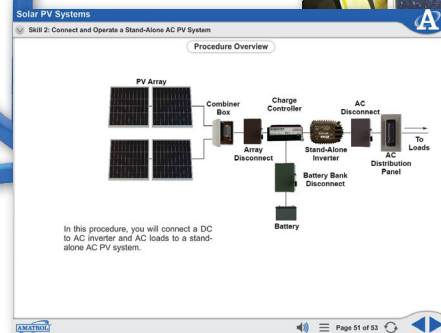
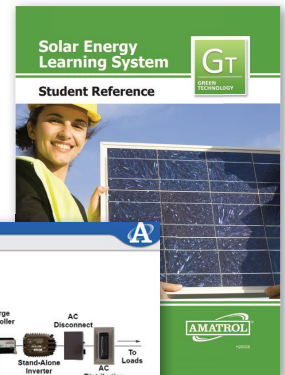


Alternative Energy Learning System – Solar

850-AES



850-AES



Interactive Multimedia Curriculum and Student Reference Guide

Learning Topics:

- Photovoltaic Module Operation
- Current-Voltage Characteristics
- Photovoltaic Module Performance
- Environmental Effects
- Photovoltaic Arrays
- Solar Batteries
- Solar Battery Charging
- Charge Controller Operation
- Solar Photovoltaic Systems
- Inverters

Amatrol's Alternative Energy Learning System – Solar (850-AES) teaches aspiring solar technicians the knowledge and skills they need to prepare for portions of the solar certifications offered by such certifying groups as NABCEP (North American Board of Certified Energy Practitioners) and ETA (Electronics Technicians Association). The demand for qualified solar technicians continues to rise, as consumers and businesses turn to solar energy in their communities.

The 850-AES includes a mobile workstation with real-world solar components. The interactive curriculum teaches vital, hands-on skills necessary for career success, such as system connection, operation, and programming of solar PV (photovoltaic) systems in commercial and residential applications. To complete the system, users must add a Solar PV Array Station (85-SPA1) (or an equivalent station with an input power range of 43-200W) and a Solar PV Sun Simulator (85-SPS1).



Technical Data

Complete technical specifications available upon request.

Mobile Workstation

Solar Component Circuit Panel

- MPPT-Type Charge Controller
- Combiner Box
- 80A DC Ground Fault Protector
- Disconnect Switches with Circuit Breaker (2)
- Variable Load Control for Solar Array

Central Component Circuit Panel

- Single-Phase Inverter
- Analog Utility Power Meter
- AC Load Center with Circuit Breakers
- DC Distribution Section
- Battery Disconnect Switch
- Clamp-on Multimeter
- Watt Meter
- Analog DC Ammeters (2)
- Remote Monitor LCD Display w/ Ethernet Connection
- AC & DC Lamps (3 each)
- AC & DC Lamp Holders (2 each)
- AC & DC Load Switches (2 each)
- Dual AC Receptacle
- AC & DC Disconnect Switches

PV Array Connector

Lockout/Tagout Kit

Lights Kit

Regular Banana Lead Set (20321)

RJ-11 Crossover Cable

PC Meter Bus Adapter

USB to DB9 Serial RS232 Adapter

Multimedia Curriculum (M20028)

Instructor's Guide (C20028)

Installation Guide (D20028)

Student Reference Guide (H20028)

Additional Requirements:

Solar PV Array Station (85-SPA1) (or customer-supplied equivalent w/ 43-200W input power range)

Solar PV Sun Simulator (85-SPS1)

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

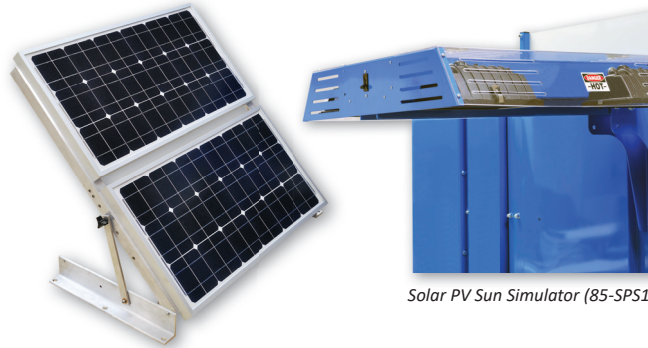
Utilities Required:

Electricity: 120V/60Hz/1 phase

Utility System Grid Interface (supplied by customer for full functionality)

Real-World Components and Convenient Indoor/Outdoor Use

Amatrol's Alternative Energy Learning System – Solar features real-world components that allow learners to build job-ready skills useful in both commercial and residential settings. For example, a combiner box with a multiple-panel solar array allows learners to connect panels in series and parallel, while an MPPT charge controller allows programming and communications from an LCD panel.



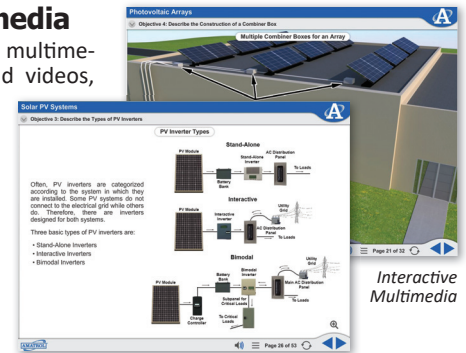
Solar PV Sun Simulator (85-SPS1)

Solar PV Array Station (85-SPA1)

The system's solar circuits can also be used either indoors with a sun simulator or outdoors via a detachable solar panel array or client-supplied external solar source. The 850-AES can also be connected to client-supplied roof-top solar panels with the addition of optional interface connections.

Engaging, Highly-Interactive Multimedia

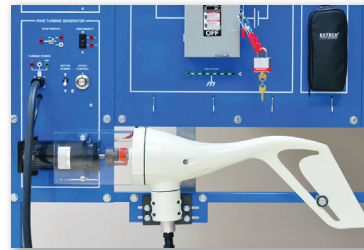
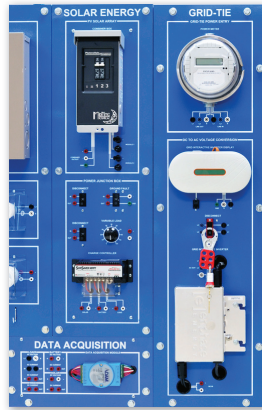
Amatrol's curriculum features a highly-interactive, multimedia format that includes stunning 3D graphics and videos, voiceovers of all text, and interactive quizzes and exercises designed to appeal to learners with different learning styles. The 850-AES curriculum teaches learners about photovoltaic modules and arrays, solar batteries, and solar photovoltaic systems. For example, learners will study solar battery charging and gain experience connecting a charge controller and adjusting its settings. The combination of theoretical knowledge and hands-on skills solidifies understanding and creates a strong basis for pursuing more advanced skills.



Interactive Multimedia

Expand Your System for Additional Learning Opportunities

The 850-AES offers additional learning opportunities through optional learning systems, such as a Wind Energy Learning System (85-WE), Data Acquisition Learning System (85-ADA1), and Grid-Tie Learning System (85-GT1). Each option features its own hardware and additional curriculum.



Optional Wind Energy, Data Acquisition, and Grid-Tie Learning Systems

Student Reference Guide

A sample copy of the Solar Energy Learning System 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.

