MTC25
Data Cable
Tester

MAJOR TECH MTC25 Data Cable Tester Instruction Manual

Contents

MAJOR TECH MTC25 Data Cable Tester

Product Information

Specifications

- **Product Name:** MTC25 Data Cable Tester
- **Function:** Maps out connections, verifies wiring, displays faults on RJ45 terminated cables
- **Features:** Built-in tone generator for cable tracing, LCD

Product Usage Instructions

Introduction

The MTC25 Data Cable Tester is designed to map out connections, verify wiring, and display faults on RJ45 terminated cables. It also features a built-in tone generator for cable tracing.

1. Keep the tester dry. Wipe off any moisture if it gets wet.
2. Use and store the tester at normal temperatures.

Tester Description

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

Symbols Used on LCD Display

Various symbols are displayed on the LCD to indicate test results and warnings. Some important symbols include Pass, Fail, Tone, X-over, Rev, Short, Wire Map near end, and Wire Map remote end.

Operation

- Testing a Data Cable Terminated with RJ45 Connectors
- **Warning:** Disconnect the cable if a Voltage warning (Volt!) appears to prevent damage to the tester.

1. Connect one end of the cable 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 to the RJ45 port on the remote terminator.
4. Press the MODE button.
5. Interpret the results using the Wiring and Display Examples provided in the manual.

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.

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 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.

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 time, the batteries should be removed to prevent damage to the unit.

TESTER DESCRIPTION

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

Cable Tester Top View

RJ45 Jack

Cable Tester Bottom View

RJ45 Jack
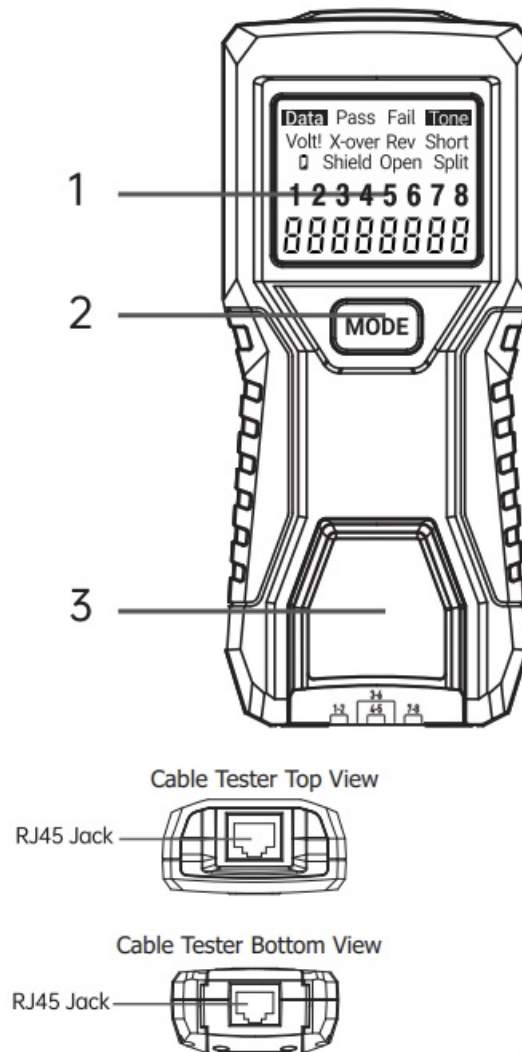
SYMBOLS USED ON LCD DISPLAY

1. **Data:** This is displayed when testing or toning a network cable.
   - **Pass:** Indicates proper wiring on the cable being tested.
   - **Fail:** Indicates wiring error on the cable being tested.
   - **Tone:** This is displayed when the tone generator is activated.
2. **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:** This is displayed when the tester detects a properly wired cross-over cable.
   - **Rev:** This is displayed when the cable has reversed and/or crossed connections.
   - **Short:** Indicates that two or more wires are shorted to each other.
3. **Indicates** low battery. When this symbol appears, results from the tester may not be reliable and the battery should be replaced immediately.
   - **Shield:** This 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:** This is displayed when the tester detects the signal is split between two or more pairs.

