TE6 Humidity Measurement Bench

Shows the principles of humidity measurement and compares different methods of measurement

- Shows how to measure and calculate the relative humidity (moisture content) of air
- Allows students to compare different humidity measuring instruments
- Includes an air filter to reduce the effects of air particles
- Includes mechanical and electronic instruments to measure temperature and humidity
- Variable flow rate fan to show the effect of air flow on humidity measurement
- Compact unit on a mobile frame for ease of use and storage

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TE6 Humidity Measurement Bench

Description

The Humidity Measurement Bench allows students to compare different methods of humidity measurement. It shows the differences in accuracy between instruments and their ease of use. It also includes a fan to show the effects of airflow on the different instruments.

A mobile frame holds a stainless steel duct and an electric fan. The main part is the stainless steel duct that contains a selection of instruments to measure humidity and temperature. A removable plastic window in the duct gives access for students to take readings and change instruments. A fan mounted underneath the duct supplies the duct with a flow of air. This allows students to study the effect of air flow on the instruments. A slide valve on the fan controls the airflow rate. An orifice plate and manometer measure the flow rate. An air filter in the airflow path stops dirt or other particles affecting the instruments.

The duct includes an extra port. It allows students to introduce low-pressure steam into the duct, to increase the range of experiments (steam generator not included).

Standard Features

- Supplied with comprehensive user guide
- Two-year warranty
- Manufactured in accordance with the latest European Union directives

Experiments

- Measurement of air flow rate in a duct
- Measurement of relative humidity using different types of instrumentation
- Comparison of measurement methods for accuracy and ease of use

Operating Conditions

Operating environment:
Laboratory environment

Storage temperature range:
–25°C to +55°C (when packed for transport)

Operating temperature range:
+5°C to +40°C

Operating relative humidity range:
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

Essential Services

Electrical supply:
240 VAC 50 Hz 1 A single-phase electrical supply **or**

110 VAC 60 Hz 2 A single-phase electrical supply (specify on order)

Floor space needed:
Approximately 1500 mm x 1000 mm

Specification

Nett dimensions and weight:
1200 x 1200 x 700 mm and 95 kg

Packed dimensions and weight:
1.35 m^3 and 115 kg

Instrumentation and sensors:
- Hair hygrometer
- Wet and dry bulb hygrometer
- Whirling hygrometer
- Thin film capacitive relative humidity sensor (complete with digital display)
- Thermistor temperature sensor (complete with digital display)

Maximum air flow rate:
110 litres/second

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