Introducing

TECHNICAL *Interactive*

Electrical Fundamentals Edition

Comprehensive Teaching Resources for Professional Service Instructors

ATTENTION

INSTRUCTORS!

Automotive, Heavy Vehicle, Motorcycle, Snowmobile, Watercraft, ATV, Outboard Marine and Small Engine Service Instructors!

Finally!

Electrical Theory and Diagnostics

TEACHING RESOURCE!

Introduction

In response to hundreds of inquiries from community college instructors, technical center instructors, and high school teachers across North America, requesting a "fundamental electrical" teaching resource, similar in design to our Air Brake *Interactive* programs, we are very pleased to announce the release of the first program in our new "**TECHNICAL *Interactive***" series! This new training program was developed specifically for professional EDUCATORS and SERVICE INSTRUCTORS in the automotive, heavy vehicle, motorcycle, ATV, snowmobile, watercraft, outboard marine, and small engine industries!

TECHNICAL *Interactive* Electrical Fundamentals Edition (TI-EF), employs the same visual multimedia learning techniques that have made our Air Brake programs the leading teaching resources for heavy vehicle air brake instructors, around the world!

The TI-Electrical Fundamentals Program

TECHNICAL *Interactive* Electrical Fundamentals Edition is a complete, ready-to-present, teaching resource! The package consists of a comprehensive, state-of-the-art, computer interactive instructor-controlled multimedia presentation supported by a comprehensive, full color, Instructor's Reference and Presentation Guide. Your students will actually SEE how electricity works, SEE and HEAR how various electrical circuits and components function, and SEE how to effectively diagnose circuit malfunctions!

TECHNICAL *Interactive* Electrical Fundamentals Edition consists of 7 teaching modules, which can be presented in order, or as individual learning subjects to match your existing curriculum. The following list describes the content of each module and illustrates some of the visuals and animations in this course.

For further information, or to arrange a no-obligation LIVE on-line demonstration, *please contact:*

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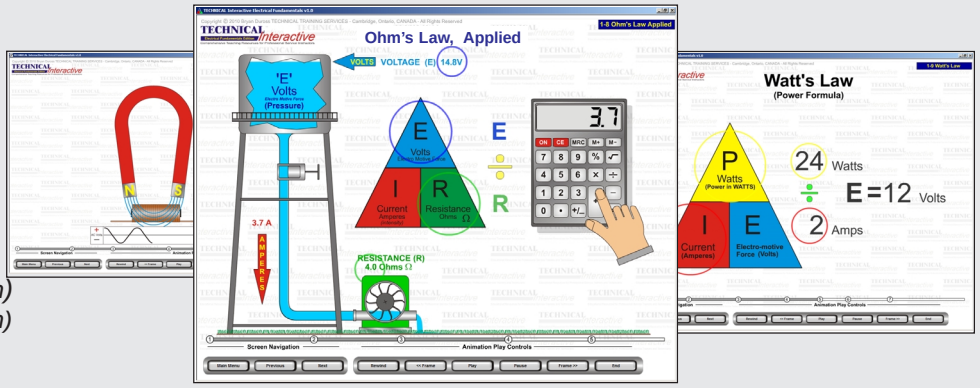
Module 1 – Basic Electrical Theory

Module 1 focuses on the theoretical issues associated with electricity. Employing a combination of voice narrated animations and detailed static illustrations, this module illustrates and explains the follow topics:

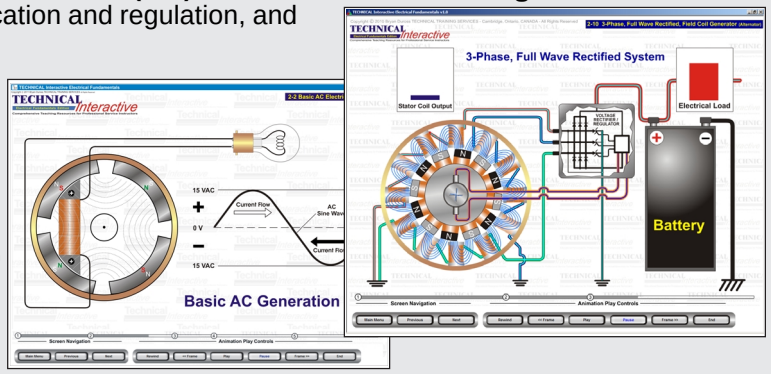
- Atoms and Electrons *(visual)*
- Magnetism *(animation)*
- Electrical Conductors *(visual)*
- Electrical Insulators *(visual)*
- What is Electricity? *(visual)*
- Water Tower Analogy *(animation)*
- Ohm's Law *(animation)*
- Ohm's Law Applied *(animation)*
- Watt's Law *(animation)*
- Watt's Law Example 1 *(animation)*
- Watt's Law Example 2 *(animation)*



Module 2 – Alternating Current (AC) & Direct Current (DC) Generation and Voltage Rectification

Module 2 focuses on electrical current generation, rectification and regulation, and includes the following topics:

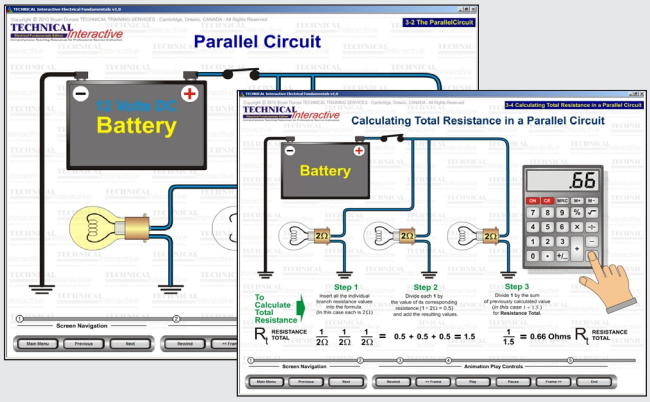
- Current Types *(visual)*
- Basic AC Electrical Generation *(animation)*
- Multiple 3-Phase AC Generation *(animation)*
- AC to DC Current Rectification *(animation)*
- Half Wave Current Rectification *(animation)*
- Full Wave Current Rectification *(animation)*
- 3-Phase, Full Wave, Current Rectification *(animation)*
- Electro-Magnetic Fields *(animation)*
- Zener Diode Voltage Regulation *(animation)*
- 3-Phase Field Coil Alternator *(animation)*



