PFL40A1500/2000
Portable Cable Fault Location and HV Test Solution

- Portable, rugged fault locating systems
- HV insulation testing to 40 kV
- Proof/burn up to 40 kV, 120 mA
- 8/16/34 kV, 2000 or 1500 Joules surge output, optional 4 kV
- Multiple fault locating techniques:
  - Arc Reflection
  - Arc Reflection Plus (ARP)
  - Differential Arc Reflection (DART)
  - Impulse current (Current Impulse)
  - Voltage Decay
- Integrated large screen color TDR

DESCRIPTION
The prime objective of any cable fault location system is to provide quick, effective, accurate and safe fault location, thereby reducing system outages and customer minutes lost. The PFL40A portable fault locating systems are designed to meet this criteria.

The standard PFL40A comes as a mobile, compact system that can be further customized to meet specific local requirements. All systems offer the facility to undertake cable testing; cable and fault diagnosis; prelocation of cable faults; fault conditioning and pinpoint fault location using acoustic methods.

APPLICATIONS

HV Testing (proof/insulation testing)
Used to prove the integrity of and to 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 (ARP) gives 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 (DART), unwanted and possibly confusing reflections are removed, leaving a clean trace with only the fault position being displayed as a negative pulse.
- Impulse Current (current impulse or ICE) is a transient analysis method of pre-location which utilizes an integrated linear coupler.
- Voltage Decay utilizes a voltage divider to analyze voltage transients following a breakdown.

Fault Conditioning
Fault conditioning is used to stabilize unstable, flashing or high resistance faults. The Megger Fault Locator system incorporates both Proof/Burn and Arc Reflection modes.

Proof/Burn
Following a breakdown of the cable under test, a high current is applied, stabilizing the fault condition. This allows easier and quicker prelocation and pinpointing of the unstable faults.

Pinpoint fault location
Accurate pinpoint fault location is achieved using the acoustic method, whereby the high energy (1500 or 2000 Joule) surge generator (thumper) capability and an acoustic receiver, Megger MPP, is used.

FEATURES
- Innovative MTDR100 Time Domain Reflectometer
- Single knob (jog-dial) operation
- Large easy-to-view XGA display
- Auto ranging and cable library
- Multiple Fault Locating Techniques
  - LV prelocation; Pulse Echo
  - HV prelocation; Arc Reflection, Arc Reflection Plus, Differential Arc Reflection, Impulse Current, Voltage Decay
**PFL40A SERIES**

**Portable Cable Fault Location and High Voltage Test Solution**

- **High-Voltage module**
- HV insulation testing up to 40 kV
- Operator defined current trips
- Standard 3-range (4-range optional)
- Surge output 1500 or 2000 Joule
- Fault conditioning
- Burn
- Arc Reflection
- Safety Interlocks
- Ground Safety Module (Optional)

**SPECIFICATIONS**

**Testing**
- Output: 0 - 40 kV (negative wrt earth) 25 mA constant
- Resolution: 1 mA
- Trip: Adjustable current trip
- Metering: Analogue and digital

**Low Voltage pre-location**

**MTR100**
- 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
- Sample Rate: 100 Hz
- Resolution: 0.82 m (2.8 ft) (Vp=55%):
- Display: 26.4 mm (10.4 in.), full XGA,
- Cursors: Dual independent control
- Gain: 60 dB range in 5 dB Steps

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cat. No.</th>
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</thead>
<tbody>
<tr>
<td>40kV dc, 3-range 0-8/16/34kV 1500J surge (AVSM 108-132V ac and 208-265V ac 47-63 Hz) NO Safety Module</td>
<td>PFL40A1500-22</td>
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<tr>
<td>40kV dc 3-range 0-8/16/34kV 1500J surge (AVSM 108-132V ac and 208-265V ac 47-63 Hz) inc Safety Module</td>
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<tr>
<td>40kV dc, 4-range 0-4/8/16/34kV 1500J surge (AVSM 108-132V ac and 208-265V ac 47-63 Hz) NO Safety Module</td>
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<tr>
<td>40kV dc 4-range 0-4/8/16/34kV 1500J surge (AVSM 108-132V ac and 208-265V ac 47-63 Hz) inc Safety Module</td>
<td>PFL40A1500-29</td>
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<td>40kV dc, 3-range 0-8/16/34kV 2000J surge (AVSM 108-132V ac and 208-265V ac 47-63 Hz) NO Safety Module</td>
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**Included Accessories**

- Wheel Kit & Handle Assembly

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<td>Earth/Ground Cable 15 m (50 ft)</td>
<td>19265-15</td>
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<tr>
<td>Interlock shorting plug</td>
<td>36847</td>
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<td>Cable Bag</td>
<td>18313</td>
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<tr>
<td>User Guide</td>
<td>AVTMPFL40-XX</td>
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**Optional Accessories**

- Acoustic/electromagnetic Receiver MPP2000
- HV Vice Grips (ea) 18944-2
- Voltage Decay Module 36569
- Battery Trolley (230 V) MPS230
- Battery Trolley (120 V) MPS120
- PFL40A Transit Case 2001-288
- Two Stand-alone cable reels, HV and GND, 100ft (30.5m) each CBL100HV

For information on other manual and motorized cable drum assemblies please contact your local Technical Sales Office

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**ISO STATEMENT**
Registered to ISO 9001:2000 Cert. no. 10006.01

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