

**CFL510G****Hand-held Time Domain Reflectometer**

- **Dual cursors for pinpointing faults**
- **Auto set-up for instant use**
- **2 ns pulse width virtually eliminates dead zones**
- **Unique trace HOLD feature for comparison between cables**
- **IP54 rating**
- **Designed for use on all metallic cable pairs**

**DESCRIPTION**

The CFL510G is a hand held, compact Time Domain Reflectometer for locating faults on metallic cables. It has a minimum resolution of 0.1 m/0.3 ft and a 5 km/15,000 ft maximum range depending on velocity factor selected and cable type.

Four output impedances (25, 50, 75, and 100  $\Omega$ ) are available and a velocity factor between 0.2 and 0.99 will meet any cable test requirements.

The CFL510G has a simple selection option which, together with a four-way control switch, offers an intuitive operation for the user.

**APPLICATIONS**

This CFL510G is primarily designed for linemen in both the communication and power industries. Specific capabilities include:

**Telephony**

Provides fast and accurate results when uncovering transmission related problems. Designed to be carried on a linesman's belt and used in the first line of defense when diagnosing and locating cable faults.

Specific line activities identified by this unit include:

- Bridge taps and splices
- Presence of water in the cable
- Opens in tip, ring, or sheath

- Shorts between tip, ring, and/or sheath
- Capacitive networks
- Load coils
- Wet splices and high-resistance splices

**CATV/Cellular**

Ideal for testing the physical integrity of cables within a network. The unit is also capable of locating illegal cable taps.

Specific cable conditions identified include:

- Bends or crimps in the cable
- Cuts or shorts in the cable
- Taps and splits
- Water saturation

**Power**

An ideal tool for identifying faults on secondary power cables. This unit identifies:

- Burnouts in aluminum conductors
- Good splices, wet splices, and high-resistance splices
- Shorts between phases

**FEATURES AND BENEFITS**

- An AUTO selection option ensures that the most effective parameters are chosen, depending on the range required, aiding rapid diagnosis of the TDR trace.
- Dual cursors allow complete flexibility, giving the user full control and instant indication of distance between two points.
- A unique, easy one-button press and HOLD feature allows comparison between cable conditions.
- Extra high resolution, a white-light backlight, and grayscale tones gives a vibrant graphical display, useful in identifying key events on the trace.
- Additional features include:
  - Backlit graphics monochrome LCD (256 x 128)
  - Adjustable display contrast
  - Resolution to 0.1 m
  - For use on telecom circuit or 150 V CAT IV power circuit
  - Power blocking filter not required
  - Environmental protection to IP54
  - Auto selected output impedance (between 25, 50, 75 and 100 ohms)
  - 2 ns pulse for near-end fault location
  - AUTO option selecting gain and pulse for each range
  - Display distance in meters or feet
  - Uses five AA (LR6) batteries

**SPECIFICATIONS**

Except where otherwise stated, this specification applies at an ambient temperature of 68° F (20° C).

**General****Ranges**

30 ft, 75 ft, 300 ft, 750 ft, 3000 ft, 7500 ft, and 15,000 ft  
(10 m, 25 m, 100 m, 250 m, 1000 m, 2500 m, and 5000 m)

**Accuracy**

±1% of range ± pixel at 0.67 VF  
(The measurement accuracy is for the indicated cursor position only and is conditional on the velocity factory being correct.)

**Input Protection**

Complies with IEC61010-1 for connection to live systems up to 150 V CAT IV when used with the optional fused test lead set.

**Output Pulse**

5 V peak to peak into open circuit. Pulse widths determined by range and cable.

**Gain**

Set for each range with three user selectable steps (in manual operating mode)

**Velocity Factor**

Variable from 0.2 to 0.99 in steps of 0.01

**TX Null**

Automatic

**Power Down**

Automatic after 5 minutes with no key press

**Backlight**

Stays on for one minute with no key press

**Power**

Five AA (LR6) type batteries, manganese-alkali or nickel metal-hydride cells

**Battery Life**

Up to 14 hours (typical)

**Mechanical**

Designed for indoor or outdoor use, rated to IP54

**Case Dimensions**

9 in. x 4.5 in. x 2 in. (230 mm x 115 mm x 48 mm)

**Instrument Weight**

1.32 lbs (0.6 kg)

