

610 LAN CableMapper

USERS MANUAL

PN 936059

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Electromagnetic Interference

The 610 LAN CableMapper complies with German Law Vfg. 243.1991 when it is operated at least 23 meters from the boundary of the user's facility or in a screen room. Refer to Certificate of Compliance. Exempt for USA and Canadian emissions regulations if it does not interfere with licensed communications.

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INTRODUCTION

The 610 LAN CableMapper (hereafter the CableMapper) is an easy to use tester that identifies common wiring faults found in twisted pair cabling used in local area network (LAN) installations.

The CableMapper identifies:

- open and shorted conductor pairs
- crossed, reversed and split pairs
- a specific cable within a cable bundle

NOTE

The CableMapper tests “twisted pair” cables only. It may produce improper readings when testing “non-twisted” pair cables. In LAN installations, never use cables with parallel conductors, such as flat ribbon and “silver satin” cable commonly used for telephone connections.

The CableMapper comes with:

- N6100 Cable Identifier #1
- RJ45-RJ45 straight through patch cable
- RJ45-RJ45 female coupler/connector, Barrel (2)
- C610 Soft Case
- 610 Holster
- Users Manual
- Warranty Registration Card

FEATURES AND INSTRUCTIONS

① ALPHANUMERIC DISPLAY

One alphanumeric digit shows the number of the Cable Identifier and fault codes when a fault is detected.

② PAIRS TEST LEDs

Each cable pair (1/2, 3/6, 4/5, 7/8) has one red and one green LED. The CableMapper will light up the appropriate LED (Green/Pass or Red/Fail) based on the results of the tested pair.

③ TEST BUTTON.

Pressing this button starts a new test.

④ RJ45 CONNECTOR.

This connector is a standard 8-pin modular jack for connecting twisted pair cables to the CableMapper.

⑤ CABLE IDENTIFIER.

A Cable Identifier is used to terminate the far end of the cable being tested. Eight unique cable identifiers, numbered 1 through 8, can be used to identify up to eight different cables.