4. **Wire Map near the 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.

5. **Wire Map remote end:** The bottom row of numbers displays the corresponding PINs on the remote end of the cable. Dash lines indicate shorted pins. No PINs indicate an open pair.
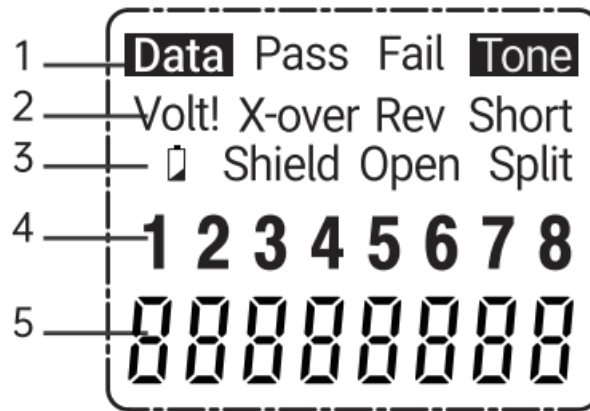

OPERATION

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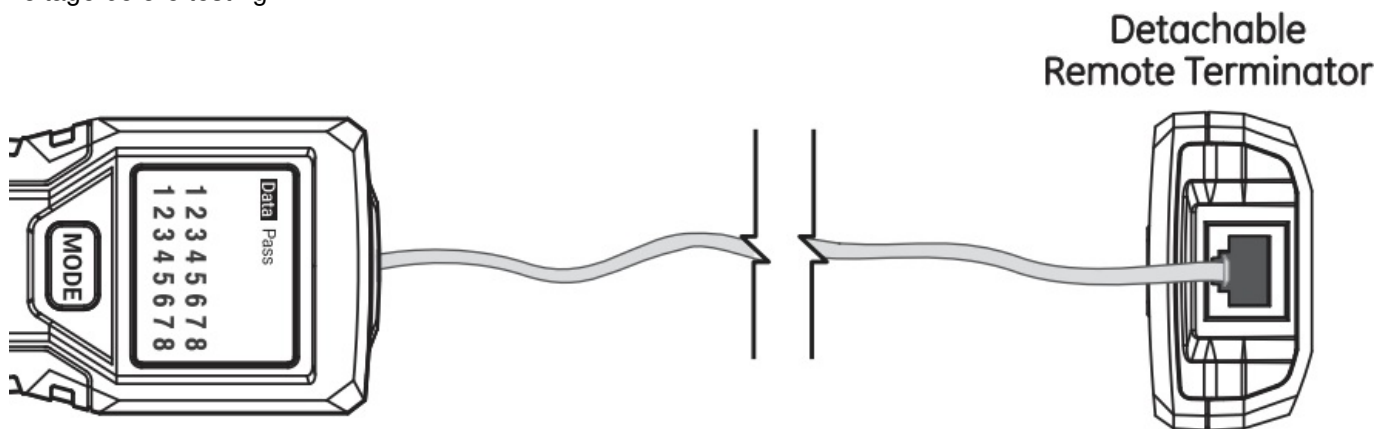
1. Connect one end of the cable under test to the RJ45 port on the tester.
2. Detach the remote terminator from the bottom of the tester.
3. Connect the other end of the cable under test to the RJ45 port on the remote terminator.
4. Press the MODE button.
5. Interpret the results using the Wiring and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

