



# TCS-100

## Temperature Calibration System

### PRECISION CURRENT SOURCE/VOLTMETER/TEMPERATURE MONITORING COMBINATION SPEEDS CALIBRATION

#### DESCRIPTION

The TCS-100 is specifically designed to simplify the gathering of data for K Factor calibration of diodes used as temperature sensors. The system contains a precision current source for supplying  $I_M$ , a voltmeter for measuring  $V_M$ , and a Type-T thermocouple measurement for monitoring the environment temperature. A 36-pin rear-panel mounted connector provides full Kelvin connection for up to 16 devices. Each device under test is selected by front-panel push button.

The internal precision  $I_M$  current source provides four preset current values of 0.1, 1, 10 and 100 mA. A dual range variable current setting capability provides for operator-controlled current values over the full range of 0.1 to 100 mA. Voltage compliance is greater than 5 V with open circuit indication via flashing channel indicator. The internal voltage measurement circuit provides a  $4\frac{1}{2}$  digit display with mV resolution for any of the selected 16 device channels. The temperature measurement display provides 0.1 °C resolution for accurate temperature differential measurements.



Three operating modes are built into the system. In the Manual Mode, any of the 16 device channels can be selected for continuous monitoring. In the Scan Mode, selected by front panel push button switch, all 16 device channels are sequentially scanned at the rate of two seconds per channel with rollover after the 16th channel. The Scan/Print Mode, activated by depressing both the Scan and Print push buttons, provides a printout of the scanned results if a printer is connected to the system. A fourth Serial Mode is optionally available for connection to a computer serial port; this mode transmits the scanned data to the computer upon computer command.

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Specifications subject to change without notice.

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## FEATURES

- **Self-contained for easy setup and operation**
- **Full Kelvin Connection for highest accuracy and repeatability**
- **4 ½ digit displays for high resolution**
- **Integrated Type-T thermocouple measurement circuitry simplifies setup**
- **Printer port interfaces to most printers for hardcopy data output**
- **Optional RS-232 serial interface for computer data collection and manipulation**

## SPECIFICATIONS

General	
# of devices	16 (up to 128-device capability available; please consult factory)
Connection Type	Full Kelvin (4-wire)
Current Source	
Range	4 fixed values - 0.1, 1, 10, & 100 mA 2 variable ranges - <0.01 to 10 mA & 1 to 100 mA
Setting Accuracy	0.1% of fs ±10 µA
Voltage compliance	≥5 V
Polarity	- or + to GND
Display	4½ digit, red
Setting	Coarse & Fine adjustments for Variable Ranges
Connector	½ of 36-contact "Champ" connector
Voltage Measure	
Range	0 to ±10 V
Resolution	0.001 V
Accuracy	0.01% of fs ±1 mV
Display	4½ digit, red
Connector	½ of 36-contact "Champ" connector
Temperature Measure	
Range	-100 to +400 °C
Resolution	0.1 °C
Accuracy	0.1% of fs ±1.4 °C
Display	4½ digit, red
Thermocouple	Type T
Connector	Miniature Jack (Omega NMP-T or equivalent)
Power Requirements	
Voltage	100, 120, 220, 240 VAC
Frequency	50/60 Hz
Current	0.75 A @ 100-120 VAC; 0.33 A @ 220-240 VAC

## ORDERING INFORMATION

Model Number	Description
<b>TCS-100</b>	<b>Base Unit</b>
<b>TCS-100-01</b>	<b>Serial Interface Option</b> Includes Firmware, Cable and computer Software for data collection from TCS-100