



**INSTRUCTION MANUAL**

**MTC25**

**DATA CABLE TESTER**



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## **1. INTRODUCTION**

The MTC25 Data Cable Tester maps out connections, verifies wiring, and displays faults on RJ45 terminated cables. A built-in tone generator can be used for tracing and locating cables in wiring closets and patch panels. With proper use, this tester will provide many years of reliable service.

## **2. WARNINGS**

- Do not connect the tester to a live circuit. Exposure to voltage can damage the tester.
- Do not modify or try to repair the tester. No serviceable parts are inside.
- Do not use the tester in a wet or damp environment or during electrical storms.
- Do not use the tester near explosive gases, dust or vapor.
- Visually inspect an RJ plug before inserting it into the tester. Poorly terminated plugs may damage the jacks on the tester.
- Do not plug a 6 position connector (RJ11/RJ12) into the tester. Damage to the test jack may occur.
- Replace the batteries immediately when the low battery warning appears. Test results may not be accurate when the low battery warning is on.

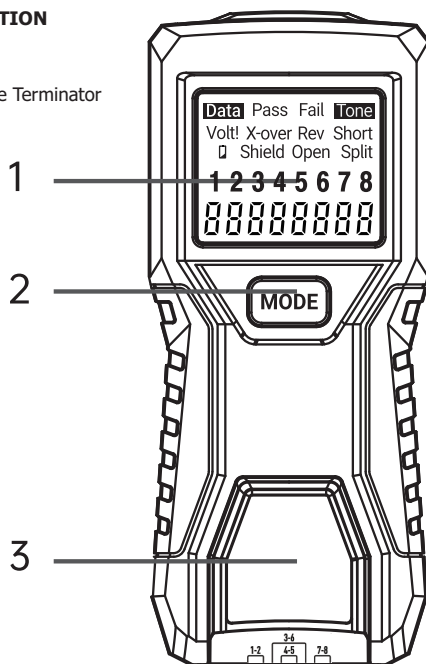
## **3. MAINTENANCE**

This tester is designed to provide years of dependable service, if the following care instructions are adhered to:

1. **KEEP THE TESTER DRY.** If it gets wet, wipe it off.
2. **USE AND STORE THE TESTER IN NORMAL TEMPERATURES.**  
Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
3. **HANDLE THE TESTER WITH CARE.** Dropping it can damage the electronic parts or the case.
4. **KEEP THE TESTER CLEAN.** Wipe the case occasionally with a damp cloth. DO NOT use chemicals, cleaning solvents, or detergents.
5. **USE NEW BATTERIES OF THE RECOMMENDED SIZE AND TYPE.**  
Remove old or weak batteries so they do not leak and damage the unit.
6. **IF THE TESTER IS TO BE STORED FOR A LONG PERIOD OF TIME,** the batteries should be removed to prevent damage to the unit.

#### 4. TESTER DESCRIPTION

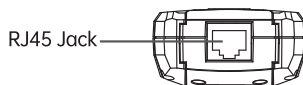
- 1 - LCD Display
- 2 - MODE button
- 3 - Detachable Remote Terminator



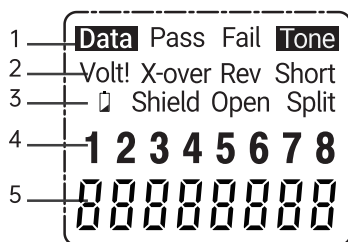
Cable Tester Top View




Cable Tester Bottom View



## 5. SYMBOLS USED ON LCD DISPLAY

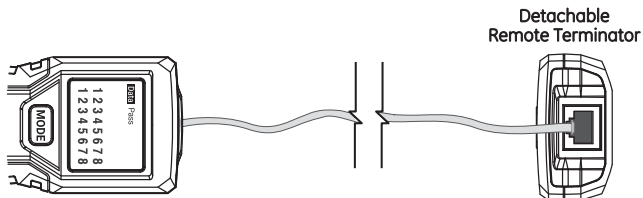


- Data:** Is displayed when testing or toning a network cable.  
**Pass:** Indicates proper wiring on cable being tested.  
**Fail:** Indicates wiring error on cable being tested.  
**Tone:** Is displayed when the tone generator is activated.
- Volt!:** Flashes when the tester is connected to a cable with voltage on it. Exposure to voltage can damage the tester. If this warning appears, immediately disconnect the cable from the tester.  
**X-over:** Is displayed when the tester detects a properly wired cross over cable.  
**Rev:** Is displayed when the cable has reversed and/or crossed connections.  
**Short:** Indicates that two or more wires are shorted to each other.
- : Indicates low battery. When this symbol appears, results from the tester may not be reliable and the battery should be replaced immediately.  
**Shield:** Is displayed when the cable being tested has a shield that is connected at both ends. The Shield indicator will flash if there is a short between the shield and any wire within the cable.  
**Open:** Indicates that one or more pairs are open or have an open circuit.  
**Split:** Is displayed when the tester detects the signal is split between two or more pairs.
- Wire Map near end:** The top row of numbers displays the connector pins on the tester end of the cable in numerical order. These pins are mapped to the pins shown directly below on the bottom row of numbers.
- Wire Map remote end:** The bottom row of numbers displays the corresponding pin numbers on the remote end of the cable. Dash lines indicate shorted pins. No pin numbers indicate an open pair.

