



MODULE FOR CENTRIFUGAL PUMP CHARACTERISTICS



DL DKB032

Pumps in a pipe system are used to convert mechanical energy into hydraulic energy; this additional energy allows a fluid to move when it is not possible by gravity and for example, to raise a fluid at a certain height above the pump or make it recycle in a closed system. In general, the main purpose of a pump in a system is to increase the total energy H .

The working principle of a centrifugal pump is based on the fluid inlet in the middle of the impeller, which blades conduct the fluid and thanks to the centrifugal force it is driven outward. At this point, the fluid is collected and contained by the pump casing which, thanks to its shape, drives the fluid to the outlet pipes or to another impelling stage.

This equipment allows the study of the characteristics of a pump working individually at different rotational speeds. This is made through a frequency inverter which adjusts the working speed according to each case of study. In addition, the flow control valve manages the pump operating mode in order to obtain experimental operating curves. These curves can be compared with those supplied by the manufacturer, as well as those obtained by mathematical calculation.

The flow measurements are made using volumetric hydraulic of the hydraulic bank (required), that is used also to study the relation between pressure loss and the fluid speed.

PERFORMABLE EXPERIMENTS

- Determine the characteristic curves of a pump at different working speeds.
- Height – flow volume (H - Q)



FLUID MECHANICS



TECHNICAL DATA

Pump characteristics:

- Maximum manometric head: 22 T.M.H
- Flow volume: 20 / 80l/min
- H: 21.9 T.M.H.
- Max. power: 370W
- Max. speed: 3,450 RPM

Pressure gauges:

- Bourdon manometer 0-60 T.H.M.
- Bourdon vacuum pressure gauge (-10) – 45 T.H.M.

Tank:

- Capacity: 250 liters

Variable frequency drive:

- Rated power: 0.37kW
- Output current: 2.2A
- Rated voltage: 110V
- Frequency: 60Hz

Requirements:

Hydraulic bench DL DKL014, not included in this item.

Single Phase Power Supply