Studying the conversion of renewable energy

NEW

ref. CONVERTYS

ref. CHARGEOL

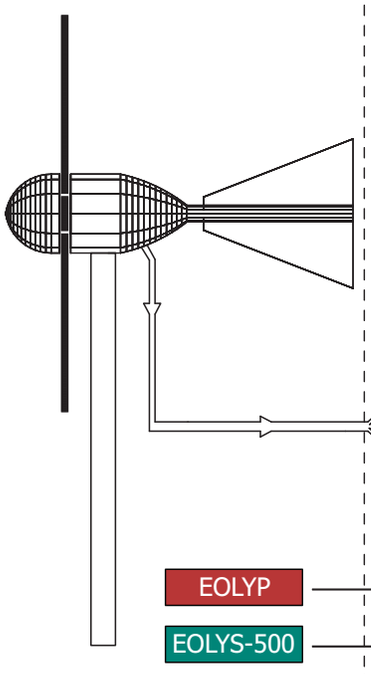
These converters operate on the same principle as an industrial model.
They treat the electrical power supplied by a wind turbine.
The output cannot be synchronized with the network
but can be used in isolated site.
Compatibility (see the diagram below):
CONVERTYS is compatible with the EOLYP.
CHARGEOL is compatible with the EOLYS-500.

OPERATING PRINCIPLE

The three-phase voltage supplied by the wind turbine is galvanically separated by isolation transformer, then rectified by a Graetz bridge. This DC voltage is converted using a DC/AC converter to an AC voltage 230V 50Hz / 500VA. Should this power be exceeded, the converter instantly offloads the output, lights an overload indicator lamp, and re-starts 15 seconds after load reduction.

TECHNICAL CHARACTERISTICS

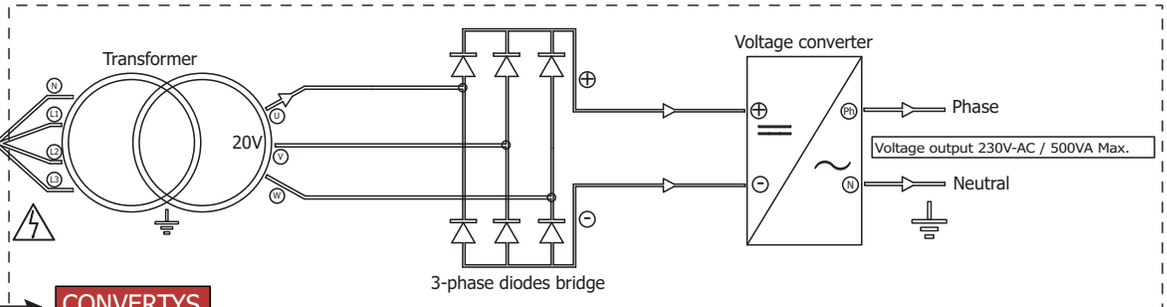
- The converter's synoptic, printed on the front, facilitates location of the components and measurement points.
- The three-phase voltage from the wind turbine is applied to CONVERTYS or CHARGEOL through 4 safety terminals 4mm dia. The wind turbine-to-converter interconnection is made using laboratory leads.
  CONVERTYS : Inputs between 375 and 460V three-phase.
  CHARGEOL : Inputs between 50 and 110V three-phase.
- A main switch located on the top of the box, starts and stops the converter's power supply.
- Safety terminals 4mm diam. located between each component enable the voltages and currents to be measured at each conversion step.
- A magneto-thermal circuit-breaker protects the transformer primary against any overload.
- Output converter 500W/230V.
- A differential circuit-breaker 30mA protects the output to the use network cabled according to neutral system TT.
- Unit on casters dimensions: 600x450mm. Height 530mm



CONVERTYS IS SPECIALLY MADE TO WORK WITH EOLYP
CHARGEOL IS SPECIALLY MADE TO WORK WITH EOLYS-500

List of Practical Works achievable with each set:

- Achievement of the wiring diagram of the voltage conversion chain.
- Research and calculation of the characteristics of each component.
- Measurement of electrical quantities at various points of the conversion chain.
- Calculation of the efficiency of the set



EOLYP → CONVERTYS

EOLYS-500 → CHARGEOL

The different electrical protections are not shown on the drawing