## 6. OPERATION

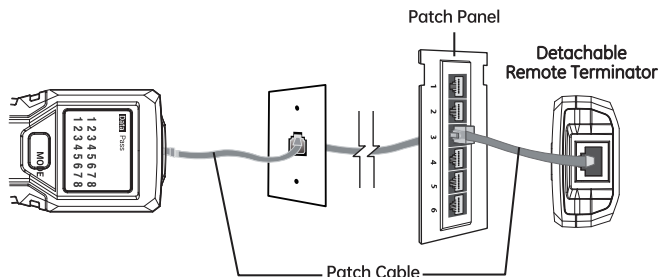
### 6.1. Testing a Data Cable Terminated with RJ45 Connectors

**WARNING:** Exposure to voltage can damage the tester. Immediately disconnect the cable under test if the Voltage warning (**Volt!**) appears on the display. Make sure the cable is not connected to any device that can supply voltage before testing.



1. Connect one end of the cable under test to the RJ45 port on the tester.
2. Detach the remote terminator from the bottom of the tester.
3. Connect the other end of the cable under test to the RJ45 port on the remote terminator.
4. Press the **MODE** button.
5. Interpret the results using the Wiring and Display Examples on **pages 9 to 10.**

## 6.2. Testing an Installed Data Cable

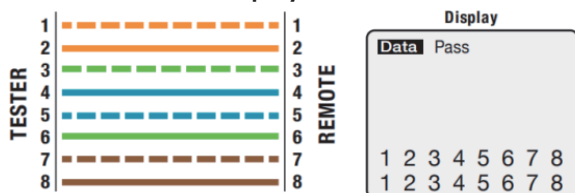


1. Connect a known good patch cable to the wall port or patch panel of the cable being tested.
2. Connect the other end of the patch cable to the RJ45 port on the tester.
3. Detach the remote terminator from the bottom of the tester.
4. Connect another known good patch cable to the RJ45 port on the remote terminator.
5. Connect the other end of the patch cable to the wall port or patch panel at the other end of the cable being tested.
6. Briefly press the **MODE** button.
7. Interpret the test results using the Wiring and Display Examples shown on **pages 9 to 10**.



### 6.3. Wiring and Display Examples for Data Cable

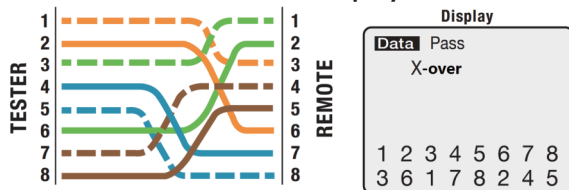
#### 6.3.1. T568B Data Cable Properly Wired



**Pass** appears on the display indicating a properly wired cable. The pin numbers on the top and bottom rows are the same indicating proper continuity.

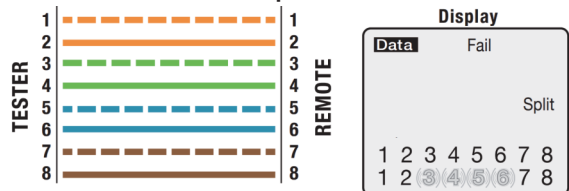
**Note:** The T568A wiring standard is the same as T568B, except that T568A swaps the green and orange pairs. Either standard will test the same electrically, as long as the same standard is used on both ends of the cable.

#### 6.3.2. T568B Cross Over Data Cable Properly Wired



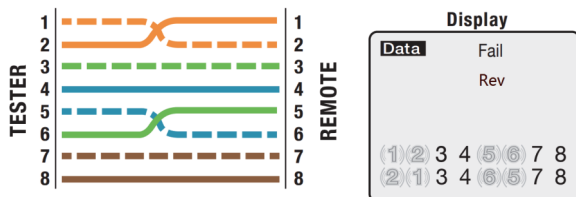
The pairs cross over (transmit to receive and receive to transmit). **Pass** and **X-over** will appear on the display and the pin numbers on the bottom row indicate the corresponding cross over to the pin numbers on the top row.

