

Product Name :
Fluid Science Flow Measurement

Product Code :
CHINAELABC3710002



Description :

Fluid Science Flow Measurement

Technical Specification :

Combined with the Fluid Science Service Unit, the Fluid Science Flow Measurement Tray, provide hands on experimentation designed to demonstrate flow measurement and the relationship between velocity and pressure drop.

Utilising the service unit the flow meters experiment rapidly mounts onto the multi functional work panel and is connected to the built-in water supply via quick connect couplings. Differential pressure reading is taken using a digital manometer against varying flow rates.

The tray includes the following flow meters:

Venturi Meter : Used to demonstrate Bernoulli's equation, showing how low pressure is generated in the throat of a venturi tube, and how this is affected by flow.

The flow recovery is also demonstrated by measuring the total pressure drop across the module.

The geometry of the venturi orifice is in accordance with standard industrial venturi flow meters, so the use of a venturi to measure flow can also be demonstrated.

Orifice plate The use of an orifice plate to measure flow is demonstrated by measuring the pressure drop across a defined orifice.

The geometry of the orifice is in accordance with standard industrial orifice flow meters.

Technical Specifications:

Types of flow measurement and its application

Explain the principles of a venturi meter and an orifice meter and why one is selected over the other in certain applications.

Pressure and velocity changes through a venturi meter

i.e. increased velocity results in reduced pressure

Energy transition in a venturi and orifice plate meter

Mechanical energy balance on a venturi meter

Compare pressure drop across the entrance and exit of the meter (i.e. P across entrance / throat and P across throat / exit) and explain results.

Explain the importance of discharge coefficient and calculate ideal flow rate across the both meters

Explain the term vena contracta, why it occurs in an orifice meter and its result (i.e. its permanent pressure)



Engineering Lab China