Testing an Installed Data Cable

Patch Panel

Detachable Remote Terminator
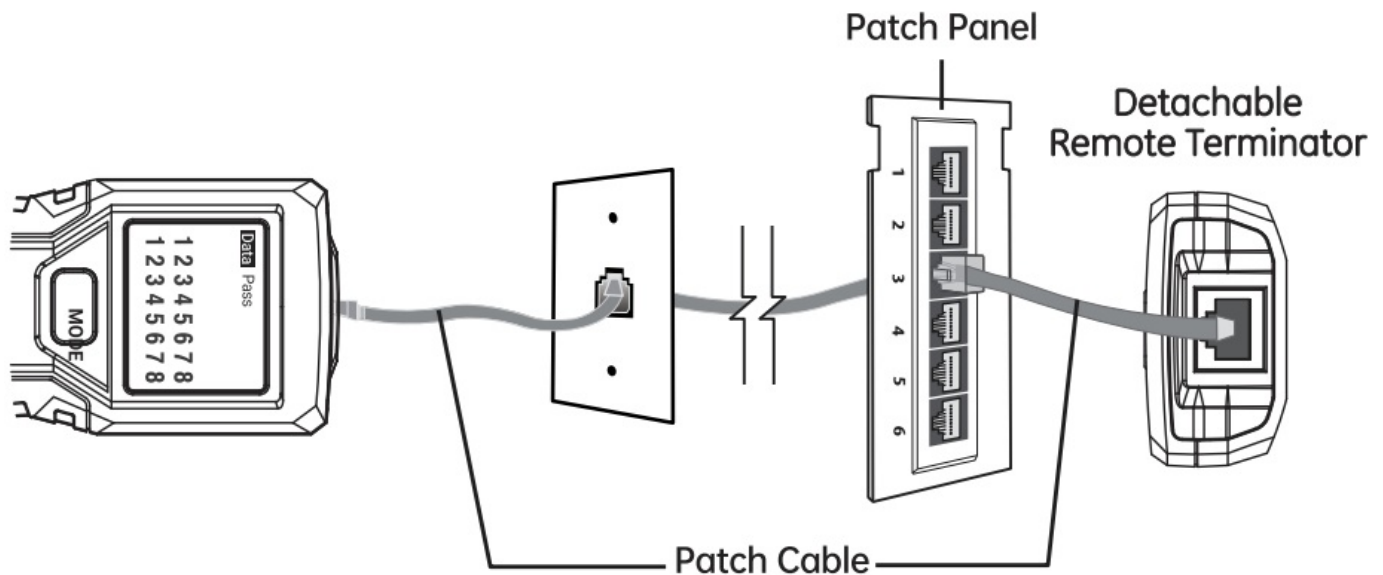
Patch Cable

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.

Wiring and Display Examples for Data Cable

T568B Data Cable Properly Wired
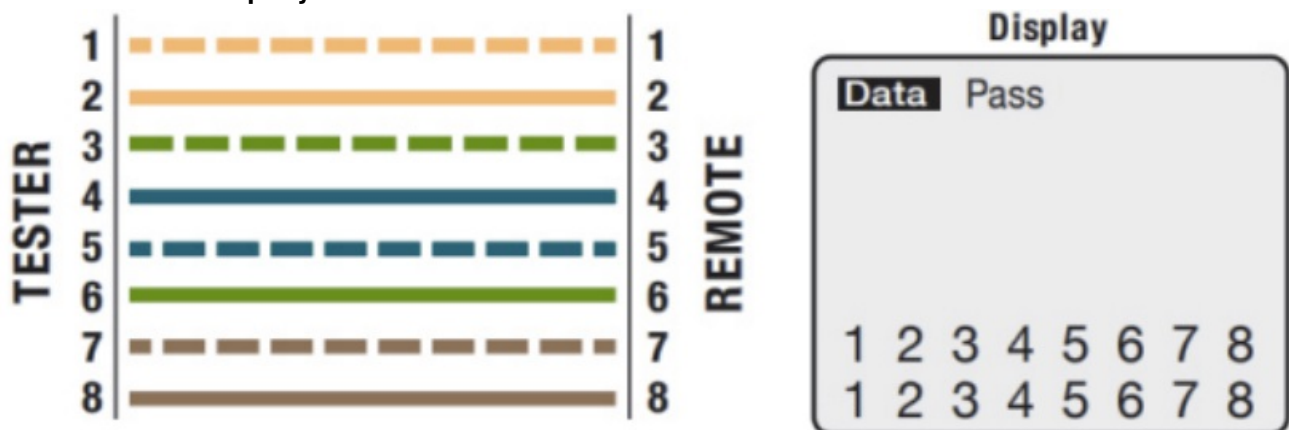
- A pass appears on the display indicating a properly wired cable. The PINs on the top and bottom rows are the same indicating proper continuity.
- **Note:** The T568A wiring standard is the same as T568B, except that T568A swaps the green and orange pairs. Either standard will test the same electrically, as long as the same standard is used on both ends of the cable.

