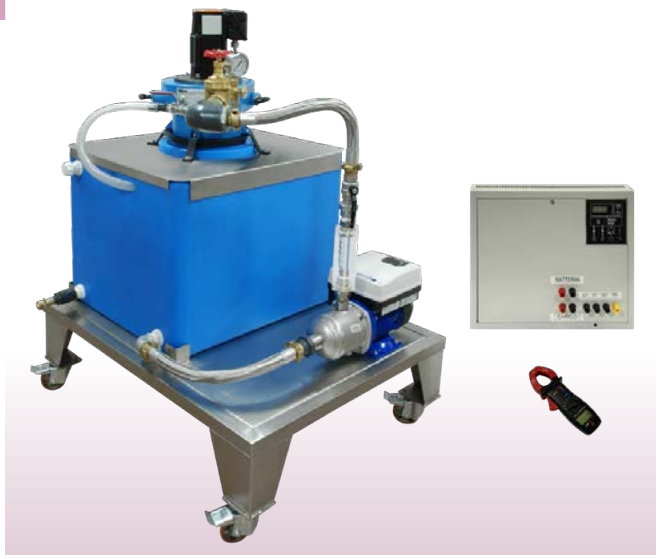
HYDROELECTRIC ENERGY GENERATION KIT

Mod. WPP-K/EV

INTRODUCTION

This equipment, expressly designed for educational purposes, is an example of use of a Pelton hydraulic turbine for the production of electric power in mini plants driven by small streams.



TRAINING PROGRAM

- Study of hydroelectric power
- Power as function of water flow rate and difference in height of the hydraulic pipe
- Head losses
- Electric power output
- Plant efficiency

TECHNICAL SPECIFICATIONS

Mini hydroelectric plant mounted on castors

- Turbine-generator set:
  - stainless steel Pelton turbine
  - 6-jet distributor, 3 of which can be externally intercepted
  - permanent magnets synchronous generator
  - rated voltage: 25 Vac three phase
  - frequency: 200 Hz
  - nominal electric power output: 0,5 kW (height 30 m, flow rate 3 l/s)
  - generator speed: 3000 rpm
  - Ø 4 mm safety holes for connection to portable rheostat *PRH-3* (**optional item** – refer to the end of this data sheet)
- AISI 304 stainless steel horizontal axis multistage monoblock pump:
  - power: 0,75 kW
  - maximum flow rate: 10 m^3/h
  - maximum head: 43 m
  - frequency converter for rpm adjustment
- Water tank
- Flow meter, pressure gauge and gate valve on the pump discharge line

Controller

- Rectifier
- Air dissipation system
- Digital voltmeter for the DC parameters
- Digital ammeter for the DC parameters
- Ø 4 mm safety holes for connection to the generator, to the lamp *DCL24V* (**optional item** - refer to the end of this data sheet) and to the battery pack *SOLBA* (**optional item** - refer to the end of this data sheet)

Clamp meter

- Voltage range (ac/dc): 0 to 600 V
- Current range (ac/dc): 0 to 200 A

Power supply: 230 Vac 50 Hz single-phase - 1000 VA
(Other voltage and frequency on request)

Dimensions: 80 x 100 x 128 cm

Control panel dimensions: 80 x 40 x 60 cm

Net weight: 100 kg

SUPPLIED WITH

THEORETICAL-EXPERIMENTAL HANDBOOK

OPTIONAL (REF. ACCESS. AND INSTRUMENTS)

PORTABLE RHEOSTAT Mod. PRH-3
To draw the external characteristic curve of the generator

BATTERY PACK Mod. SOLBA
To store the generated electricity

LAMP Mod. DCL24V
To be used as 24 Vdc electric load

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