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Product Name :

Thermoelectric Effects Apparatus

Product Code :

SLE/H/14

Science Lab
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Description :

The Thermoelectric Effects Apparatus is designed for 2 types of investigations:
Investigating the thermal characteristics and measuring techniques of 3 devices commonly used for industrial and technical thermometry.
The instruction manual contains sample activities and sample data.

Specifications:
Heater Supply: Regulated Voltage Source: 0- to 36-V DC, 10-turn potentiometer control
Digital Current Display: 0.000 to 1.999 A
Cooling Fan: 12-V DC, 0.14 A, on/off switch control
Digital Controller: Configurable for P, PI, PD, or PID mode
Process Value (PV) Range: 0 to 400° C (factory default—settable)
PV Temperature Display: 4-digit, resolution 1° C or 0.1° C
SV Temperature Display: 4-digit, resolution matches PV

24 settable parameters
2 parameters determined by apparatus configuration
Power Input: 110-V AC, 60 Hz, 65 W
Fuse: Miniature type, 5 x 20 mm, F1.5 A, 250 V
Dimensions: Oven: 13 cm H x 35 cm W x 31 cm D
Brass Heating Block: 40 mm diam x 67 mm H
Weight: 5.2 kg (11-1/2 lb)

Thermocouple (K-type, Chromel-Alumel)
Chromel: Ni, 90%; Cr, 10%
Alumel: Ni, 95%; Mn, 2%; Al, 2%; Si, 1%

The thermocouple generates approximately 4 mV for a temperature difference of 100° C between the hot and cold junctions.
Measurement of the output between room temperature and 100° C can conveniently be made using a digital multimeter with a resolution of 0.01 mV or an appropriate data logger.
The temperature of the ice water should be measured before and after the experiment using independent means, such as a thermometer or temperature probe.