**T568B Cross-Over Data Cable Properly Wired**
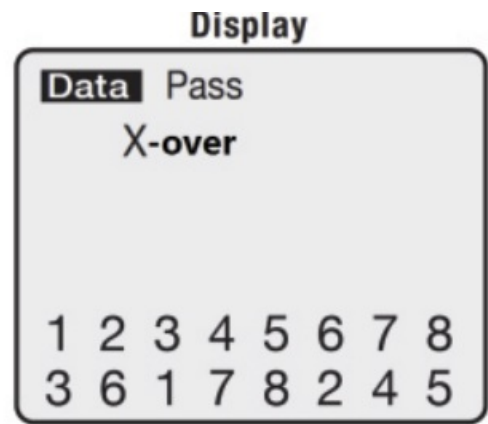
The pairs cross over (transmit to receive and receive to transmit). Pass and X-over will appear on the display and the PINs on the bottom row indicate the corresponding cross-over to the PINs on the top row.

T568B Data Cable With Split Pairs
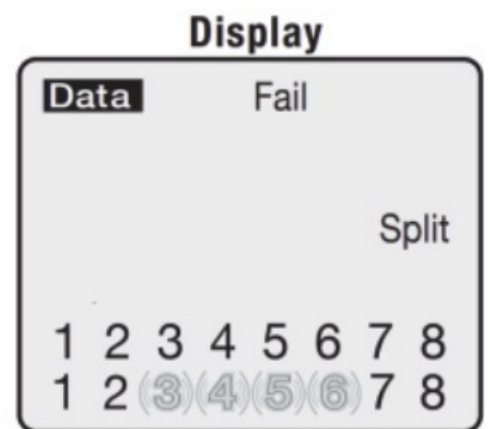
- There is a split between the pairs on pins 3, 4, and 5, 6. "Fail" and "Split" appear on the display and the PINs with the split will flash indicating which pairs are split.

T568B Data Cable With Reversed Pair and Crossed Connection
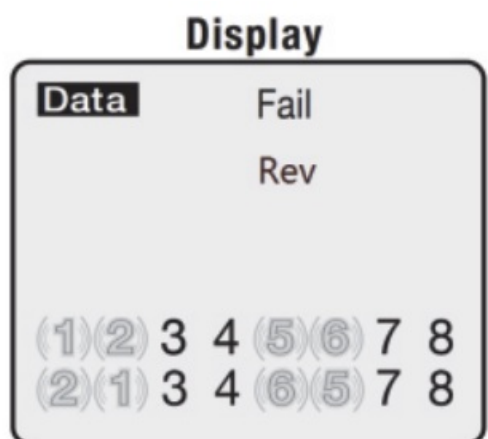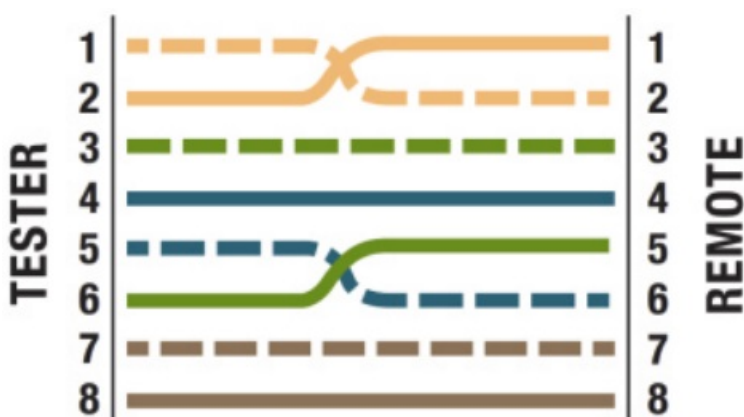
The pair on pins 1 and 2 is reversed and the wires on pins 5 and 6 are crossed at one end of the cable. Fail and Rev will appear on the display and the pins with wiring errors will flash. Pins 2 and 1 shown below pins 1 and 2 indicate a reversal on the Orange pair. Pins 6 and 5 shown below 5 and 6 indicate a crossed connection.

T568B Data Cable With a Shorted and Open Pair
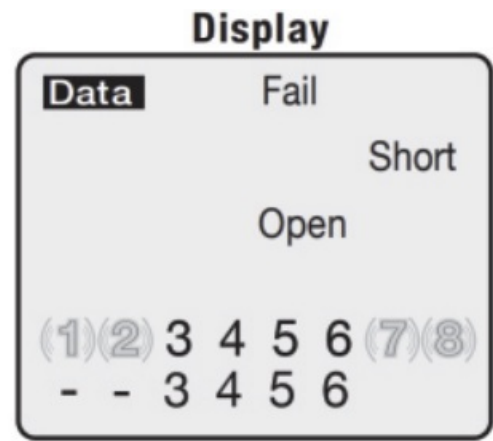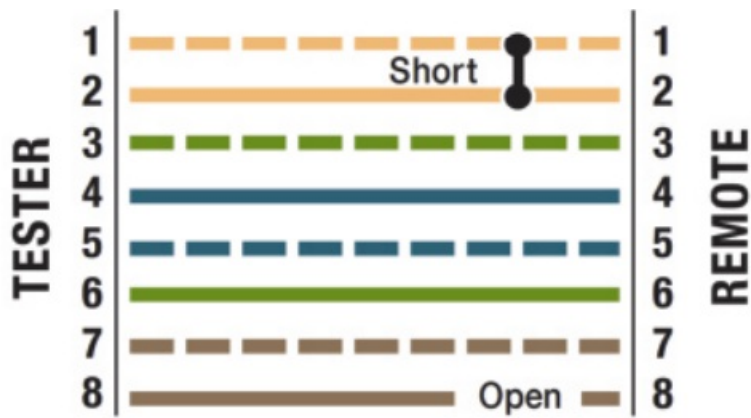
Pins 1 and 2 are shorted and the pair on pins 7 and 8 is open. Fail, Short, and Open appear on the display and the pins