

### TECHNICAL DATA



The R2815 Temperature Calibrator has been designed to source and measure 11 thermocouple types (A, B, C, D, E, J, K, N, R, S, T) and 5 RTD (3-wire) types, including Pt100, Pt200, Pt500, Pt1000, and Cu50. It also measures volts and ohms, with exceptional accuracy supported by internal cold junction compensation.

### Features

- Accurately sources and measures 11 thermocouple types, including A, B, C, D, E, J, K, N, R, S, T
- Supports 5 RTD (3-wire) types, including Pt100, Pt200, Pt500, Pt1000 and Cu50
- Source and measure Volts and Ohms
- Internal cold junction compensation for improved accuracy
- Easy to read 6-digit LCD display
- Zero adjustment button
- Built-in LED flashlight
- User selectable unit of measure (°F/°C)
- Low battery indicator and auto shut off
- Includes test leads, alligator clips, thermocouple adapter and batteries

### Specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Display                    | 6-Digit LCD                        |
| Backlit Display            | Yes                                |
| Kick Stand                 | Yes                                |
| Magnetic Hanger Compatible | Yes (R5900 sold separately)        |
| Built-In Flashlight        | Yes                                |
| Zero Adjustment Button     | Yes                                |
| Power Supply               | 3 AA Batteries                     |
| Battery Life               | Approx. 20 hours                   |
| Cold Junction Compensation | Yes                                |
| Auto shut off              | Yes (up to 60 minutes/off)         |
| Low Battery Indicator      | Yes                                |
| Replaceable Test Leads     | Yes                                |
| Product Certifications     | CE                                 |
| Operating Temperature      | 32 to 122°F (0 to 50°C)            |
| Operating Humidity Range   | 0 to 85%                           |
| Storage Temperature        | 14 to 122°F (-10 to 50°C)          |
| Dimensions                 | 7.5 x 3.5 x 2.1" (191 x 90 x 53mm) |
| Weight                     | 17.6oz (500g)                      |

*Continued...*

### Applications

- Ideal for calibrating devices that use thermocouples as input signals (e.g., meters, controllers, transmitters, data loggers, and recorders)
- Essential for applications requiring precise thermocouple temperature measurements, including:
  - Chemical production
  - Petroleum refineries
  - Manufacturing
  - Power production
  - Steel and iron industries

