The Measurement of Pipe and Local Friction Losses by Interactive Computer Program

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The purpose of this experiment is to measure flow rate, friction factor, Reynold number, velocity of fluid, pipe and local friction losses, K factor of some hydraulics components and it is developed computer program in according to the results of experiment for calculating some physical quantities.

It is used pressure transmitters, turbine type flow meter, magnetic linear transducer, data acquisition card, on the standard hydraulic experiment education set.

It is developed computer program to analyze the some quantities from receiving data from transmitters such us pressure differences, flow rate as mA and pulse. These signals are converted physical quantities for calculating Reynold number, flow rate, velocity of fluid (depends on the pipe diameter), fluid friction factor, pipe and local friction losses and K factor of some hydraulic components (flow control, pressure control, check valve, directional control valves).

This program is used interactively to teach and show the pipe and local friction losses which depends on the flow rate, diameter of pipe, viscosity of fluid on the computer laboratory.

The results of the experimental studies on process control laboratory is converted computer aided process control course by writing simple computer program.