**PFL40A1500/2000 Portable Cable Fault Location and High Voltage Test Solution**

- Compact, portable fault locating systems
- HV insulation testing to 40 kV
- Proof/burn up to 34 kV
- 8/16/34 kV, 1500 Joules surge output
  - 2000 Joules surge output optional
  - 4 kV range optional
- Arc Reflection Method
- Arc Reflection plus
- Impulse current (current impulse)
- Voltage decay (optional)
- Integrated large screen colour 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 complete family of compact Megger cable fault locating systems are designed to meet this criterion. These new systems are seen as a valuable extension to our existing range of CFL instruments and capabilities.

The standard system is a mobile compact system that can be further customised by the customer to meet local requirements. All systems offer the facility to undertake cable testing; cable and fault diagnosis; pre-location of cable faults; fault conditioning; pinpoint location using acoustic methods.

**Standard Scope of Supply**

TDR — The Time Domain Reflectometer offers:
- Menu driven operation
- User definable table of standard cable types
- All Pulse echo modes
- Transient analyses methods of pre-location

PFL - Portable Fault Locator provides:
- HV insulation testing
- Fault pre-location using
  - Arc Reflection Method
  - Impulse Current
  - Voltage decay
  - Fault conditioning
  - Proof/Burn
  - Fault pinpoint fault location using acoustic method
  - Ground Safety Interlock (optional)

**HV Testing (proof testing)**

Used to prove the integrity of and to identify and confirm fault conditions in cable networks, using test voltages up to 40 kV and a current of 25 mA. The variable output voltage can also be used to test sheaths requiring 5 or 10 kV test voltages. The operator selectable over-current trip levels provide protection to the system under test in the event of the cable breaking down.

**Fault Pre-location**

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

- TDR pre-locates cable faults using pulse echo, arc reflection, impulse current (ICE) or the optional voltage decay method.
- MTDR features auto-ranging, auto distance to fault and operator assist functions that guide you through the fault locating process.
- In **Arc Reflection** mode, faults are stabilised by creating a temporary “bridge” to earth. During this condition, a standard pulse echo measurement is taken into what is basically a short circuit fault.
- **Arc Reflection plus** lets you view and analyse up to 14 traces, taken during the period of the arc.
- **ICE and Voltage Decay** methods are both transient analysis methods of pre-location which uses either a linear coupler or voltage divider.

**Fault conditioning**

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

- **Proof/Burn** - Following the breakdown of the cable under test, a high current is applied, stabilising the fault condition. This allows quicker pre-location and pinpointing of the unstable faults.
- **Arc Reflection** - Not widely recognised as a fault condition method, the Arc Reflection method stabilises faults by creating a temporary ‘bridge’ to earth, enabling standard pulse echo techniques of prelocation to be used.
Acoustic pinpoint fault location
Accurate pinpoint fault location is achieved using the acoustic method, using the powerful surge generator (thumper), available in either 1500 or 2000 Joules configurations, and an acoustic/electromagnetic receiver (MPP1000).
Additional accuracy is achieved with the Megger MPP1001 or MPP1002 Acoustic and Electromagnetic pinpointer, which shows direction and distance to fault.

**SPECIFICATIONS**

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

**Pre-location low voltage prelocation**
- **MTDR**
  - Range: 60 m – 50 km
  - Pulse width: 40, 80, 160, 320, 640 ns 1, 2, 5, 10 µs, and auto
  - Display: 8 in., full VGA, colour
  - Cursors: Dual independent control
  - Gain: Auto and selectable, x1, 2, 3, 4, 5, 10, 20, 50, 100
  - Input: Impedance 50 Ω
  - Inputs: 1 pulse echo, 1 current impulse/voltage decay
  - Ports: 1 serial, 2 parallel (printer/USB memory device)

**High voltage prelocation**
- **Arc Reflection**: 8/16/34 kV
  - 1500 or 2000 Joule
  - 4 kV at 1500 Joules (optional)
- **ICE**: 8/16/34 kV
- **Voltage decay**: 0 – 40 kV (optional)

**Fault conditioning**
- **Arc Reflection**: 8/16/34 kV (optional 4 kV)
- **Proof/Burn**: 0 – 40 kV
  - 0 – 8 kV, 120 mA
  - 0 – 16 kV, 60 mA
  - 0 – 34 kV, 30 mA
  - 0 – 4 kV, 240 mA (optional)

**Pinpoint fault location**
- **Surge**: 0 – 8/16/34 kV
  - 0 – 4 kV at 1500 Joules (optional)
  - 1500/2000 Joules (dependant on model)
- **Impulse sequence**: Adjustable 2 – 12 seconds single shot

**Cables**
- **HV**: 15 m of 70 kV 1-phase EPR
- **Input/Supply**: 15 m, 8 mm²
- **Earth**: 15 m, 8 mm²
- **Earth monitor**: 15 m

**Environmental**
- **Operating Temperature**: -20 ° to +50 ° C (-4 ° to 122 ° F)
- **Storage Temperature**: -20 ° to +70 ° C (-4 ° to 122 ° F)
- **Elevation**: 1500 m (5000 ft)
  - Derate voltages at higher altitudes
- **Humidity**: 50 to 95% RH non-condensing
- **Supply**: 110 to 260 V (50/60 Hz) (Must be defined at time of ordering)

**IP Rating**
- IP54 (with top/back flaps closed)

**Weight**
- 149 kg

**Dimensions**
- 965 mm H x 536 mm W x 503 mm D

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cat. No.</th>
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<tbody>
<tr>
<td>230 V 40 kV dc, 8/16/34 kV at 1500 J surge</td>
<td>PFL40A1500-22</td>
</tr>
<tr>
<td>As above including safety earth monitor</td>
<td>PFL40A1500-21</td>
</tr>
<tr>
<td>230 V 40 kV dc, 8/16/34 kV at 2000 J surge</td>
<td>PFL40A2000-22</td>
</tr>
<tr>
<td>As above including safety earth monitor</td>
<td>PFL40A2000-21</td>
</tr>
<tr>
<td>230 V 40 kV dc, 4/8/16/34 kV at 1500 J surge</td>
<td>PFL40A1500-30</td>
</tr>
<tr>
<td>As above including safety earth monitor</td>
<td>PFL40A1500-29</td>
</tr>
<tr>
<td>230 V 40 kV dc, 4/8/16/34 kV at 2000 J surge</td>
<td>PFL40A2000-30</td>
</tr>
<tr>
<td>As above including safety earth monitor</td>
<td>PFL40A2000-29</td>
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<td>Other input voltages and languages available</td>
<td>On Request</td>
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**Included Accessories**
- PPF with integral MTDR1
- High-voltage shielded output cable, 15 m

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<tr>
<td>Supply cable, 7.6 m</td>
<td>17032-17</td>
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<tr>
<td>Flexible earth cable, 15 m</td>
<td>19265-15</td>
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<tr>
<td>Wheel kit and handle assembly</td>
<td>36306/36409</td>
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<td>Cable bag</td>
<td>18313</td>
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<tr>
<td>Instruction manual</td>
<td>AVTMPFL40</td>
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**Optional Accessories**
- External battery (230 V system) | MPS230 |
- External battery (110 V system) | MPS110 |
- Voltage decay coupler | 36569 |
- Earthing discharge stick | 22070-62 |
- Manual and motorised cable drum assembly details available on request | See separate datasheet |