LAB ENGINEERING

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Product Name :	**Product Code :**
Computerized Steady State & Non Steady Heat Transfer	HEMT0005

Description :

Computerized Steady State & Non Steady Heat Transfer

Technical Specification :

The Heat conduction is the transport of heat between the individual molecules in solid, liquid and gaseous media under the influence of a temperature difference.
Steady heat conduction is the term used when heat transport is maintained permanently and uniformly by adding heat.
In transient heat conduction, the temperature distribution in the body is dependent on location and time.
The trainer consists of a heat source and a heat sink, between which cylindrical samples made of different metals are inserted.
Each sample is fitted with 12 temperature measurement points.
The temperature measurement points are designed to has as little influence on the temperature as possible and the core temperature of the sample is measured.
The heat source consists of an electrically heated hot water circuit.
An electronic controller ensures the heating water is kept at a constant temperature.
The heat sink is realized by means of a water-cooling system.
An elevated tank ensures a constant cooling water flow rate.
A temperature jump can be generated by appropriate regulation of the cooling water flow.
The temperatures of the sample, heating and cooling water, as well as the electrical heating power and the cooling water flow rate are displayed digitally on the switch cabinet and can be transmitted simultaneously via USB directly to a PC where they can be analyzed using the software included.
The thermal conductivity ? can be calculated from the measured data.
A PC can be used to display the transient temperature distribution in the sample over time and place.

FEATURES:
12 temperature measurement points in every sample
Calculate thermal conductivity ? of different metals
Steady heat conduction
Transient heat conduction
Temperature/time profiles
Steady and transient heat conduction in metals
Regulated temperature of the heat source
SPECIFICATION:
Heater :
Output: 800W
Temperature: 20…85°C
Samples, Ø 40mm
3x 450mm (copper, aluminum, brass)
2x 300mm (steel, stainless steel)
Heating tank: ca. 2L
Cooling tank: ca. 0,5L
Elevated tank: ca. 6L
Temperature sensors :
12x thermocouple type K, along the sample
2x Pt100, in the cooling water
1x Pt100, in the heating water
Measuring ranges :
Temperature: 14x 0…100°C
Power: 0…1000W
Flow rate: 0,1…2,5L/min
Required for Operation :
230V, 50Hz, 1 phase
230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase