

Testing and Diagnostic Equipment (TDE) for Signal Technicians

This course provides an overview of essential testing and diagnostic equipment (TDE) used by Signal Technicians. Please select a module from the choices below by clicking on its image.

**Module 1: Digital Multimeter**

Review basic DMM operation and check continuity

**Module 2: Volt Ohm Milliammeter**

Learn basic procedures for checking loop resistance

**Module 3: Loop Finder /Tester**

Go over essential operations to find and test traffic signal loops.

**Module 4: Grnd resistance Tester**

Review basic ground resistance testing procedures.

**Module 5: Pipe/Cable Locator**

Examine basic operation for using a pipe/ cable locator.

**Module 6: Conflict Monitor tester**

Learn basic set up and operation to test signal conflict monitors

**SAMPLE Quiz**

Check your knowledge..

Module 1: The Digital Multimeter (DMM)

This module discusses essential features and basic operations and procedures for using the digital multimeter in testing and diagnosing traffic signal systems. Please select a lesson by clicking on its image.



Lesson 1: DMM Overview

Examine the most common piece of equipment used.



Lesson 2: Parts of the DMM

Learn the parts of the digital multimeter.



Lesson 3: Basic DMM Operation.

Examine how to use the DMM



Lesson 4: Checking continuity

Examine how to use the DMM to check continuity.



Module Quiz

Check your knowledge of the Digital Multimeter.

Overview: The Digital Multimeter

Lesson 1: Objective

After completing this lesson, you will:

- Learn what Technicians use the DMM for
- Recognize parts common to most DMMs
- Identify how some DMM features vary
- Preview DMM operational procedures



Overview: The Digital Multimeter

Lesson 1: Introduction

One of the most common tools used by signal technicians is the digital multimeter, or DMM.

Georgia DOT Traffic Signal Technicians use the DMM for voltage, continuity and loop testing applications in traffic signal systems.

While the Department has a standard-issue DMM, there are several types in use.



Overview: The Digital Multimeter

Lesson 1: Introduction

The main part of the DMM is the **LCD display**. This "digital" display contains critical information you need when testing.

Depending on the DMM type, model and features available, information displayed on DMM LCDs can vary in the use of display icons and their location on the display.

We'll discuss the LCD and the display icons in more detail in another lesson.



Overview: The Digital Multimeter

Lesson 1: Introduction

Basically all DMMs work the same way, the primary differences are the features and functions that are available.

Some newer DMMs, for example, have an automatic power off, and an audio feature that provides a tone or "beep" which makes checking for continuity much easier.

We'll discuss DMM features and functions in more detail later.



IMPORTANT

[X]



The DMM should only be used by personnel qualified to recognize shock hazards and are trained in safety precautions to avoid injury.

Overview: The Digital Multimeter

Lesson 1: Introduction

While all DMMs basically work the same, they also have parts in common. Six basic parts that are common to most DMMs include:

1. LCD display
2. Function Selector
3. Feature Buttons
4. Input Terminals
5. Test Leads
6. Operator's Manual

We'll discuss these parts in more detail in Lesson 2.



Overview: The Digital Multimeter

Lesson 1: Introduction

Each DMM should come with an operator's manual. The manual contains critical safety information, specifications and instructions you need to know.

Before operating the DMM, you should read and be thoroughly familiar with the operator's manual.

If you do not have the manual for the make and model of your DMM, contact your supervisor.



 **WARNING** [X]



Read and understand the operator's manual before operating or servicing a DMM. Failure to understand how to safely operate a DMM can result in serious injury or death.

Overview: The Digital Multimeter

Lesson 1: Introduction

Operating the digital multimeter basically involves seven steps:

1. Determine what to test
2. Plug in the leads
3. Select the measurement
4. Set the Feature
5. Connect the leads
6. Take the measurement
7. Turn off the unit

We'll discuss these steps in more detail later.



Overview: The Digital Multimeter

Lesson 1: Introduction

The DMM is a very versital piece of equipment used to test and diagnose circuits and components in traffic signal systems.

Remember, Signal Technicians are required to observe and follow all safety precautions when using testing and diagnostic equipment.



CAUTION [X]

 Electric shock and fire hazard: Do not expose this unit to rain or moisture. Failure to observe this warning can result in severe injury or death.

Thank You!