**Case Material**

ABS

**Connectors**

Two 4 mm-safety terminals

**Display**

256 x 128 pixels, graphics LCD

**Environmental**

**Operational Temperature:** 5° F to 122° F (-15° C to +50° C)

**Storage Temperature:** -4° F to +158° F (-20° C to +70° C)

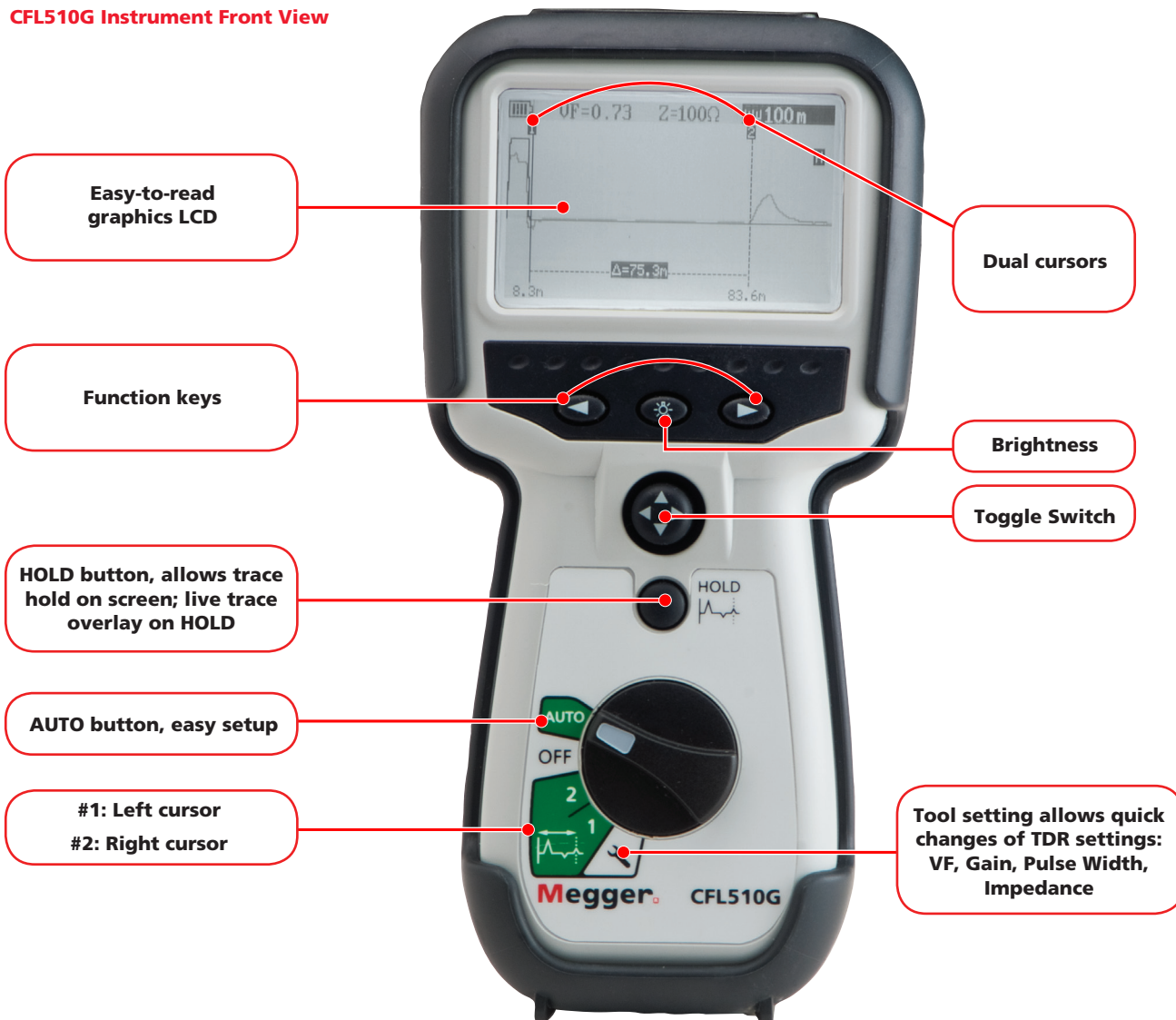
**Safety**

When using the optional fused test lead set, the instrument complies with IEC61010-1 for connections to live systems with less than 300 V between the terminals and up to 150 V CAT IV to earth

**EMC**

Complies with Electromagnetic Compatibility Specifications (light industrial) BS/EN61326-1, with a minimum performance of "B" for all immunity tests

**CFL510G Instrument Front View**



**ORDERING INFORMATION**

Item (Qty)	Cat. No.
CFL510G Hand-held TDR	1001-790
<b>Included Accessories</b>	
Hard carry case	5410-420
Miniature clip test lead set	6231-652
Bed of nails test lead set	6231-653
Socket BNC to 2x4mm 50 Ohm	25965-154
User guide CD	2002-178
<b>Optional Accessories</b>	
Fused test lead set	1002-015