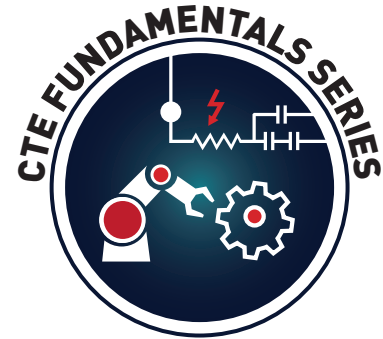


INTRO TO INDUSTRIAL ELECTRICAL

PORTABLE ELECTRICAL CIRCUITS TRAINER



Integrate Electrical Systems in a Comprehensive STEM & CTE Education Program

About the Electrical System Trainer

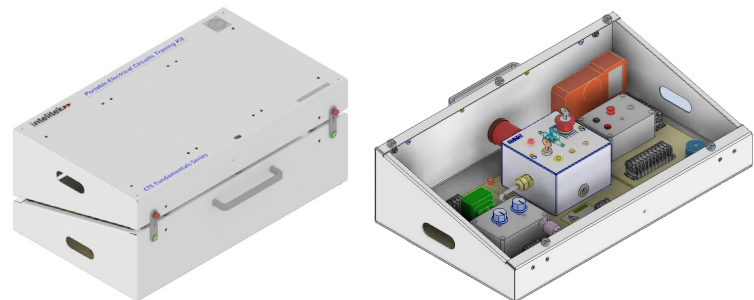
Electrical Systems are the backbone of all industrial systems. The trainer gives students a solid foundation of knowledge in electricity and its practical applications.

This course provides hands-on introduction to industrial electrical system with experiments involving the theory and construction of power supplies and circuits. The course is skill-based, using exercises that reproduce essential tasks performed by maintenance technicians, equipment operators, and machine repairmen.

Students design and simulate circuits using real industrial components connected with jumper wires like they will see in industrial settings.

Students learn safety procedures, and how to use a multimeter to practice in-circuit measurements. While wiring circuits, students learn how to read schematic diagrams and practice basic electrical techniques like testing power sources.

- Channel students from STEM to CTE and to jobs or college readiness
- Real industrial equipment just like in the real-world (no banana plugs!)
- Skills-base learning with work orders and documentation exercises
- Pathway to advanced training and NIMS Industrial Technology Maintenance credentials



Blended learning solution to introduce STEM and CTE students to industrial skills

- Portable for ease of use in the classroom
- Scalable from small to large classes
- Expandable to more advanced electrical
- Full pedagogic package with curriculum, instructor guidance, evaluations, and hands-on lab hardware with detailed activity instructions

Curriculum: Electrical Circuits

Electrical Circuits introduces students to concepts including lockout/tagout and safety; connecting circuits and measuring electrical quantities like voltage and current.

Course Outline

- Performing Lockout/Tagout
- Connecting a Basic Circuit
- Identifying Switches
- Connecting a Momentary Switch
- Connecting a Toggle Switch
- Identifying Sources of Electricity
- Measuring DC Voltage
- Constructing a Series Circuit
- Constructing a Parallel Circuit
- Applying DC Voltage Principles
- Testing an Electrolytic Cell
- Testing a Battery
- Testing a Thermocouple
- Testing a Photovoltaic (PV) Cell

Materials Included

Electrical Circuits Curriculum

- 1 yr subscription for unlimited students
- Teachers' Guide

Portable Electrical Circuits Trainer:

- Trainer base desktop mounted unit
- Power Control Panel: (120V)
- (5) lab panels:
 - Panel E040: Switch, Lamp and Buzzer
 - Panel E045: Sources of Electricity
 - Panel E047: Heat and Light Source
 - Panel E151: Series/Parallel Lamp Circuits
 - Panel E152: Adjustable Power Supply
- Digital Multimeter

Ordering Information

Electrical Circuits Trainer	CFS-ELEC-001
Transport Carry Case	CFS-ELEC-CASE
Extended Curriculum subscription (additional 3yrs)	CFS-ELEC-CURR3

Hardware Specifications: Portable Electric Circuits Trainer

Trainer Base

- 2 tabletop mounting frames
 - Aluminum mounting frame for up to 3 panels
 - Frames fold into storage case
 - Panels stored inside frame when not in use
- Frame Dimensions: 26"x15.5"x7.5"
- Storage Dimensions 26"x15.5"x 11"
- Weight: Approx 15lbs

Panel E040: Switch, Lamp and Buzzer

- 1 87dB Piezo pulse buzzer
- 1 12V jumbo lamp
- 1 SPST toggle switch
- 1 DPDT toggle switch
- 1 NO pushbutton switch
- 1 NC pushbutton switch

Panel E045: Sources of Electricity

- 1 Encapsulated PV cell
- 1 J-type surface thermocouple
- 1 Battery box
- 4 D-cell batteries

Panel E047: Heat and Light Source

- 1 Heat gun
- 1 Flashlight

Panel E151: Series/Parallel Lamp Circuits

- 6 Miniature bulb sockets
- 3 3.7V@0.30A bulbs
- 3 6.3V@0.30A bulbs

Panel E152: Adjustable Power Supply

- 1 8V/16V/24V transformer
- 1 1000uF 50V 20% axial-lead electrolytic capacitor
- 1 4A 50PIV bridge rectifier
- 1 100-ohm rheostat

Digital Multimeter

- True-rms
- CAT III 600 V safety rated
- AC/DC volts, millivolts, amps
- Continuity
- Resistance
- Diode test
- Capacitance
- Hz (V or A input)



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Optional rugged transportation case available to store and transport the trainers safely

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