### TECHNICAL DATA

#### Measuring Function

| Output          | Range         | Measurement Range               | Resolution    | Accuracy              |
|-----------------|---------------|---------------------------------|---------------|-----------------------|
| DCV             | 100mV         | -110 to 110mV                   | 0.01mV        | 0.05% rdg.<br>+0.03mV |
|                 | 1V            | -1.1 to 1.1V                    | 0.0001V       | 0.05% rdg.<br>+0.3mV  |
|                 | 30V           | -30V to 30V                     | 0.001V        | 0.02% r dg.<br>+2mV   |
| TC              | A             | 0 to 2912°F (0 to 1600°C)       | 1°F (1°C)     | ±3.6°F (2.0°C)        |
|                 |               | 2912 to 3632°F (1600 to 2000°C) |               | ±4.0°F (2.2°C)        |
|                 |               | 3632 to 4532°F (2000 to 2500°C) |               | ±4.3°F (2.4°C)        |
|                 | B             | 1112 to 1472°F (600 to 800°C)   | 1°F (1°C)     | ±4.0°F (2.2°C)        |
|                 |               | 1472 to 1832°F (800 to 1000°C)  |               | ±3.2°F (1.8°C)        |
|                 |               | 1832 to 3308°F (1000 to 1820°C) |               | ±2.5°F (1.4°C)        |
|                 | C             | 0 to 2912°F (0 to 1600°C)       | 1°F (1°C)     | ±3.6°F (2.0°C)        |
|                 |               | 2912 to 3632°F (1600 to 2000°C) |               | ±4.0°F (2.2°C)        |
|                 |               | 3632 to 4190°F (2000 to 2310°C) |               | ±4.3°F (2.4°C)        |
|                 | D             | 0 to 212°F (0 to 100°C)         | 1°F (1°C)     | ±4.7°F (2.6°C)        |
|                 |               | 212 to 518°F (100 to 270°C)     |               | ±4.3°F (2.4°C)        |
|                 |               | 518 to 2192°F (270 to 1200°C)   |               | ±4.0°F (2.2°C)        |
|                 | E             | -58 to 32°F (-50 to 0°C)        | 0.1°F (0.1°C) | ±1.6°F (0.9°C)        |
|                 |               | 32 to 1832°F (0 to 1000°C)      |               | ±2.7°F (1.5°C)        |
|                 |               | -76 to 32°F (-60 to 0°C)        | 0.1°F (0.1°C) | ±1.8°F (1.0°C)        |
|                 | J             | 32 to 2192°F (0 to 1200°C)      |               | ±1.3°F (0.7°C)        |
|                 |               | -148 to 32°F (-100 to 0°C)      | 0.1°F (0.1°C) | ±2.1°F (1.2°C)        |
|                 |               | 32 to 2501.6°F (0 to 1372°C)    |               | ±1.4°F (0.8°C)        |
|                 | N             | -328 to 32°F (-200 to 0°C)      | 0.1°F (0.1°C) | ±2.7°F (1.5°C)        |
|                 |               | 32 to 2372°F (0 to 1300°C)      |               | ±1.6°F (0.9°C)        |
|                 |               | 0 to 3212.6°F (0 to 1767°C)     | 1°F (1°C)     | ±4.5°F (2.5°C)        |
|                 | S             | 0 to 3212.6°F (0 to 1767°C)     |               | ±3.6°F (2.0°C)        |
|                 |               | -148 to 32°F (-100 to 0°C)      | 0.1°F (0.1°C) | ±1.8°F (1.0°C)        |
|                 | T             | 32 to 752°F (0 to 400°C)        |               | ±1.3°F (0.7°C)        |
| RTD<br>(3-Wire) | Pt100<br>385  | -328 to 32°F (-200 to 0°C)      | 0.1°F (0.1°C) | ±0.9°F (0.5°C)        |
|                 |               | 32 to 752°F (0 to 400°C)        |               | ±1.3°F (0.7°C)        |
|                 |               | 752 to 1472°F (400 to 800°C)    |               | ±1.4°F (0.8°C)        |
|                 | Pt200<br>385  | -328 to 212°F (-200 to 100°C)   | 0.1°F (0.1°C) | ±1.4°F (0.8°C)        |
|                 |               | 212 to 572°F (100 to 300°C)     |               | ±1.6°F (0.9°C)        |
|                 |               | 572 to 1166°F (300 to 630°C)    |               | ±1.8°F (1.0°C)        |
|                 | Pt500<br>385  | -328 to 212°F (-200 to 100°C)   | 0.1°F (0.1°C) | ±0.7°F (0.4°C)        |
|                 |               | 212 to 572°F (100 to 300°C)     |               | ±0.9°F (0.5°C)        |
|                 |               | 572 to 1166°F (300 to 630°C)    |               | ±1.3°F (0.7°C)        |
|                 | Pt1000<br>385 | -328 to 212°F (-200 to 100°C)   | 0.1°F (0.1°C) | ±0.5°F (0.3°C)        |
|                 |               | 212 to 572°F (100 to 300°C)     |               | ±0.9°F (0.5°C)        |
|                 |               | 572 to 1166°F (300 to 630°C)    |               | ±1.3°F (0.7°C)        |
|                 | Cu50          | -58 to 302°F (-50 to 150°C)     | 0.1°F (0.1°C) | ±1.3°F (0.7°C)        |

