

Product Name :
Computerized Centrifugal Pump Trainer

Product Code :
NLAB-MECHANICALAB220014



Description :

Computerized Centrifugal Pump Trainer

Technical Specification :

The developed trainer includes a closed water circuit and a powerful, standard centrifugal pump. Standard pumps are built according to industrial standards. The standard defines rating schemes and key dimensions so that standard pumps from different manufacturers can be exchanged without replacing the piping and ground plate

A three-phase motor powers the centrifugal pump. The speed can be adjusted to the desired value with the frequency converter. An inductive, non-contact position encoder on the engine shaft records the speed. The drive motor is mounted in a pendulum bearing such that the drive torque can be measured with a force sensor and

the mechanical drive power can be determined.

Manometers display the pressure on the pump's inlet and outlet. The flow rate is measured with an electromagnetic flow rate sensor. The flow rate can also be determined by means of a differential pressure measurement on an orifice plate flow meter.

The speed, torque, and electrical power consumption of the pump and the flow rate are shown on a digital display on the switch cabinet.

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FEATURES

Principle of operation of a centrifugal pump

Closed water circuit

Recording of pump characteristics

Recording of system characteristics

Manometer at the inlet and outlet of the centrifugal pump

Determination of the flow rate by means of an electromagnetic flow rate sensor or an orifice plate flow meter and a differential pressure measurement

Calculation of efficiencies

SPECIFICATION

Centrifugal pump

Max. Flow rate: approx. 15m³/h

Max. Head: approx. 16m

Drive motor with variable speed

Power output: 1,1kW

Speed range: 0...2400min⁻¹

Tank volume: 96L

Measuring ranges

Pressure: 1x -0,6...0bar, 1x 0...2,5bar

Flow rate: 5...600L/min

Speed: 0...5000min⁻¹

Torque: 0...10Nm

Power consumption: 0...2,2kW

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