# Wind Energy Source (RWAC-3)

## Alternative Energy

**Wind Energy Source** enables students to learn to install, maintain and troubleshoot wind turbine power systems.

The **Wind Energy Source** package can be implemented stand-alone, or as an optional supplement to the Greystone Residential Wiring (RWAC-1) trainer. This option adds the ability to generate power from a wind turbine.

The included Student Study Guide lays a solid foundation in the theory and concepts involved in alternative energy as well as guiding students step by step through hands-on lab activities with the trainer equipment.

*Wind turbine shown installed on the optional Residential Wiring And Controls (RWAC-1) training system, sold separately. RWAC-1 available in North American markets only.*

GREYSTONE

Industrial Maintenance Program®

## In-Demand Green-Tech Skills!

Demand is high for skilled workers in the ***green technology sector!*** Industries involved in harnessing renewable energy sources, conserving natural resources & reducing pollution face a shortage of qualified entry-level candidates possessing critical skills.

These jobs identified as "in-demand" by the Bureau of Labor Statistics include ***solar photovoltaic*** (PV) system installers, ***wind-turbine*** technicians and ***clean-energy*** production technicians.

***Greystone Alternative Energy training systems provide the critical skills needed to fill this demand!***

The Greystone line of training systems offers an all-in-one solution for your mechatronics and industrial maintenance lab! Durable lab equipment and rigorous courseware combine to deliver all you need for your secondary or post-secondary career and technology education program.

These robust, versatile training stations allow for in-depth training in small spaces. From desktop trainers to mobile training stations, Greystone stations feature industrial-grade components incorporated into rugged aluminum framework. All trainers include skill-based curriculum with emphasis on operating theory, installation, maintenance, and troubleshooting.

Give your trainees and students the advantage of working with the same equipment they will encounter in industry. Choose Greystone training systems!

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# Wind Energy Source Specifications

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## Order # 10-RWAC-0003

- Wind Turbine
  - Dimensions 24" L x 15.7" W x 7.5"H
  - Material: Cast aluminum
  - Blade Material: Carbon fiber composite
  - Blade Diameter: 46.1"
  - Blade Size: 21"
  - Rotor Size: 25'
  - Speed (MPH): Starts at 8.5
  - Volts: 24 DC
  - Watts: 400
  - Overspeed/Overcrank shutdown
    Electronic torque control
- Turbine tripod
- Turbine power cable
- Lamp kit:
  - 150W, 120v, 60 Hz Clamp Light
  - 45W CFL bulb
  - 8W LED bulb
  - 40W Incandescent bulb
  - 75W Incandescent bulb
  - 150W Incandescent bulb

- AGM lead acid battery
- 120V 60Hz 2A battery charger
- Flexponent™ panel:
  - E158: Alternative Energy Distribution Panel
- Student study guide
- Installation guide

## Course Outline

| | |
|---|---|
| Activity 1 | Wind Power Theory and Panel Assembly |
| Activity 2 | Wind Panel Troubleshooting |
| Activity 3 | Wind Power Generation and Monitoring |
| Activity 4 | Simulated Power Generation and Monitoring |
| Activity 5 | Connection to RWAC-1 |

### *Wind Energy Source package features:*

The Wind Turbine is an easy-to-use solution for producing supplemental energy. It can be connected directly to a 12V battery and inverter, producing usable power.

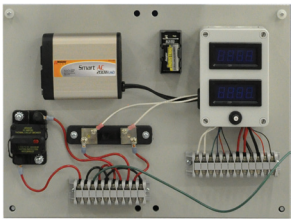
- 21" carbon fiber composite blades begin to produce electricity at wind speeds of 8.5 MPH
- MPPT turbine controller delivers 92–97% efficiency
- Rugged yet lightweight cast aluminum construction
- Includes electronic torque control


## Panel Specifications

*All included Flexponent™ panels meet the following specifications:*

| | | |
|---|---|---|
| Construction: | 3/8" (9.5 mm) thick environmentally stabilized, chemically resistant, non-conductive, high density polyethylene. | |
| Terminal strips | Industry-standard recessed and insulated fasteners rated for 50-amps at 600 volts. | |
| Dimensions | Double-wide | 16"W x 11.5"H x 0.375"D (406 mm x 292 mm x 9.525 mm) |

### Panel E158: Alternative Energy Distribution



Panel type: Double

| | |
|---|---|
| 1 | 50A Breaker and Disconnect |
| 1 | 200W Power Inverter |
| 1 | 9V Battery |
| 1 | 0V-20V Voltmeter |
| 1 | 50A Ammeter |
| 1 | 0A-50A Current Shunt |

**Make Greystone Training Systems part of a comprehensive STEM program!**

Add virtual, hardware-based or blended learning labs to deliver in-depth Industrial Maintenance, Mechatronics and Advanced Manufacturing and Agricultural programs.

Affiliated with: AMT The Association For Manufacturing Technology, SkillsUSA, NTMA Precision, CASE Curriculum for Agricultural Science Education

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