



## Flow Measurement Methods Apparatus (SMT-FM-20)

This unit contains different measuring instruments to determine the flow rate. These instruments are designed with PMMA and are Venturi meter, an orifice plate meter and a rotameter. Bernoulli's equation works for each meter. Eight tube manometers are used in order to determine the pressure distribution in the Venturi nozzle and in the orifice plate flow meter.

The experimental unit is positioned easily and securely on the work surface of the SMT-FM-100 base module. The water is supplied and the flow rate measured by SMT-FM-100. Alternatively, the experimental unit can be operated by the laboratory supply.

### TECHNICAL SPECIFICATIONS

#### Specifications:

- Measuring instruments: Venturi meter, orifice plate and rotameter
- 8 tube manometers to determine the pressure distribution in Venturi meter, orifice plate and rotameter
- Measurement of the total pressure with Pitot tube.
- Water supply using SMT-FM-100 base module.
- Acrylic Tubes and Acrylic Venturi Holdings.
- PVC Pipe Fittings.

#### Technical Data:

- Venturi nozzle:  $A=85$  to  $340\text{mm}^2$ .
  - Angle at the inlet:  $10.5^\circ$ .
  - Angle at the outlet:  $4^\circ$ .
- Orifice plate flow meter: diameter= $14\text{mm}$ .
- Measuring nozzle: diameter= $18.5\text{mm}$ .
- Rotameter: Max.  $1700\text{L/h}$ .
- 8 tube manometers:  $390\text{mmWC}$ .
- LxWxH:  $1100 \times 675 \times 900\text{mm}$ .
- Weight: Approx.  $25\text{kg}$ .

#### Experimental Data:

- Flow measurement with orifice plate flow meter and measuring nozzle, Venturi nozzle and rotameter
- Comparison of different instruments for flow measurement
- Calibrating measuring instruments

