



**Megger**

**PFL32M1500**

Portable Cable Fault Location and High Voltage Test System

## PFL32M1500 Portable Cable Fault Location System



- **Portable, rugged fault locating system**
- **HV insulation testing up to 32 kV**
- **Proof/burn up to 32 kV, 65/35 mA**
- **16/32 kV, 1500 Joules surge output**
- **Arc reflection method**
- **Arc reflection plus**
- **Differential arc reflection**
- **Impulse current (ICE)**
- **Integrated 10.4" screen color TDR**

### DESCRIPTION

The PFL32M1500 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, which makes it suitable for use in and outdoor conditions.

The PFL32 provides all typical methods for cable testing: cable and fault diagnosis, pre-location of cable faults, fault conditioning, and pinpoint fault location using magnetic acoustic methods.

### FEATURES AND BENEFITS

- Innovative MTDR100 mounted in the lid features:
  - Single knob (jog-dial) control
  - Large 10.4" color (XGA) display
  - Auto ranging
  - Cable library
- Multiple fault locating techniques
  - Pre-location
  - TDR method
  - Arc reflection
  - Arc reflection plus
  - Differential arc reflection
  - Impulse Current (ICE)
- Pinpoint
  - Surge/voltage impulse
- High-voltage module
  - 2-range / dual capacitors
  - Safety interlocks
  - HV ON indicator

### APPLICATIONS

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

Used to prove the integrity of and identify / 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, the location of the fault can be determined using the following pre-locating of methods:

- A **TDR** is used to pre-locate cable faults using TDR, 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 TDR measurement is taken into what is basically 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 as a positive pulse. This method is especially suited in locating high-resistance faults in complex cable systems.
- **Impulse current, or ICE**, is the analysis of the transients current signal on the HV return to obtain the fault distance.

#### Fault Conditioning

Fault conditioning is used to stabilize unstable flashing or high resistance faults. The PFL32M1500 incorporates both proof/burn and arc reflection modes.

**Proof/Burn**

Following a breakdown of the cable under test, a current is applied to condition the fault. This allows easier and faster pre-location and pinpointing of the unstable faults.

**Pinpoint fault location**

Accurate pinpoint fault location is achieved using the magnetic acoustic method whereby the powerful 16/32 kV 1500 Joule surge generator (thumper) and magnetic acoustic receiver (Digiphone Plus) is used.

**SPECIFICATIONS**

**Testing**

Output: 0 - 32 kV (negative with regard to earth)  
 0 - 32 kV, 35 mA constant  
 0 - 16 kV, 65 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  
 Timbase Accuracy: 200 ppm  
 Resolution: 0.82 m (2.8 ft)@ 82.5m / µsec  
 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: 0-16 and 0-32 kV, 1500 Joule  
 Arc Reflection Plus: 0-16 and 0-32 kV, 1500 Joule  
 1024 – 16 traces dependent on range  
 Differential Arc Reflection: 0-16 and 0-32 kV, 1500 Joule  
 Impulse Current: 0-16 and 0-32 kV, 1500 Joule

**Fault Conditioning**

Proof/burn: 0 - 32 kV 35 mA  
 0 - 16 kV 65 mA

**Pinpoint Fault Location**

Surge: 0 - 16 and 0 -32 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  
 120/230V Input/Supply: Input Cable  
 Safety Ground: 15 m (50 ft) 8 mm<sup>2</sup> flexible ground cable with vice grips

**Safety**

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

**Supply**

Universal AVSM 2-ranges: 108 - 132 V ac and 208 - 265 V ac 47 – 63 Hz

**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**

Item	Cat. No.	Item	Cat. No.
32 kV dc, 16/32 kV @ 1500 Joule surge	PFL32M1500-EN	Cable bag	2001-813
32 kV dc, 16/32 kV @ 1500 Joule surge	PFL32M1500-ES	Instruction manual, English	AVTMPFL32-EN
32 kV dc, 16/32 kV @ 1500 Joule surge	PFL32M1500-FR	Instruction manual, Spanish	AVTMPFL32-ES
<b>Included Accessories</b>		Instruction manual, French	AVTMPFL32-FR
High-Voltage shielded output cable 15 m including MC terminations with HV Clamps	1001-123	Software	CAS-1
Supply/Input cables (1x ea USA, UK, SHUKO, International)	17032-4/5/12/13	<b>Optional Accessories</b>	
Flexible ground cable, 15 m (50 ft)	19265-15	HV Vice Grips	18944-2
Interlock Quick Release Pin	90003-606	PFL32 Transit case	2001-289
		Pinpointer Digiphone Plus	871500500100000
		Stand alone cable reel assembly	CBL100HV

**UK**  
 Archcliffe Road, Dover  
 CT17 9EN England  
 T +44 (0) 1 304 502101  
 F +44 (0) 1 304 207342  
 UKsales@megger.com

**GERMANY**  
 MEGGER/SebaKMT  
 D 96148 Baunach  
 Dr.Herbert-Iann Str.6  
 T +49-9544-680  
 F +49-9544-2273  
 Sales@sebakmt.com

**UNITED STATES**  
 4271 Bronze Way  
 Dallas, TX 75237-1019 USA  
 T 1 800 723 2861 (USA only)  
 T +1 214 333 3201  
 F +1 214 331 7399  
 USsales@megger.com

**OTHER TECHNICAL SALES OFFICES**  
 Valley Forge USA, College Station  
 USA, Täby SWEDEN, Sydney  
 AUSTRALIA, Ontario CANADA,  
 Trappes FRANCE, Oberursel  
 GERMANY, Mumbai INDIA,  
 Johannesburg SOUTH AFRICA, Aargau  
 SWITZERLAND, Chonburi THAILAND,  
 and Dubai UAE

**ISO STATEMENT**  
 Registered to ISO 9001:2000 Cert. no. 10006.01  
**PFL32M1500\_DS\_EN\_V01**  
 www.megger.com  
 Megger is a registered trademark  
 Specifications subject to change  
 without notice