Computerized Heat Transfer through Composite Walls Apparatus (Product Code: HMTC07)



Features

- Extensive range of Experiments
- Comprehensive teaching manual
- Three-year warranty
- Esthetically designed and finished Rig.
- High Quality instrumentation
- To determine the temperature distribution across the width of the composite wall & overall thermal conductance.

Product Description

This apparatus enables the student to study the characteristics of composite structures and its heat transfer ability across the composite walls by altering the combination of slabs. The apparatus consists of three slabs of different materials of same thickness. The slabs are brought together in contact. The three slabs are brass, M.S and asbestos. One surface of the slab is electrically heated and the other end is cooled, .the temperatures of the slabs are measured using thermocouples and are indicated by temperature indicator. The power Input to the heater is measured by Voltmeter and Ammeter.

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Product / Component Specification

Slab	6mm thick, 150mm Dia
Slab material	MS, Brass & Asbestos
Mica heater	250watts
Variac	2 amps
Digital voltmeter	0-300 volts AC
Digital ammeter	0-5 Amps AC
Digital temperature	0-300 Deg (K Type)
Thermocouple	K type
Insulation material	Glass wool
Measuring tank	1 liters (plastic)
Stop watch	Digital

Data Acquisition card

Analog Input	
Differential Channels	12
Resolution	12 bits
Sample Rate	200 Ks/s
Max Voltage	5 V
Number of Ranges	4
Simultaneous Sampling	Yes
On-Board Memory	5120 samples
Analog Output	
Channels	2
Digital I/O	
Input-Only Channels	30
Output-Only Channels	12
Timing	Software
Logic Levels	TTL
Maximum Input Range	0 V - 5V
Maximum Output Range	0 V - 3.3 V
Counter/Timers	
Counters	2
Max Source Frequency	84 MHz
Resolution	12 bits
Logic Levels	TTL
Total DC output Current on all I/O lines	130mA

Measurement of Temperatures at different points

Type Range Signal conditioning/transmitter Location Qty	"K" 0-300°C Standalone Inlet Steel bottom Temperature 3 no's
Type Range Signal conditioning/transmitter Location Qty	"K" 0-300°C Standalone Aspirates bottom Temperature 3 no's
Type Range Signal conditioning/transmitter Location Qty	"K" 0-300°C Standalone Aspirates top Temperature 3 no's
Type Range Signal conditioning/transmitter Location Qty	"K" 0-300°C Standalone Brass top surface Temperature 3 no's
Type Range Signal conditioning/transmitter Location Qty	"K" 0-300°C Standalone Water inlet Temperature 1 no's
Type Range Signal conditioning/transmitter Location Qty	"K" 0-300°C Standalone Water outlet Temperature 1 no's

Measurement of Voltage & Current

Type Range Signal conditioning/transmitter	Voltage Transducer 0-300V Standalone
Type Range Signal conditioning/transmitter	Current Transducer 0-10Amps Standalone

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