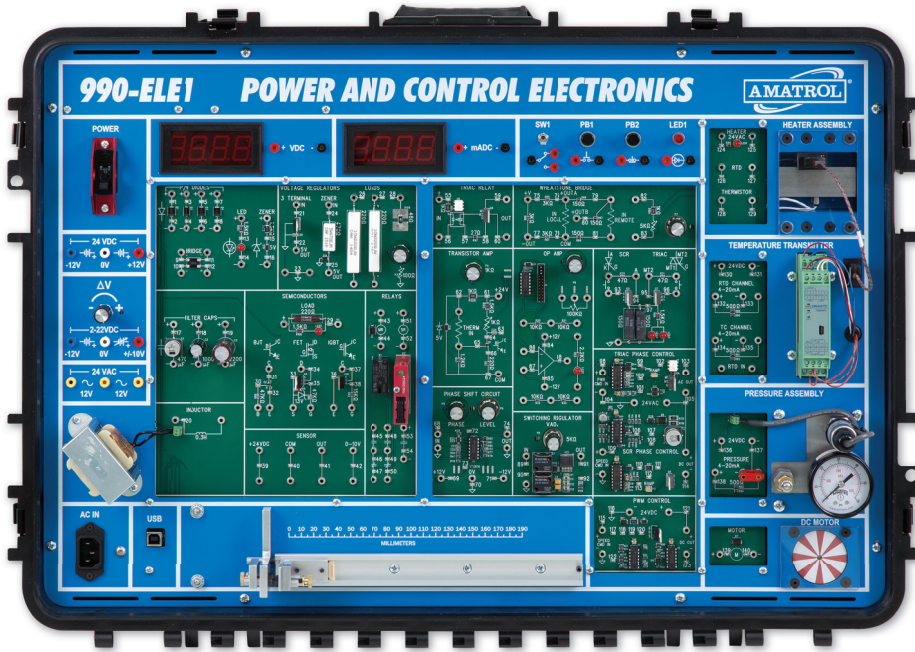


Portable Power and Control Electronics Learning System

990-ELE1

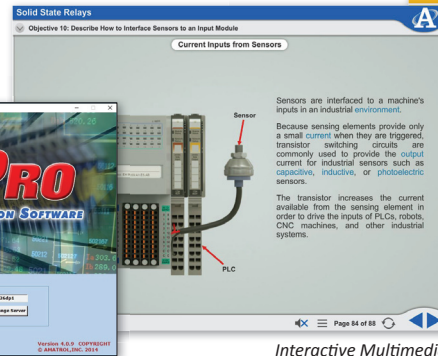


990-ELE1

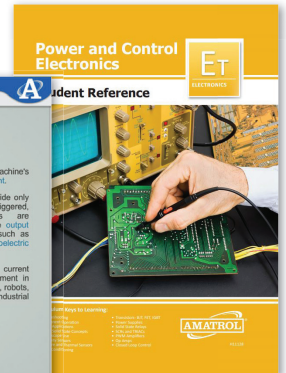
Component Case with Digital Multimeter, Signal Generator, & Electronic Sensors with Targets



FaultPro



Interactive Multimedia



Student Reference Guide

Learning Topics:

- Oscilloscopes
- Linear Power Supplies
- Power Supply Filtration and Regulation
- Solid State Relays
- Discrete Sensing Devices
- Thermal Sensing Devices
- Amplifiers and Op Amps
- Analog Sensing Devices
- Solid State Switching
- Solid State Speed and Power Control

Amatrol's Portable Power and Control Electronics Learning System (990-ELE1) teaches learners how to operate, adjust, and troubleshoot electronic components, circuits, and systems used in machine applications. This powerful training system allows users to explore the fundamental concepts of industrial power and control electronics, such as measuring temperature, speed, and analog signals, in a convenient, compact unit that can be easily transported for use in multiple locations.

The 990-ELE1 features a wide variety of industry-standard electrical components and circuits that can be set up in various real-world machine applications. These components will help learners gain hands-on experience with linear power supplies, solid state relays, discrete and thermal sensing devices, solid state switching, and more! The 990-ELE1 also utilizes FaultPro, the industry's premier computer-based fault insertion system that enables learners to develop key industry troubleshooting skills. FaultPro features 30 different faults to present learners with realistic troubleshooting experiences.



Technical Data

Complete technical specifications available upon request.