with wiring errors will flash. A dash will appear below shorted pins and a blank space will appear below open pairs.
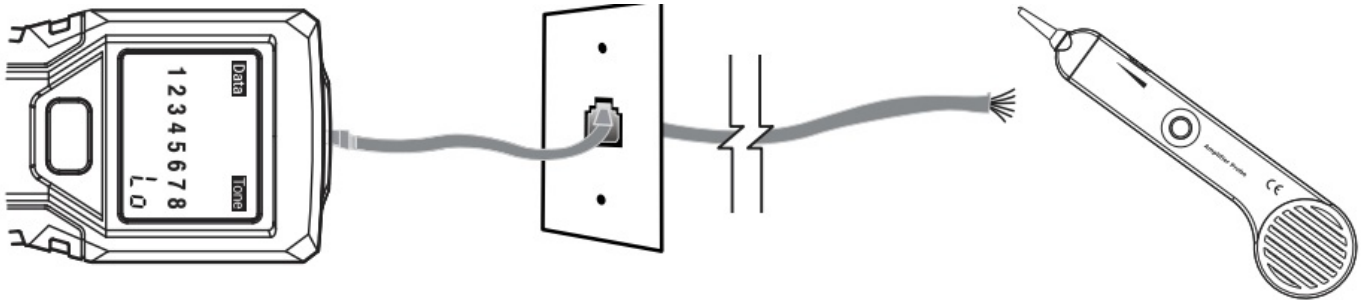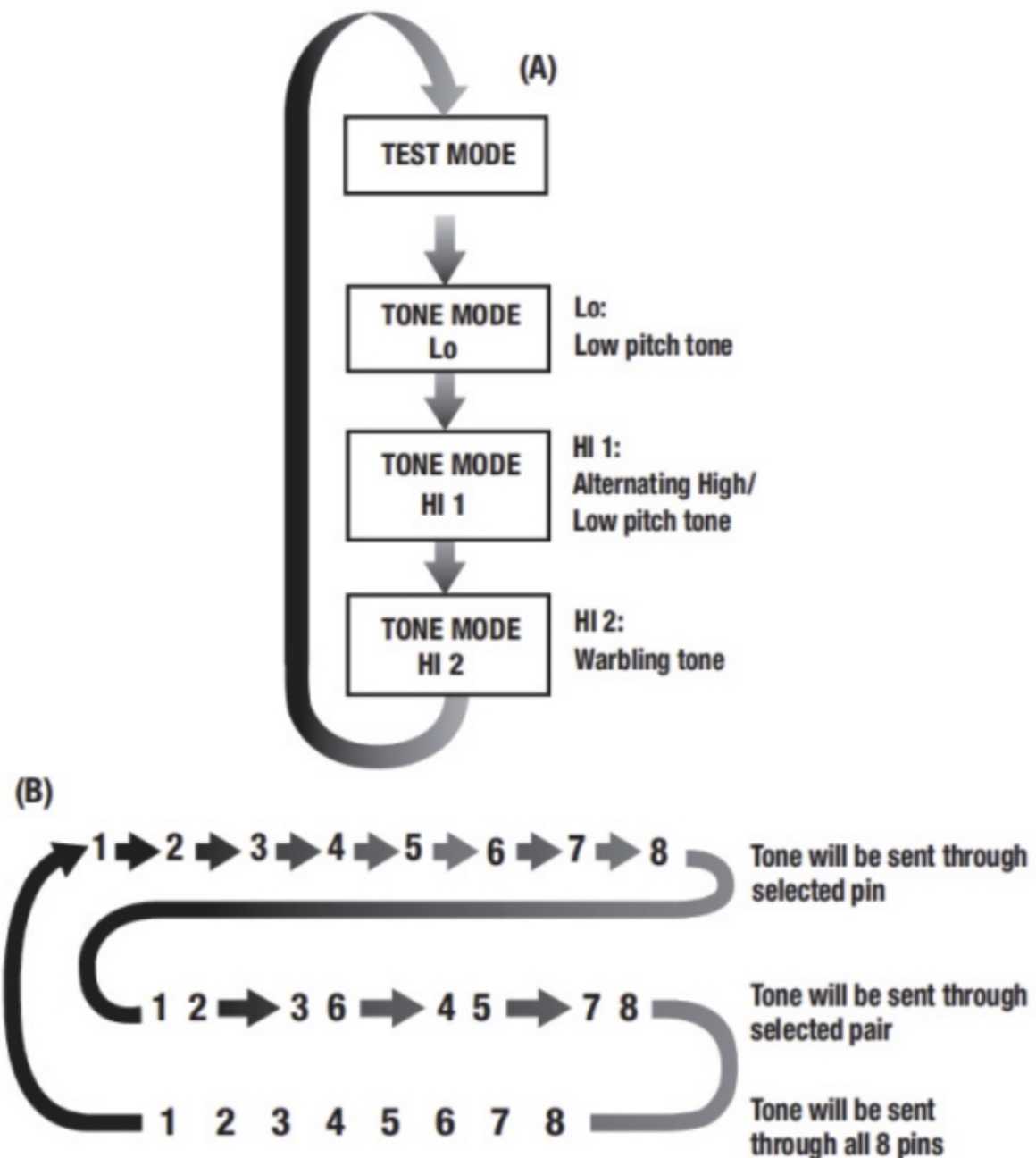
Using the Tone Generator to Trace a Data Cable

