Cable Fault Location equipment was to remove this mystique, and promote a "logical approach".

To remind ourselves there is a growing demand within the world for security of supply, with more and more pressure being applied to the power industry to reduce "customer minutes lost".

To quote "Cables don't carry electricity, they carry money".

The Megger family of single-phase cable fault location equipment has been developed in response to the power industry's requirements; an effective advanced fault locating system offering a number of features and solutions, that can be applied to a variety of cable applications, providing a safe, efficient and easy-to-use solution for quickly identifying, pre-locating and pinpointing various types of cable faults over a wide variety of power cable applications.

These vital steps for successful and rapid fault location:

- Analysis fault conditioning
- Fault pre-location
- Fault pinpoint location
- Restoration

The PFL and CFL family of fault location systems are supplied as either a single portable module on wheels or as a system suitable for mounting in a vehicle or trailer.

In the vehicle mountable version the system comes as two separate modules. The HV module contains all of the high voltage elements. Control of the HV elements and fault finding methods is by a separate control panel which also houses the large screen colour TDR.

Fault location methods available with all PFLs and CFLs from Megger:-

- Pulse echo
 - Arc reflection
 - Arc reflection plus
 - Impulse current (surge current)
 - Voltage decay
 - HV d.c. test (proof testing)
 - HV proof/burn
- HV insulation/proof testing
 - Surge generator
 - Arc reflection filter
 - Transient analysis ICE/Voltage delay couplers
 - Proof/Burn
 - Ground safety interlock (optional)

Standard Scope of Supply

Operator control panel

- HMI selection and control of all HV and CFL methods
- Analogue metering of outputs and leakage current
- Menu driven large screen colour TDR
- Emergency 'Off'

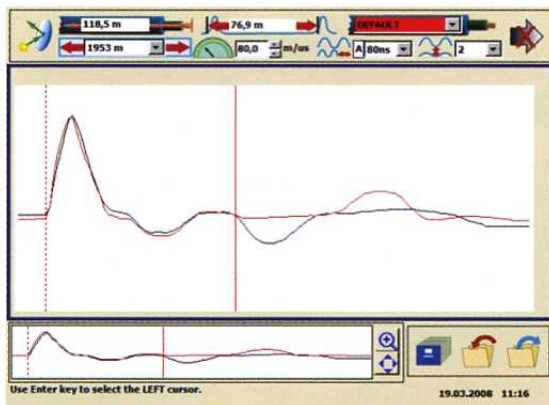
HV Control

PFF - Fault locator module

- HV insulation/proof testing
- Surge generator
- Arc reflection filter
- Transient analysis ICE/Voltage delay couplers
- Proof/Burn
- Ground safety interlock (optional)



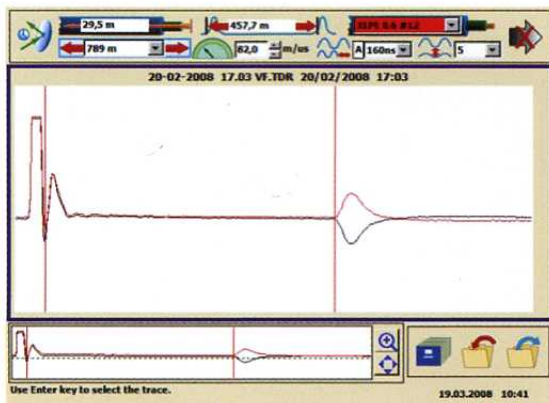
the Megger range



Arc reflection and Arc reflection plus

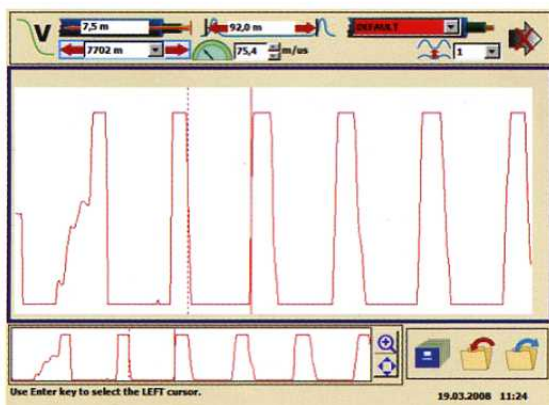
By far the easiest HV method of fault pre-location. During a stabilised period a standard "Pulse echo" trace is taken, into what is effectively a short circuit to earth. This trace is then compared to a non-stabilised trace and the point of divergence of the two traces is the location of your fault.