Module 3 – Electrical Circuits

In Module 3, students will learn about electrical circuits, how they function and what problems can develop and occur within an electrical circuit. Topics include:

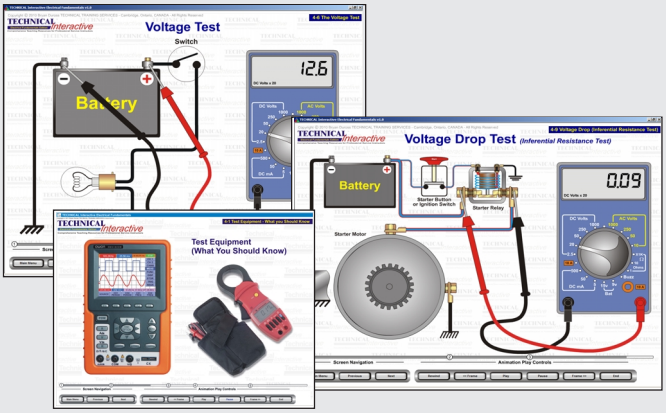
- The Series Circuit *(animation)*
- The Parallel Circuit *(animation)*
- Adding Resistors (loads) to a Parallel Circuit *(animation)*
- Calculating Total Resistance - Parallel Circuit 1 *(animation)*
- Calculating Total Resistance - Parallel Circuit 2 *(animation)*
- Calculating Total Resistance - Parallel Circuit 3 *(animation)*
- The Series/Parallel Circuit *(animation)*
- Circuit Problems *(visual)*
- Open Circuits - Series and Parallel *(animation)*
- Short Circuit *(animation)*
- The Results of a Short Circuit *(visual)*
- Excessive Circuit Resistance *(animation)*



Module 4 – Basic Electrical Test Precautions, Equipment and Diagnostic Procedures

This module addresses electrical test equipment and electrical test procedures in full animation. Subjects include:

- Analogue & Digital Multi-Meters (Volt/Ohm Meters) *(visual)*
- Inductive Meters *(visual)*
- Digital Oscilloscopes *(visual)*
- Electrical Test Preparations *(visual)*
- Electrical Testing Precautions *(visual)*
- Voltage Test *(animation)*
- Amperage Test (Current for 10 amps or less) *(animation)*
- Resistance Test (Continuity) *(animation)*
- Voltage Drop - Inferential Resistance Test *(animation)*
- The Importance of Circuit Grounds *(visual)*
- High Amperage Current Shunt *(animation)*
- Resistance & Voltage Issues in Long, Multi-Connector Circuits *(animation)*



Module 5 – Wire Gauges, Fuses and Circuit Breakers

In module 5, students will learn about Wire Gauge Amp/Ohm Specifications, Fuse types and circuit breakers, including: Wire Size Standards (AMG & Metric), Wire Gauge Amp/Ohm Specifications, Fuse types (SFE, ATC, ATM), Circuit Breakers and ATC replacement.

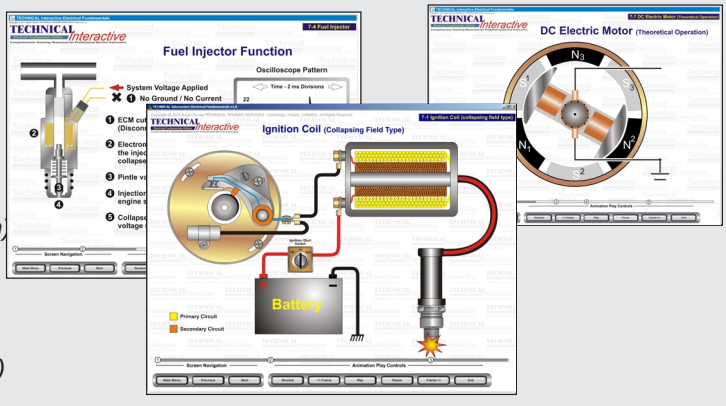
Module 6 – Electrical Symbols and Schematics

In module 6, students will see electrical symbols, and learn how to identify specific electrical components in electrical schematics.

Module 7 – Common Electrical Components (How They Work)

Model 7 is our "How They Function" module. Employing full voice-narrated animations, students will see and hear how a variety of electrical components actually function.

- Ignition Coil, Collapsing Field *(animation)*
- Ignition Coil, Expanding Field *(animation)*
- Wheel Speed Sensor *(animation)*
- Fuel Injector *(animation)*
- Relay Switch, Electro-Magnetic *(animation)*
- Electric Motor *(animation)*
- Manifold Absolute Pressure (MAP) Sensor *(animation)*
- O^2 Sensor *(animation)*
- Throttle Position Sensor (TPS) *(animation)*
- Starter Solenoid *(animation)*
- Light Emitting Diode (LED) *(animation)*
- Hall Effect Switch (pulse signal generator) *(animation)*
- Hall Effect Switch (position sensor) *(animation)*



For further information or to arrange for a no-obligation live, on-line demonstration of any or all of our **AIR BRAKE *Interactive*** or **E-*Board*** programs, please contact:

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