



RENEWABLE ENERGIES



With this kit the students
can perform more than

6 experiments

Who is it for?

- Technicians in RE systems.
- Electrical Technicians in Environmental Technology.



DL HYDRO-L HYDROPOWER KIT

Hydropower, also known as hydroelectric power, is a renewable energy source that generates electricity by harnessing the kinetic energy of flowing water. It has been used for centuries, from ancient watermills to modern hydroelectric plants and it became a key player in the transition to sustainable energy.

The water that flows through a pipe, spins the blades of a turbine which is connected to a generator that converts the mechanical energy into electrical energy. The latter is then fed into the electrical grid to power homes, businesses, and industries.

It has many benefits such as:

- **Renewable**, it relies on the natural water cycle, making it a sustainable energy source,
- **Low Emissions**, it does not produce direct carbon dioxide or other pollutants,
- **Consistent Power**, it provides a relatively stable and consistent source of electricity.

This proposed kit **DL HYDRO-L**, besides qualitative experiments as introduction into the topic hydropower usage for high school students and basic experiments in technical training, offers fundamental quantitative experiments on the physics of water turbines. It is therefore equipped with different types of turbines, from a simple water wheel to a modern, highly efficient Pelton turbine.



The kit is composed of the following components:

- 1x Water turbine casing,
- 1x Turbines set,
- 1x Manometer set/2 bar,
- 1x Manometer set/4 bar,
- 1x Intake connector,
- 1x Flow set/4 mm,
- 1x Flow set/8 mm,
- 1x Flow set/12 mm,
- 1x Induction generator/12 fold,
- 1x AV-Module,
- 1x Light bulb module,
- 1x LED-module 2mA/red,
- 1x Buzzer module,
- 1x Motor module without gear,
- 1x Base unit Large,
- 1x Resistor module,
- 1x Flow box,
- 1x Color discs/Set 1,
- 1x Connection set,
- 1x Aluminium case professional,
- 1x Water flow meter,
- 2x Hose clamp,
- 1x Info sheet initial startup,
- 0.2x Flexible hose 12/18mm,
- 1x Hose clamp with swivel head and hexagon screw, stainless steel,
- 1x Container box 6 L,
- 1x Insert Hydropower,
- 1x Test lead, 25cm/black,
- 1x Test lead, 25cm/red,
- 1x Test lead, 50cm/black,
- 1x Test lead, 50cm/red.

With this kit, the students can perform the following experiments:

- Volume flow as a function of the height of fall and of the pipe cross-section,
- Flow velocity as a function of the height of fall and of the pipe cross-section,
- Power as a function of the height of fall and of the pipe cross-section,
- Comparison of the functionality of Pelton turbine, crossflow turbine and waterwheel,
- Comparison of the performance of the Pelton turbine, crossflow turbine and waterwheel in dependence to the volume flow and pressure.

Supplied complete with all the necessary accessories and a detailed manual.