

SG32-1500M

Portable Cable Fault Location System



- **HV insulation testing up to 32 kV**
- **Proof/burn up to 32 kV, 40/20 mA**
- **16/32 kV, 1500 Joules surge output**
- **Arc reflection multi-shot method**
- **Differential arc reflection**
- **Impulse current (ICE)**
- **Impulse current loop on/loop off**
- **Integrated 10.4" screen color TDR**
- **F-OHM safety circuit for proper grounding**
- **Two discharge and grounding contacts for independent discharging of capacitor and test circuit**

DESCRIPTION

The SG32-1500M 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 SG32 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 multi-shot
 - Differential arc reflection
 - Impulse Current (ICE)
 - ICE loop on/loop off
 - 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, a high resistance fault is temporarily shorted out by an electrical arc, which causes the TDR pulse to be negatively reflected and indicates the distance to the fault.
- **The Multi-shot feature** 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 (no more adjustments of trigger delay required).
- 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 transient's current signal on the HV return to obtain the fault distance.
- **Impulse current loop-on/loop off** allows in 2 or 3 conductor circuits to generate transient traces from both sides of the fault showing the fault at the separation point between them.

Portable Cable Fault Location and High Voltage Test System

Fault Conditioning

Fault conditioning is used to stabilize unstable flashing or high resistance faults. The SG32-1500M incorporates burn mode to accomplish this.

Proof/burn: 0 - 32 kV 20 mA
0 - 16 kV 40 mA

Proof/Burn

Following a breakdown of the cable under test, voltage followed by 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) are used.

SPECIFICATIONS

Testing

Output: 0 - 32 kV (negative with regard to earth)
0 - 32 kV, 20 mA constant
0 - 16 kV, 40 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) TDR
100 m - 220 km (328 ft - 137 miles) Transient Recorder
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
Timebase 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
Multi-shot: 0-16 and 0-32 kV, 1500 Joule
Multi-shot feature: 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
Impulse Current
Loop on/loop off: 0-16 and 0-32 kV, 1500 Joule

Pinpoint Fault Location

Surge: 0 - 16 and 0 -32 kV, @ 1500 Joule
Impulse Sequence: Adjustable 5 – 30 seconds
Single Shot

Cables Supplied

HV: Hard wired 15 m (50 ft) 1-phase flexible shielded 50 kV HV cable with user selectable terminations
Safety Ground: 15 m (50 ft) 8 mm² flexible ground cable with hot line clamp
120/230V
Input/Supply: AC power cord

Safety

F-OHM safety feature to check for proper grounding with safety Interlock
Emergency stop
Safety Interlock circuit
Two independent discharge and grounding contacts for independent discharging of test circuit and surge capacitor.

Environmental

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

IP Rating

IP53 with top open

Power Supply

Wide range AC input 85 - 264 VAC
47 - 63 Hz

CE Certification

Certified to CE 61326 (RoHS compliance - no)

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.
SG32 (North American market (NAFTA))	SG32-50T1	Optional Accessories	
SG32 (Outside North America)	SG32-50T4	DigiPhone Plus pinpointer	1003316-S

SALES OFFICE
Megger USA -
Megger USA -
4271 Bronze Way
Dallas, Texas 75237 USA
T. 1-214-333-3201
F. 1-213-331-7399
E. ussales@megger.com

SG32-1500M_DS_EN_V02
www.megger.com
ISO 9001
The word 'Megger' is a registered trademark

