

Product Name :

Francis Turbine Trainer

Product Code :

SLE/MCE/46



Description :

Description:

- A centrifugal pump and a flow control valve for adjusting the inlet pressure.
- The transparent operating area of the turbine enables an optimal view of water flow, rotor and guide vanes during operation.
- By adjusting the guide vanes the angle of attack, the cross-section and thus the output of the turbine are changed. An asynchronous machine is used as a generator for loading the turbine.
- The generator is equipped with a pendulum bearing and with a force sensor to determine the torque.
- A pump with variable speed via frequency converter provides for an energy efficient operation.
- The measured values are displayed digitally and can be processed further on a PC.
- The speed of the turbine is recorded by means of an inductive, non-contact position sensor at the generator shaft.
- The pressures at the inlet and outlet of the turbine, the temperature and the flow rate are recorded by sensors.

Specification:

- **Hydraulic power:** 2,1kW at 1500min-1
- **Mechanical power:** approx. 1,4kW at 1500min-1
- **Rotor, D:** 165mm
- 8 blades, 8 guide vanes
- **Angle of attack adjustable:** 0...23°
- Centrifugal pump, multistage.

Variable speed:

- **Pump head:** 42m
- **Tank:** 550L
- **Power consumption:** 5,5kW
- **Max. Flow rate:** 900L/min
- Asynchronous machine as generator
- **Output:** 2,2kW at 1440min-1

Measuring ranges:

- **Temperature:** 0...100°C
- **Pressure (inlet):** ±1bar (turbine)
- **Pressure (outlet):** 0...6bar (turbine)
- **Flow rate:** 0...1000L/min
- **Torque:** 0...20Nm
- **Speed:** 0...3000min-1

Power supply:

- 0...2200W (generator)
- 400V, 50Hz, 3 phases
- 400V, 60Hz, 3 phases, 230V, 60Hz, 3 phases
- **Dimension:** 2350x1050x2050mm
- **Weight:** approx. 580kg

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