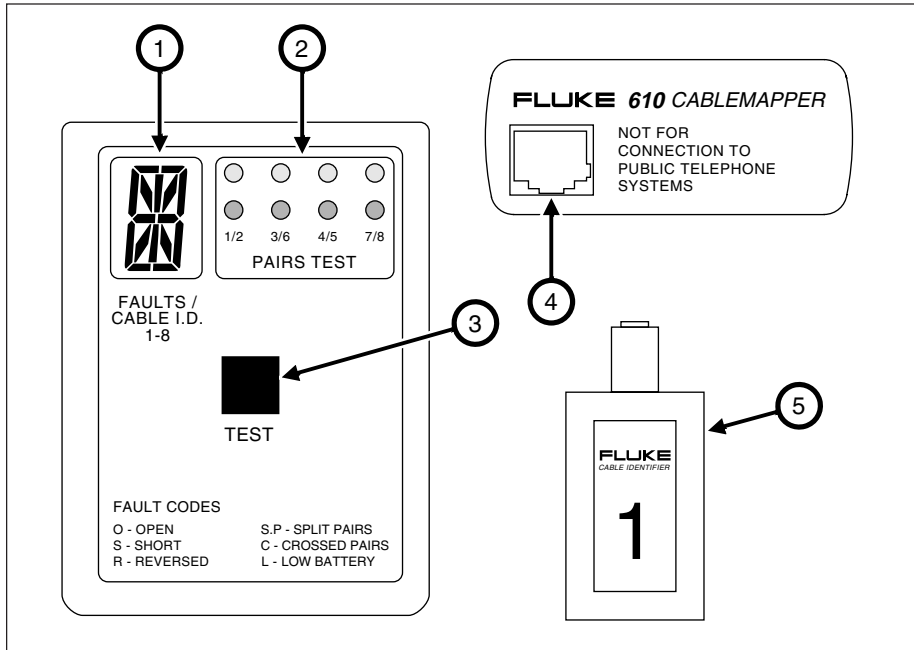


Figure 1. 610 LAN CableMapper

Fault Codes

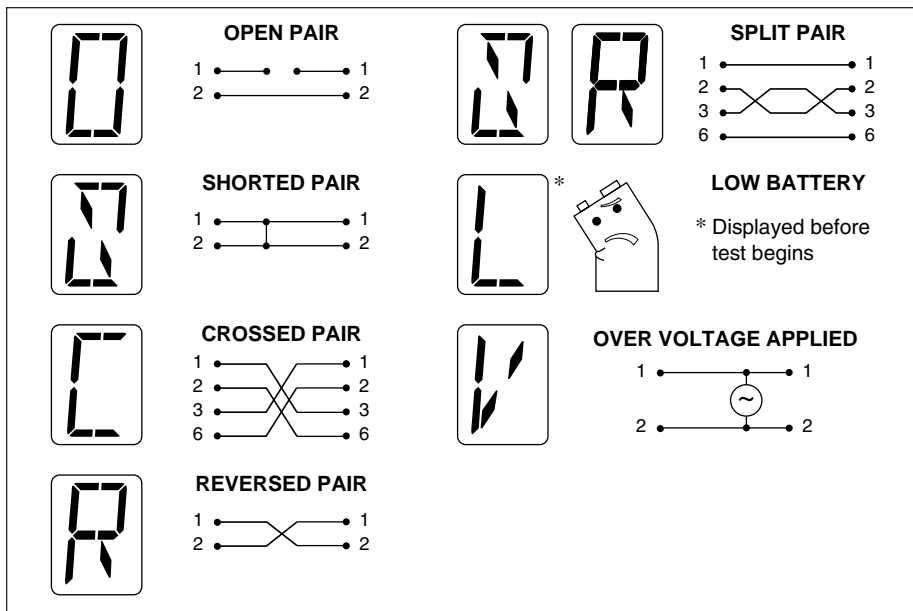


Figure 2. Fault Codes and Their Meanings

Testing Cables for Proper Wiring

To test a cable for proper wiring:

1. Connect one end of the cable to a Cable Identifier. Any one of eight may be used.
2. Connect the other end to the connector on the CableMapper.
3. Press the TEST button and watch the alphanumeric display and the four RED/FAIL and GREEN/PASS LEDs.

The CableMapper tests each cable pair sequentially, 1/2 through 7/8, and displays the test results as each pair is tested. The CableMapper indicates a PASS by illuminating the green LED and displaying the ID number of the Cable Identifier that terminates the cable. When a pair fails, the red LED is illuminated and a fault code (Figure 2) is displayed.

Figure 3 shows a test in progress. Pairs 1/2 and 3/6 passed, while pair 4/5 failed. The alphanumeric display indicates pair 4/5 is open. Pair 7/8 has not been tested yet; it will be tested next.

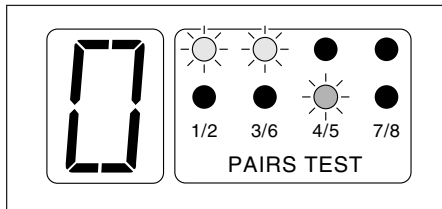


Figure 3. Testing Cable Wiring

The CableMapper automatically turns off approximately 10 seconds after displaying the results of the last test.

Identifying LAN Cables within a Cable Bundle

To identify a specific cable within a bundle of cables at a distribution point (wiring hub), perform the following steps:

1. Connect a Cable Identifier to one end of the cable to be identified; this is usually a wall plate at the user end. Record the Cable Identifier number with the location of the cable. Up to eight different cable identifiers can be used at one time. Figure 4 shows an example of cables running between four rooms and a wiring hub.

2. Connect the CableMapper to the other end of the cable and press the test button.
3. The number on the display will be the number of the Cable Identifier on the other end of the cable; identifying the cable's location.

To reduce wear on the CableMapper connector, leave the patch cable connected to the CableMapper and use the patch cable to connect to the cable under test.

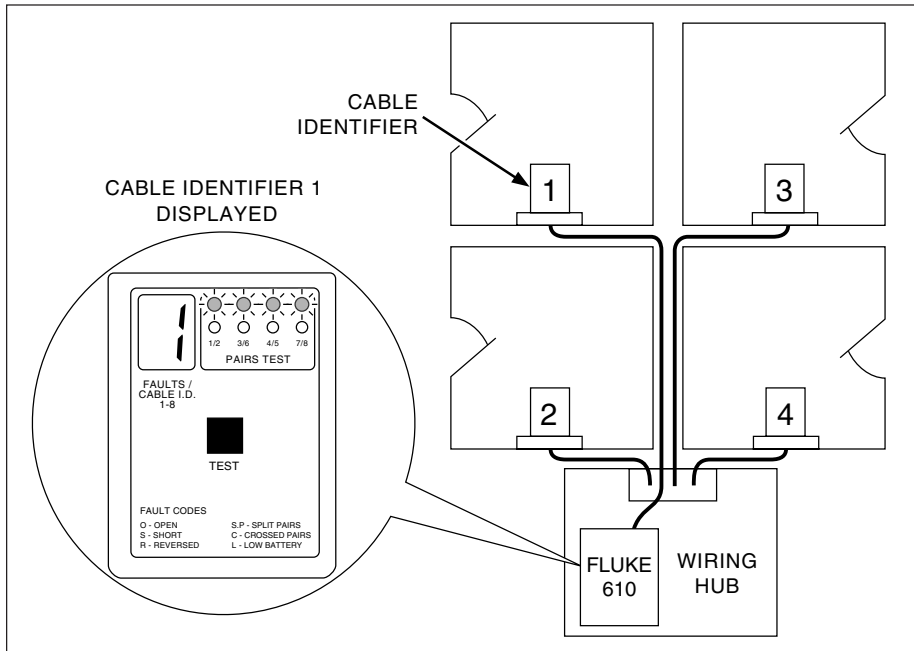


Figure 4. Cable Identification

MAINTENANCE

Cleaning

Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Clean and dry as required.

