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Product Name :
Kaplan Turbine Trainer

Product Code :
LBNY-0005-10300088



Description :

The Kaplan turbine is a reaction turbine with an axial through flow. It has a high specific speed and is suitable for large water flows and small to medium heads. Water turbines are turbo machines which convert water energy into mechanical energy. Mostly, they are used for driving generators for power generation purposes. Therefore, the Kaplan turbine is used as a "classic" water turbine in run-of-the-river power stations. The helps to investigate the characteristic behaviour of a simple-regulated Kaplan turbine during operation. The turbine is loaded with a wear-free eddy current brake. The speed is captured by means of an inductive, non-contact position sensor at the turbine shaft. For determining the turbine power, the eddy current brake is equipped with a force sensor for torque measurement. The trainer is provided with a closed water circuit with tank, submersible pump and throttle valve for adjusting the flow rate. The angle of incidence and thus the power output of the impeller are changed by adjusting the guide vanes.

Technical Specification :

Adjustable guide vanes for setting different angles of incidence
Function of a Kaplan turbine
Loading the turbine by use of air-cooled eddy current brake
Impeller with fixed vanes
Non-contact speed measurement at the turbine shaft and force sensor at the brake for measuring the torque
Adjustment of flow rate with throttle valve
Closed water circuit with submersible pump, throttle valve and tank.

Technical Data:

Kaplan turbine

Max. speed: 3700min-1
Max. Output: 1000W
Control wheel
External diameter: 120mm, internal diameter: 60mm, pitch: 80mm
Impeller, 4 vanes, fixed
8 Guide vanes, adjustable: -15...45
External diameter: 120mm, internal diameter: 60mm
Submersible pump with motor
Tank: 590L
Max. Pump head: 11m
Nominal power: 3,1kW
Max. Flow rate: 250m/h
Measuring ranges
Flow rate: 13...200m/h
Torque: 0...10Nm
Temperature: 0...100C
Speed: 0...6500min-1
Pressure (at turbine outlet): -1...0,6bar rel.
Pressure (at turbine inlet): 0...1bar rel.
Dimensions and Weight
LxWxH: 1450x1150x1650mm
Weight: 270kg.



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