ET 255.04
Wind power plant

The illustration shows a similar unit

Description

- **wind turbine with integrated voltage converter for use with ET 255**
- **easy installation with removable supports and collapsible mast**

The ET 255.04 wind turbine converts wind into a rotary motion. A generator is then used to convert this rotational movement into electricity. The generator is a three-phase, brushless permanent magnet generator. To prevent damage due to rotor overspeed under irregular operating conditions, the wind turbine is equipped with an emergency stop switch as a safety device.

The ET 255.04 wind turbine is designed for use with the ET 255 energy system. The connection is established via an integrated rectifier with a built-in voltage converter and charge controller.

The microprocessor-controlled electronics in the rectifier are used to optimise power generation capacity. The battery from ET 255 can be charged using the charge controller.

In order study the combined use of solar and wind energy, ET 255.04 and ET 255 are combined with the photovoltaic modules of ET 255.02 or the photovoltaic simulator ET 255.01.

Measured values for wind speed, current and voltage at the output of the generator are monitored and transmitted to the GUNT software in ET 255. The GUNT software in ET 255 is network-compatible and enables experiments to be monitored, recorded and analysed at any number of workstations via the customer's own network.

Learning objectives/experiments

- combination of wind and solar energy
- relationships between the operating parameters
- influences on the characteristic performance
- recording and visualisation of all relevant characteristics
- calculation of relevant parameters

Specification

[1] wind turbine for converting kinetic wind energy into electrical energy
[2] electrical adaptation of the wind turbine for operation with ET 255
[3] combination of wind and solar energy with ET 255, ET 255.02 or ET 255.01
[4] integrated rectifier for optimising performance and charging the battery of ET 255
[5] emergency stop switch to prevent damage due to rotor overspeed
[6] removable supports and collapsible mast
[7] data acquisition and display of measurement data via GUNT software included in ET 255; data transmission via Modbus

Technical data

Wind turbine, rotor diameter: 1,17m
- startup wind speed: 3,6m/s
- output voltage: 48V
- electrical output: 320W at 10m/s
- charging current: max. 8A
- operating temperature: -10...70°C

Measuring ranges
- voltage: 0...54V
- current: 0...10A
- wind velocity: 0,8...50m/s

LxWxH: 3500x3500x5600mm
Weight: approx. 340kg

Required for operation

ET 255

Scope of delivery

1 wind turbine
1 set of instructional material

ET 255.04

Wind power plant

Required accessories

ET 255	Energy system for solar and wind power

Optional accessories

ET 255.01	Photovoltaic simulator
ET 255.02	Photovoltaic modules
ET 255.03	Consumers