Battery Replacement

Power to the CableMapper is supplied by a 9V alkaline battery. The CableMapper monitors the battery before each test and displays a warning (“L”) in the display when the voltage is low. A new battery has capacity for approximately 1500 tests.

The battery cover is located on the bottom of the CableMapper (see Figure 5). Slide off the cover to access the battery.

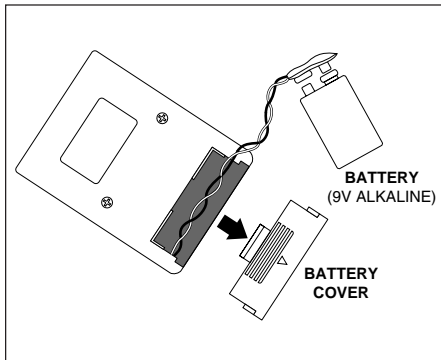


Figure 5. Battery Replacement

NOTE

Always use an alkaline battery. Other batteries do not have sufficient current capacity for use in the CableMapper.

Accessories and Replacement Parts

Model	Description	Part Number
N6100	Cable Identifier #1	935960
N6101	Cable Identifier Kit (2 through 4)	935965
N6102	Cable Identifier Kit (5 through 8)	935973
N6103	Cable Kit, Consists of: 1 ea. Cable, RJ45/RJ45 2 ea. Connector, Barrel	935978
-	Cable Identifier #1	936596
-	Cable Identifier #2	936604
-	Cable Identifier #3	936609
-	Cable Identifier #4	936612
-	Cable Identifier #5	936617
-	Cable Identifier #6	936620
-	Cable Identifier #7	936625
-	Cable Identifier #8	936633
-	Users Manual	936059
-	Holster	936583
-	Soft Carrying Case	936575
-	Case w/Fluke Decal	936588
-	Internal Circuit Assembly	936591
-	Connector, Barrel	927884
-	Cable, RJ45/RJ45	927868

Warranty

The 610 LAN CableMapper is warranted for one year from the date of purchase. Fill out and return the warranty registration card to obtain full warranty coverage.

Service Center Repair

Servicing should be performed only at an authorized Fluke Service Center. Before you return the CableMapper for service, check the CableMapper by performing the following:

1. Replace the battery to make sure the CableMapper has power.
2. Perform tests with different Cable Identifiers connected directly to the CableMapper. If only one test fails, the Cable Identifier used during that test is most likely failing. If all tests fail, the CableMapper is most likely defective.

Send a description of the failure with the CableMapper and Cable Identifiers in the original shipping container. Forward them, postage paid and insured, to the nearest Service Center. (Refer to the list of “Service Centers” at the end of the manual.) Fluke assumes no responsibility for damage in transit.

A 610 LAN CableMapper under warranty will be promptly repaired or replaced (at Fluke’s option) at no charge. See the registration card for warranty terms. If the warranty has lapsed, the CableMapper will be repaired and returned for a fixed fee. Contact the nearest Service Center for information and prices.

SPECIFICATIONS

Display/LEDs:

Single digit 16-segment display.

Four FAIL (red) LEDs.

Four PASS (green) LEDs.

Connector:

RJ45.

Cable pairs tested:

1/2, 3/6, 4/5, and 7/8.

Maximum cable length:

400 ft. (122m).

Faults detected:

Opens, Shorts, Reversed pairs, Crossed pairs, Split pairs (Split pairs are reported if the cross talk exceeds 21 dB \pm 3 dB at 10 MHz between any two pairs).

Impedance anomalies:

Erroneous readings can result from characteristic impedance anomalies (e.g., wrong remote indication).

Input Protection:

Withstands continuous 56V dc applied through 400 ohms. Withstands 175V peak, 20-60 Hz through 100 ohms superimposed on 56V dc for 100 ms.

An overvoltage condition is reported by a "V" on the display.

Safety:

Meets IEC 1010-1, Category I, Pollution degree 2.

Protection Class III per IEC 1010-1, Annex H.

Power:**Main Unit:**

One 9V alkaline
(ANSI/NEDA-1604A, IEC-6LR61)
A new battery has capacity for approx.
1500 tests.

Cable Identifier:

No battery power needed.

Size:**Main Unit:**

3.5 cm x 7.2 cm x 9.4 cm
(1.3" x 2.8" x 3.7")

Cable Identifier:

1.3 cm x 2.8 cm x 6.1 cm
(0.5" x 1.1" x 2.4")

Weight:**Main Unit:**

180 grams (6.3 oz)

Cable Identifier:

15 grams (0.5 oz)

Environmental Conditions:**Storage:**

-20°C to +60°C

Operating:

0°C to +50°C

Humidity:

95% up to 30°C

75% up to 40°C

45% up to 50°C