Portable Case w/ Power Cord Electrical Components and Circuits, including:

- Main Power Circuit Breaker
- 24 VDC Power Supply
- Variable VDC Power Supply
- 24 VAC Power Supply
- USB Port
- Δ V Potentiometer
- P/N Diodes
- Zener Diodes
- Light Emitting Diodes (LEDs)
- Half-Wave and Bridge Rectifiers
- Voltage Regulators and Resistors
- Capacitive, Inductive, and Combination Filters
- Bipolar Junction Transistors
- Semiconductors
- Solid State Relays
- Thermistors, Thermocouples, and Resistance Temperature Detectors (RTDs)
- Wheatstone Bridge
- Transistor and Operational Amplifiers
- Field Effect Transistors (FETs)
- Insulated-Gate Bipolar Transistors (IGBTs)
- Pulse Width Modulation (PWM) Control
- Silicon-Controlled Rectifiers (SCRs) and TRIAC
- TRIAC and SCR Phase Controls
- Switching Regulator
- Phase Shift Circuit
- Application Circuits:
 - Electronic Sensors
 - DC Motor
 - Pressure Assembly
 - Heater Assembly
 - Temperature Transmitter

Component Case

- Case
- Digital Multimeter
- Transmitter Display
- Bicycle Pump
- Signal Generator
- Electronic Sensor Set
 - Photoelectric Proximity Switch w/ Plate
 - Capacitive Proximity Switch w/ Plate
 - Inductive Proximity Switch w/ Plate
 - Hall Effect Switch w/ Plate
 - Ultrasonic Sensor w/ Plate

Target Set

- Steel
- Aluminum
- Hardwood
- Glass
- Poly

- Magnet
- Test Point Plug
- USB Cable
- Mini Banana Cable Set

FaultPro Electronic Fault Insertion Software

Multimedia Curriculum (M11128)

Instructor's Guide (C11128)

Installation Guide (D11128)

Student Reference Guide (H11128)

Additional Requirements:

- Oscilloscope
- Computer (Visit www.amatrol.com/support/computer-requirements for details.)

Utilities:

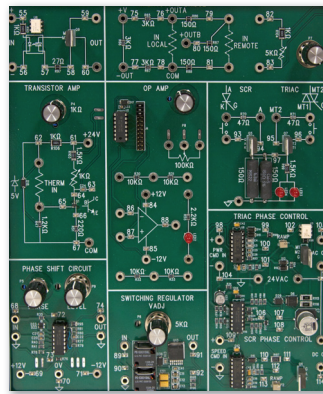
- Electricity: 100-240VAC/50-60Hz/1Ph

Learn Troubleshooting Skills that Technicians Need on the Job

The 990-ELE1 with FaultPro allows learners to troubleshoot real-world components and circuits at a system level. For example, the system includes 30 unique faults that present realistic situations that technicians encounter on the job, such as troubleshooting and regulating a power supply, an open-loop operational amplifier circuit, a pressure sensing device, and more! FaultPro's computer-based faults automatically track progress, enabling learners to gain troubleshooting skills in a self-paced environment that ensures that faults are inserted safely, protecting both learners and equipment.



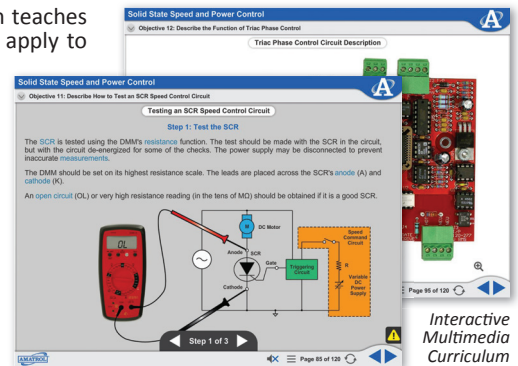
Gain Hands-On Experience with Industry-Standard Electrical Components and Circuits



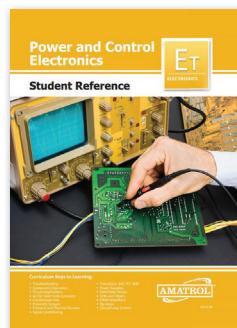
The 990-ELE1 features a wide variety of electrical components and circuits, including: AC and DC power supplies, Δ V potentiometer, thermocouples, resistive temperature detectors, thermistors, electronic sensors, solid state relays, transistor and operational amplifiers, field effect transistors, silicon-controlled rectifiers, triacs, and phase control circuits. These industry-standard components allow learners to understand how the equipment they're practicing with will be used to troubleshoot basic industrial circuits. Learners will also perform more than 60 hands-on skills, such as testing the output of a current limiter, selecting a solid state relay, installing a capacitive proximity sensor, connecting two configurations of open-loop operational amplifier circuits, and designing a circuit that measures the level in a batch process.

Study the Modern Applications of Solid State Electronics with In-Depth Curriculum

The 990-ELE1's in-depth multimedia curriculum teaches the concepts of solid state electronics as they apply to modern applications, such as switching power supplies, analog and discrete sensing, solid state relays, transistors, PWM control, and variable speed motor control. Specifically, learners will study topics like the operation of a full-wave rectifier, the installation of a photoelectric sensor, and testing a triac relay circuit. The curriculum is presented in a highly-interactive, multimedia format that includes stunning 3D graphics and videos, voiceovers of all text, and interactive quizzes and exercises.



Interactive
Multimedia
Curriculum



Student Reference Guide

A sample copy of the Power and Control Electronics Student Reference Guide is also included with the system for your evaluation. Sourced from the system's curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfectly-bound book. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training, making it the perfect course takeaway.

