

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**
- **Three-year warranty**

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 Ω) 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 CATIV 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

Refresh Rate

3 per second

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)

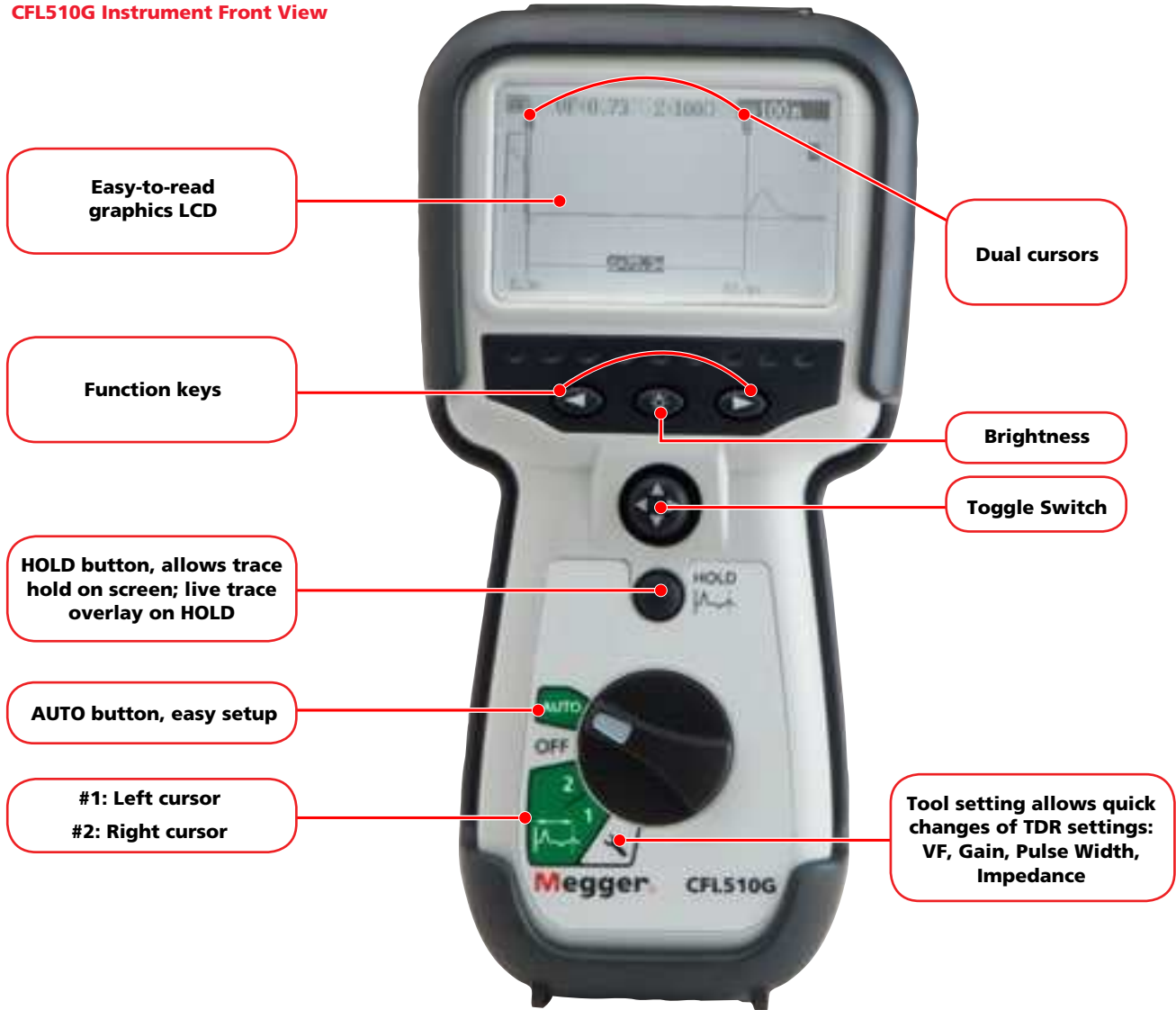
Safety

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



Easy-to-read graphics LCD

Dual cursors

Function keys

Brightness

HOLD button, allows trace hold on screen; live trace overlay on HOLD

Toggle Switch

AUTO button, easy setup

**#1: Left cursor
#2: Right cursor**

Tool setting allows quick changes of TDR settings: VF, Gain, Pulse Width, Impedance

ORDERING INFORMATION

Item (Qty)	Cat. No.
CFL510G Hand-held TDR	1001-790
Included Accessories	
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
Optional Accessories	
Fused test lead set	1002-015

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