The PFL22M1500 Power Cable Fault locator is designed to provide quick, effective, accurate and safe fault location, thereby reducing system outages and minutes lost.

The instrument comes in a rugged yet portable enclosure. Its IP64 rating makes it suitable for use in even environmentally hostile conditions.

All systems offer the facility to undertake cable testing: cable and fault diagnosis, pre-location of cable faults, fault conditioning, and pinpoint fault location using acoustic methods.

**DESCRIPTION**

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**FEATURES AND BENEFITS**

- Innovative MTDR100 mounted in the lid features:
  - Single knob (jog-dial) control
  - Large easy-to-view color (XGA) display
  - Auto ranging
  - Cable library
- Multiple fault locating techniques
  - Pre-location
  - Pulse echo
  - Arc reflection
  - Arc reflection plus
  - Differential arc reflection
  - Impulse current
  - Pinpoint
  - Surge/voltage impulse
  - High-voltage module
  - 2-range
  - Safety interlocks
  - HV on indicator

**APPLICATIONS**

**HV Testing (proof/insulation testing)**

Used to prove the integrity of and identify and confirm fault conditions in cable networks. The variable output voltage can also be used for sheath testing at 5 or 10 kV.

**Fault Pre-location**

After identifying the type of fault, pre-location of the fault position can be determined using the following methods:

- A TDR is used to pre-locate cable faults using pulse echo, arc reflection, impulse current (ICE). The MTDR100 features auto-ranging, auto distance to fault and operator assist functions that guide the operator through the fault locating process.
- In the Arc reflection mode, faults are stabilized by creating a temporary “bridge” to earth. During this condition, a standard pulse echo measurement is taken into what is basically seen as a short circuit fault.
- Arc reflection plus provides the operator the added advantage of being able to view and analyze up to 1024 traces (range dependent) taken during the period of the arc.
- During Differential arc reflection mode unwanted and confusing reflection are removed leaving a clean trace with only the fault position, point being displayed by a positive pulse. This method is especially suited in locating high-resistance faults in complex cable systems.
- Impulse current, or ICE, is a transient analysis method of pre-location utilizing the integrated linear coupler.

**Fault Conditioning**

Fault conditioning is used to stabilize unstable flashing or high resistance faults. The PFL22M1500 incorporates both proof/burn and arc reflection modes.
Proof/Burn
Following a breakdown of the cable under test, a high current is applied that stabilizes the fault condition. This allows easier and faster pre-location and pinpointing of the unstable faults.

Pinpoint fault location
Accurate pinpoint fault location is achieved using the acoustic method whereby the powerful 8/16 kV 1500 Joule surge generator (thumper) and an acoustic receiver (Megger MPP2000) is used.

SPECIFICATIONS
Testing
Output: 0 - 20 kV (negative with regard to earth)
0 – 10 kV, 115 mA constant
0 – 20 kV, 58 mA constant
Resolution: 5 mA
Metering: Analog metering of current and voltage

Low-voltage Pre-location
MTDR100
Range: 10 ranges; 100 m – 55 km (328 ft - 34 miles)
100 m - 220 km (328 ft - 137 miles) - transient methods
Pulse width: 50, 100, 200, 500 ns, 1, 2, 5, 10 µs, and auto
Pulse Amplitude: 25 V into 50 Ω
Sampling Rate: 100 Mhz
Timer Accuracy: 200 ppm
Resolution (Vp=55%): 0.82 m (2.8 ft)
Display: 26.4 mm (10.4 in.), full XGA, 1024 X 768 color display
Cursors: Dual independent control
Gain: 60 dB range in 5 dB Steps
Input: Impedance 50 Ω
Inputs: 1 x TDR/ARC, 1 x current impulse
Ports: 1 x printer / USB memory device
Software: CAS1 (Cable analysis software)

High Voltage Pre-location
Arc Reflection: 0-8 and 0-16 kV, 1500 Joule
Arc Reflection Plus: 0-8 and 0-16 kV, 1500 Joule
1024 – 16 traces dependent on range
Differential Arc Reflection: 0-8 and 0-16 kV, 1500 Joule
Impulse Current: 0-8 and 0-16 kV, 1500 Joule

Fault Conditioning
Proof/burn: 0 - 20 kV 58 mA
0 - 10 kV 115 mA

Pinpoint Fault Location
Surge: 0 - 8 and 0 -16 kV, @ 1500 Joule
Impulse Sequence: Adjustable 5 – 30 seconds
Single Shot

Cables
HV: Detachable 15 m (50 ft) 1-phase flexible shielded cable with HV crock-clips
Input/Supply: Input Cable
Earth: 15 m (50 ft) 8 mm2 flexible earth cable with vice grips

Safety
High visibility “status” bar
Emergency stop
Safety Interlock circuit
External beacon circuit

Supply
Universal AVSM 2-ranges: 108 - 132 V ac and 208 - 265 V ac 47 – 63 Hz
Inverter: 11.5 – 14 V dc (Optional)

Environmental
Operating Temperature: -20 ° to +50 °C (-4 ° to 122 °F)
Storage Temperature: -20 ° to +55 °C (-4 ° to 131 °F)
Elevation: 1600 m (De-rate voltages at higher altitudes)
Humidity: 5 to 95% RH non-condensing

IP Rating
IP64 (with top/back flaps closed)

Weight
131 kgs (290 lbs)

Dimensions
965 mm H x 536 mm W x 503 mm D
(38 in. H x 21 in. W x 20 in. D)

ORDERING INFORMATION

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<th>Item</th>
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<tr>
<td>20 kV dc, 8/16 kV @ 1550 Joule surge</td>
<td>PFL22M1500-EN</td>
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<tr>
<td>As above but including 12 V inverter</td>
<td>PFL22M1500INV-EN</td>
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<td>Included Accessories</td>
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<tr>
<td>High-Voltage shielded output cable 15 m including MC terminations with HV Clamps</td>
<td>1001-123</td>
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<td>Supply/Input cables (1xea USA, UK, SHUKO, International)</td>
<td>17032-4/5/12/13</td>
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<td>Flexible ground cable, 15 m (50 ft)</td>
<td>19265-15</td>
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<td>Interlock Quick Release Pin</td>
<td>90003-606</td>
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<td>Cable bag</td>
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<td>Instruction manual</td>
<td>AVMPFL22</td>
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<tr>
<td>Software</td>
<td>CAS-1</td>
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<td>Optional Accessories</td>
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<td>HV Vice Grips</td>
<td>18944-2</td>
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<td>PFL20M Transit case</td>
<td>2001-289</td>
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<td>12 V Stand alone battery kit</td>
<td>1001-690</td>
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<td>Accoustic/Electromagnetic Receiver</td>
<td>MPP2000</td>
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<td>Stand alone cable reel assembly</td>
<td>CBL100HV</td>
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<td>NB: Refer to factory for full list of cable reel assemblies</td>
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ISO STATEMENT
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