

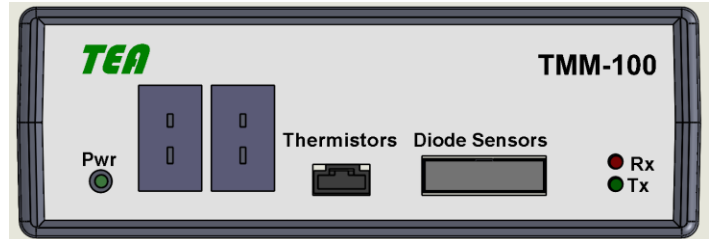


TMM-100 / TMM-200

Temperature Measurement Module (TMM)

DESCRIPTION

The TMM is designed to simplify the gathering of temperature data from Thermal Test Chip diode temperature sensors. The system contains a precision current source for supplying diode measurement current (I_M), voltmeter capability for diode measurement (V_M), and Type-T thermocouple and 10K Ω NTC thermistor measurement capability for monitoring the environment temperature. Front-panel mounted connectors provide connections for up to eight (TMM-100) or twenty (TMM-200) temperature sensing diodes, two thermocouples and two thermistors. Each temperature sensor is selected under software control.



The internal precision I_M current source provides 1.00mA current. Voltage compliance is 2V. The internal voltage measurement circuit provides measures to 1.999V with mV resolution for any of the selected diode temperature sensing channels. The diode voltage can be automatically converted to temperature readings through the software once the calibrated K constant is input into the program. The temperature measurement resolution of 0.1°C for all sensors provides for accurate temperature differential measurements.

An internal relay for control of environmental components under software control can be synchronized to the measurement scan.

The TMM is powered through its USB connection to a computer.

FEATURES

- **Self-contained for easy setup and operation**
- **8 diode channels (TMM-100); 20 diode channels (TMM-200)**
- **Millivolt diode voltage resolution**
- **Built-in diode voltage-to-temperature conversion**
- **USB connection for programming, and data logging**

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For reference only
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SPECIFICATIONS

Diode Current Source	
Measurement Current	1.00mA
Accuracy	0.1%
Voltage compliance	1.999V
Polarity	- or + to GND
Connection	Front Panel, IDC Ribbon Cable Connector
Diode Voltage Measurement	
Range	1.999V
Resolution	1mV
Accuracy	0.01% of fs $\pm$ 1 mV
Environmental Temperature Measurement (Thermocouple)	
Number of Channels	2
Type	T
Range	0 to +199°C
Resolution	0.1°C
Accuracy	0.1% of fs $\pm$ 1.4°C
Connector	Miniature Jack (Omega NMP-T or equivalent)
Environmental Temperature Measurement (Thermistor)	
Number of Channels	2
Type	10K Ω (nominal @25°C)
Operating Current	100 μ A
Range	0 to +199°C
Resolution	0.1°C
Accuracy	0.1% of fs $\pm$ 1.4°C
Connector	Front Panel (4-pin Molex Mini-Grid)
Power Indicator	
Type	LED
Color	Green
Data Indicator	
Type	LED
Tx Color	Green (TMM-100), yellow (TMM-200)
Rx Color	Red
Computer Connection	
Type	USB 2.0 or higher
Connector	Rear Panel, USB Type B
Relay Connection	
Configuration Type	Single Pole, Double Throw (SPDT)
Current Rating	1A max
Voltage Rating	50V max
Connector	Rear Panel (3-pin Molex Mini-Grid)

ORDERING INFORMATION

Model Number	Description
TMM-100	Base Unit (8 channels)
TMM-200	20 channels

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