Arc reflection plus provides 14 traces from the same stabilised flashover. This gives the operator the ability to choose the optimum stabilised trace, enabling even more accurate fault pre-location.



Pulse echo

Used to pre-locate faults using low voltage. Pulse echo techniques are suitable for finding major or significant changes in the cable characteristics. Up to three traces can be displayed at any one time, allowing comparison between phases and conditioned faults.



Voltage decay

Suitable for pre-location of high resistance and "flashing faults". This method uses an optional "voltage coupler" and relies on the voltage transient, generated by the d.c. source oscillating between the point of fault and the HV source.



Power cable fault locator system

PFL20M-PFL40A-CFL40A

The PFL family of CFL modules emphasises portability, featuring all of the basic fault locating tools.



Time domain reflectometer

MTDR1

Large 8 inch colour (VGA) screen TDR. Offering Pulse echo, Direct; Comparison; Arc reflection; Arc reflection plus; Impulse current (surge); Voltage decay.



Pinpointer

MPP1001

MPP1001 is used to pinpoint faults in buried cables by detecting both the electro-magnetic and acoustics pulses.



Insulation resistance and continuity testers

MIT400

Offering CATIV 600 V safety in a convenient easy to hold format. MIT400 series are true diagnostic instruments measuring insulation resistance up to 200 GΩ.



Accutrace, Cable Route Tracer and Portable cable locators

L1050, L1070, L1071

These instruments are used to locate the exact route and depth of metallic cables.

		CFL40A 2000	PFL40A 2000	PFL40A 1500	PFL20A 2000	PFL20A 1500	PFL20M 1500M
Construction							
	Single CFL Module on wheels Separate Control and HV Unit	■	■	■	■	■	■
HV Testing							
Voltage	0 - 40 kV d.c. 0 - 20 kV d.c.	■	■	■	■	■	■
Current	0 - 25 mA 0 - 60 mA	■	■	■	■	■	■
Resolution	1 mA	■	■	■	■	■	■
Trip	Variable customer selectable	■	■	■	■	■	■
Surge Impulse							
Energy	2000 J 1500 J 1536 J	■	■	■	■	■	■
Voltage	0 - 8 kV : 0 - 16 kV : 0 - 34 kV 0 - 8 kV : 0 - 16 kV 0 - 16 kV 0 - 4 kV (optional)	■	■	■	■	■	■
Low voltage Pre-Location							
MTDR 1							
Range	60 m - 30 km Auto Range	■	■	■	■	■	■
Pulse Width	40, 80, 160, 320, 640 ns, 1, 2, 5, 10 μ s Auto	■	■	■	■	■	■
Modes	Pulse Echo Arc Reflection Arc Reflection Plus (multiple impulses) Impulse Current Voltage Decay (optional) Auto-Cursor	■	■	■	■	■	■
Display	21 cm (8") Colour	■	■	■	■	■	■
High Voltage pre-location							
Arc Reflection	0 - 8 kV : 0 - 16 kV : 0 - 34 kV 0 - 8 kV : 0 - 16 kV 0 - 16 kV 0 - 4 kV (optional) Arc Reflection Plus (multiple impulses)	■	■	■	■	■	■
Impulse Current	0 - 8 kV : 0 - 16 kV : 0 - 34 kV 0 - 8 kV : 0 - 16 kV 0 - 16 kV 0 - 4 kV (optional)	■	■	■	■	■	■
Voltage Decay	0 - 40 kV (optional) 0 - 20 kV (optional)	■	■	■	■	■	■
Fault Conditioning							
Proof/Burn	0 - 40 kV 0 - 34 kV 0 - 20 kV 0 - 16 kV 0 - 8 kV 0 - 4 kV	30 mA 30 mA 60 mA 60 mA 60 mA 60 mA	30 mA 30 mA 60 mA 60 mA 60 mA 60 mA	30 mA 30 mA 60 mA 60 mA 60 mA 60 mA			
(optional)					60 mA 60 mA 60 mA 60 mA	60 mA 60 mA 60 mA 60 mA	60 mA

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