FLOW METER BENCH

REFERENCE : MP83-B

Non contractual photo

SERVICE : 230 V, 50 HZ, 500 W CLEAN WATER: 4 BAR, 20 ° C, FOR FILLING.
WATER EVACUATION NEAR THE BENCH FOR EMPTYING
DIMENSIONS : 2300 X 650 X 1800 MM

This bench allows the study of industrial flow meters by comparing their measurement technique and their accuracy.

A centrifugal pump draws a non-compressible fluid (water) from a buffer capacity; this fluid is distributed via a membrane regulating valve and a float flowmeter on two pipes on which different flow sensors are mounted: a vane flowmeter, an electromagnetic flowmeter, a vortex flowmeter on the one hand, VENTURI and a standard diaphragm on the other hand (these two pressure-reducing devices are connected to a differential pressure sensor). The circulating fluid in closed circuit is returned to the buffer capacity.
The device is mounted on a stainless steel chassis, equipped with six adjustable feet.

Educational Objectives :

Study of the implantation of the sensors :

- Study of the different cases of applications.
- Calibration of the sensors.
- Determination of sensor characteristic curves and their accuracy.

Technical specifications :

It's made of :

- A tank with emptying and racking.
- A centrifugal pump delivering, stainless steel, three-phase.
- A variable speed drive allows, according to a flow setpoint from one of the flowmeters to regulate the speed of the pump.
- A float flowmeter.
- A pipe with a selection valve comprising:
- A vane flowmeter (for low viscosity liquids): A plastic finned turbine rotates under the effect of flow. A detector transmits the speed of rotation, the electronics coupled to the sensor transforms the frequency into instantaneous flow.
- A vortex flowmeter: a body introduced into the fluid vein causes the appearance of vortices at the rear whose detachment frequency is proportional to the volumetric flow rate; Transmitter with 4 to 20 mA output and local display.

A pipe with a selection valve comprising :

VENTURI tube, DN25, in Altuglas with "U" pressure gauge and connection for differential pressure sensor,
One diaphragm, DN25, in Altuglas with "U" manometer and connection for differential pressure sensor,
A differential pressure sensor, output 4 to 20 mA connected to an

DELTALAB SMT - 425 Boulevard Joseph Gay Lussac - 11000 CARCASSONNE
Tel 04 68 24 50 70 - mail : info@deltalab.fr

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indicator with extraction of square root for determination of the flow.
A vertical pipe, with an electromagnetic flowmeter for conductive liquids: a voltage is induced in the fluid that is sensed by two measuring electrodes and the transducer determines the fluid velocity, transmitter with 4 to 20 mA output and local display.
An electrical box, waterproof IP 55, including:
A lockable disconnector,
A power-on LED,
Emergency stop,
A variable speed drive,
A 4-position selector for selecting the regulator input of a flow indicator (choice of measurement),

OPTIONS :

MP83 OP1: Endress and Hauser ultrasonic flowmeter MP83 OP2: Mass flow meter (Coriolis force)