NOTE: It is necessary to use a separate amplifier probe 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.
3. To change tones, press the MODE button for approximately one second. Refer to sequence chart (A) for the description of tone selection.
4. The pin that is sending the tone will be displayed at the bottom of the LCD. Repeatedly press the MODE button with short presses to select the desired pins. Refer to sequence chart (B) below for an 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.

(A)

```
        ┌──────────────┐
   ┌───→│  TEST MODE   │
   │    └──────┬───────┘
   │           ↓
   │    ┌──────────────┐   Lo:
   │    │  TONE MODE   │   Low pitch tone
   │    │     Lo       │
   │    └──────┬───────┘
   │           ↓
   │    ┌──────────────┐   HI 1:
   │    │  TONE MODE   │   Alternating High/
   │    │    HI 1      │   Low pitch tone
   │    └──────┬───────┘
   │           ↓
   │    ┌──────────────┐   HI 2:
   │    │  TONE MODE   │   Warbling tone
   │    │    HI 2      │
   │    └──────┬───────┘
   └───────────┘
```

(B)

1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 Tone will be sent through selected pin

1 2 → 3 6 → 4 5 → 7 8 Tone will be sent through selected pair

1 2 3 4 5 6 7 8 Tone will be sent through all 8 pins

- **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 loud 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.

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.
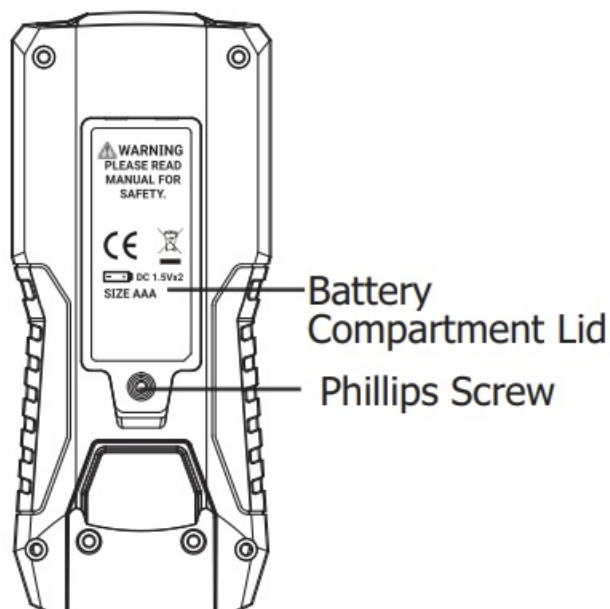
GENERAL SPECIFICATIONS

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)

WARRANTY

Warranty Coverage

- Major Tech warrants its test instruments to be free from defects in materials or workmanship under normal use and service for two (2) years from the date of shipment.
- This warranty is extended exclusively to the original purchaser, provided the online Product Registration has been completed on either **www.major-tech.com** or **www.majortech.com.au**, depending on which country the

product was purchased.

- This warranty is non-transferable.

Exclusions

- This warranty does not cover.
- Disposable batteries and fuses
- Damage caused by leaking batteries (damaging the meter and components)
- Normal wear and tear of mechanical components
- Failures caused by use outside the product's specifications Any product which, in the opinion of Major Tech, has been misused, contaminated, or damaged due to neglect.

Check Procedure

- Prior to contacting Major-Tech or a distributor regarding a warranty claim, please check the following.
- Batteries are installed correctly
- Battery condition – either replace disposable batteries or ensure rechargeable batteries are charged where applicable
- Test leads are inserted in the correct terminals and are fully inserted, with no damage to test leads.

Contact Information

- For any warranty claims or inquiries, please contact either Major-Tech or the distributor from whom the product was purchased.

MAJOR TECH (PTY) LTD

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FAQ

- **Q: What should I do if the Voltage warning (Volt!) appears on the display?**
  - **A:** Immediately disconnect the cable under test to prevent damage to the tester. Ensure the cable is not connected to any device supplying voltage before testing.
- **Q: How should I maintain the tester for long-term use?**
  - **A:** Keep the tester dry at all times and store it at normal temperatures to ensure dependable service over the years.

Documents / Resources

MAJOR TECH MTC25 Data Cable Tester [pdf] Instruction Manual
MTC25 Data Cable Tester, MTC25, Data Cable Tester, Cable Tester, Tester

References

- **M** **Home | Major Tech**
- **M** **One moment, please...**
- **User Manual**