#### 6.3.3. T568B Data Cable With Split Pairs



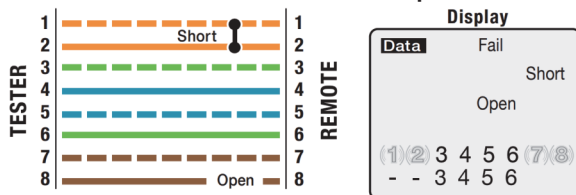
There is a split between the pairs on pins 3, 4 and 5, 6. **"Fail"** and **"Split"** appear on the display and the pin numbers with the split will flash indicating which pairs are split.

### 6.3.4. T568B Data Cable With Reversed Pair and Crossed Connection



The pair on pins 1 and 2 is reversed and the wires on pins 5 and 6 are crossed at one end of the cable. **Fail** and **Rev** will appear on the display and the pins with wiring errors will flash. Pins 2 and 1 shown below pins 1 and 2 indicate a reversal on the Orange pair. Pins 6 and 5 shown below 5 and 6 indicate a crossed connection.

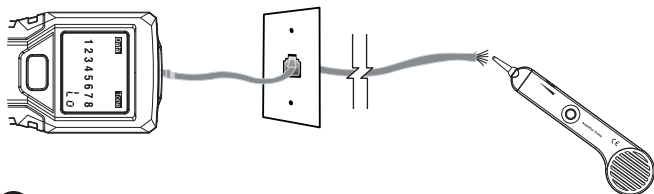
### 6.3.5. T568B Data Cable With a Shorted and Open Pair



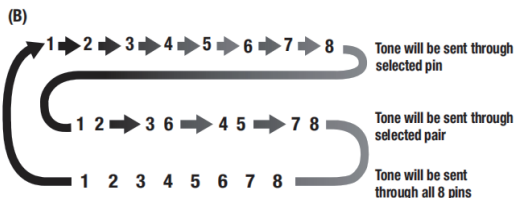
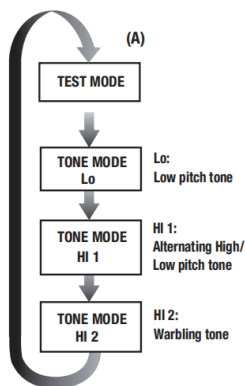
Pins 1 and 2 are shorted and the pair on pins 7 and 8 is open. **Fail**, **Short** and **Open** appear on the display and the pins with wiring errors will flash. A dash will appear below shorted pins and a blank space will appear below open pairs.

## 6.4. Using the Tone Generator to Trace a Data Cable

**NOTE:** It is necessary to use a separate amplifier probe in order to hear the tone.



1. Connect the cable under test to the RJ45 port on the tester.
2. Press and hold the **MODE** button. Release the **MODE** button as soon as **Tone** appears on the LCD display.
3. To change tones, press the **MODE** button for approximately one second. Refer to sequence chart (A) for description of tone selection.
4. The pin that is sending the tone will be displayed at the bottom of the LCD display. Repeatedly press the **MODE** button with short presses to select the desired pins. Refer to sequence chart (B) below for explanation of pin selection.
5. To turn off the tone generator, press and hold the **MODE** button. Release the button as soon as **OFF** appears on the display.

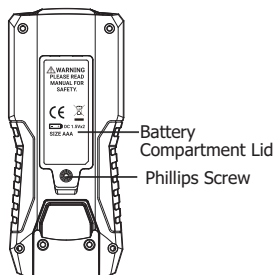


**NOTE:** When tracing a cable run from the tone generator to the end of the cable, applying the tone on a single pin will allow the tone to be detected at a greater distance from the cable. When trying to locate a cable in an equipment room or patch panel, sending the tone through all 8 pins or a single pair will limit the tone signal from spreading to other nearby cables. The tone will be loudest when the probe tip is placed directly on the wires the tone is being sent through at the end of the cable. When sending a tone through a single pair, verification can be made by shorting the suspected pair. The tone will be very faint when the pair the tone is being sent through is shorted.

## 7. BATTERY REPLACEMENT

1. Loosen and remove the one Phillips screw.
2. Open the battery compartment.
3. Replace the 2 x AAA batteries.
4. Replace the battery compartment lid.
5. Insert and tighten the Phillips screw

**NOTE:** Do not operate the tester with the battery compartment lid removed.



## 8. GENERAL SPECIFICATIONS

Function	Range
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	10% to 90%, non-condensing
Maximum Voltage between any two pins to prevent damage	60V DC or 55V AC
Batteries	2 x "AAA" 1,5V
Cable Types	Shielded or Unshielded: Cat 7, Cat 7a, Cat 6a, Cat 6, Cat 5e, Cat 5, Cat 3
Maximum Cable Length	305m (1000 feet)
Minimum Cable Length for Split Pair Detection	0.5m (1.6 feet)
Maximum Coax Cable Resistance	100 Ohms maximum (DC)
Dimensions	127.3 x 54.5 x 27.8mm
Weight	141g (Incl. Batteries)









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