#### Source Function

| Output          | Range         | Measurement Range                 | Resolution    | Accuracy              |
|-----------------|---------------|-----------------------------------|---------------|-----------------------|
| DCV             | 100mV         | -10 to 110mV                      | 0.01mV        | 0.05% rdg.<br>+0.03mV |
|                 | 1V            | -0.1 to 1.1V                      | 0.0001V       | 0.05% rdg.<br>+0.3mV  |
| OHM             | 400Ω          | 0 to 400Ω                         | 0.1Ω          | 0.05% rdg.<br>+0.2Ω   |
|                 | 4KΩ           | 0 to 4KΩ                          | 1Ω            | 0.05% rdg.<br>+2Ω     |
| TC              | A             | 0 to 2912°F (0 to 1600°C)         | 1°F (1°C)     | ±3.6°F (2.0°C)        |
|                 |               | 2912 to 3632°F (1600 to 2000°C)   |               | ±4.0°F (2.2°C)        |
|                 |               | 3632 to 4532°F (2000 to 2500°C)   |               | ±4.3°F (2.4°C)        |
|                 | B             | 1112 to 1472°F (600 to 800°C)     | 1°F (1°C)     | ±2.7°F (1.5°C)        |
|                 |               | 1472 to 3308°F (800 to 1820°C)    |               | ±2.0°F (1.1°C)        |
|                 |               | 0 to 2912°F (0 to 1600°C)         | 1°F (1°C)     | ±3.6°F (2.0°C)        |
|                 | C             | 2912 to 3632°F (1600 to 2000°C)   |               | ±4.0°F (2.2°C)        |
|                 |               | 3632 to 4190°F (2000 to 2310°C)   |               | ±4.3°F (2.4°C)        |
|                 | D             | 0 to 212°F (0 to 100°C)           | 1°F (1°C)     | ±4.7°F (2.6°C)        |
|                 |               | 212 to 518°F (100 to 270°C)       |               | ±4.3°F (2.4°C)        |
|                 |               | 518 to 2192°F (270 to 1200°C)     |               | ±4.0°F (2.2°C)        |
|                 | E             | -328 to -148°F (-200 to -100°C)   | 0.1°F (0.1°C) | ±0.5°F (0.6°C)        |
|                 |               | -148 to 1112°F (-100 to 600°C)    |               | ±0.9°F (0.5°C)        |
|                 |               | 1112 to 1832°F (600 to 1000°C)    |               | ±0.7°F (0.4°C)        |
|                 | J             | -328 to -148°F (-200 to -100°C)   | 0.1°F (0.1°C) | ±0.5°F (0.6°C)        |
|                 |               | -148 to 1472°F (-100 to 800°C)    |               | ±0.9°F (0.5°C)        |
|                 |               | 1472 to 2192°F (800 to 1200°C)    |               | ±1.3°F (0.7°C)        |
|                 | K             | -328 to -148°F (-200 to -100°C)   | 0.1°F (0.1°C) | ±0.5°F (0.6°C)        |
|                 |               | -148 to 752°F (-100 to 400°C)     |               | ±0.9°F (0.5°C)        |
|                 |               | -752 to 2192°F (-400 to 1200°C)   |               | ±1.3°F (0.7°C)        |
|                 | N             | -2192 to 2501°F (-1200 to 1372°C) | 0.1°F (0.1°C) | ±1.6°F (0.9°C)        |
|                 |               | -328 to -148°F (-200 to -100°C)   |               | ±1.8°F (1.0°C)        |
|                 |               | -148 to 1652°F (-100 to 900°C)    |               | ±1.3°F (0.7°C)        |
|                 | R             | 1652 to 2372°F (900 to 1300°C)    | 1°F (1°C)     | ±1.4°F (0.8°C)        |
|                 |               | 0 to 212°F (0 to 100°C)           |               | ±2.7°F (1.5°C)        |
|                 |               | 212 to 3212°F (100 to 1767°C)     |               | ±2.1°F (1.2°C)        |
|                 | S             | 0 to 212°F (0 to 100°C)           | 1°F (1°C)     | ±2.7°F (1.5°C)        |
|                 |               | 212 to 3212°F (100 to 1767°C)     |               | ±2.1°F (1.2°C)        |
|                 |               | -418 to 752°F (-250 to 400°C)     |               | ±0.5°F (0.6°C)        |
| RTD<br>(3-Wire) | Pt100<br>385  | -328 to 32°F (-200 to 0°C)        | 0.1°F (0.1°C) | ±0.5°F (0.3°C)        |
|                 |               | 32 to 752°F (0 to 400°C)          |               | ±0.9°F (0.5°C)        |
|                 |               | 752 to 1472°F (400 to 800°C)      |               | ±1.4°F (0.8°C)        |
|                 | Pt200<br>385  | -328 to 212°F (-200 to 100°C)     | 0.1°F (0.1°C) | ±1.4°F (0.8°C)        |
|                 |               | 212 to 572°F (100 to 300°C)       |               | ±1.6°F (0.9°C)        |
|                 |               | 572 to 1166°F (300 to 630°C)      |               | ±1.8°F (1.0°C)        |
|                 | Pt500<br>385  | -328 to 212°F (-200 to 100°C)     | 0.1°F (0.1°C) | ±0.7°F (0.4°C)        |
|                 |               | 212 to 572°F (100 to 300°C)       |               | ±0.9°F (0.5°C)        |
|                 |               | 572 to 1166°F (300 to 630°C)      |               | ±1.3°F (0.7°C)        |
|                 | Pt1000<br>385 | -328 to 212°F (-200 to 100°C)     | 0.1°F (0.1°C) | ±0.5°F (0.2°C)        |
|                 |               | 212 to 572°F (100 to 300°C)       |               | ±0.9°F (0.5°C)        |
|                 |               | 572 to 1166°F (300 to 630°C)      |               | ±1.3°F (0.7°C)        |
|                 | Cu50          | -58 to 302°F (-50 to 150°C)       | 0.1°F (0.1°C) | ±0.5°F (0.6°C)        |

| Model      | Description                   |
|------------|-------------------------------|
| R2815      | Temperature Calibrator        |
| R2815-NIST | Temperature Calibrator & NIST |
| R5900      | Magnetic Meter Strap          |