

# Fluke 714B Thermocouple Calibrator



## Key features

- Highly accurate, easy-to-use thermocouple temperature calibrator
- Measures and simulates 17 thermocouple types and millivolts
- Measures 4 to 20 mA signals while sourcing a temperature signal
- Comes with a magnetic hanger for convenient hands-free operation
- Features configurable source settings for quick linearity checks

## Product overview: Fluke 714B Thermocouple Calibrator

### High accuracy thermocouple temperature calibration the easy way

Fluke 714B is a handheld, battery-operated instrument that measures and sources a variety of thermocouple types and millivolts. It can calibrate a linear thermocouple transmitter with the mV source function and also measure mA while sourcing temperature. It also provides linear ramp and 25% step auto ramp functionality based on 0% and 100% settings for performing quick, linearity checks.

### Designed for calibration professionals

With the intelligent shutdown feature the Fluke 714B remembers settings when powered down so you can quickly replicate tests after powering back up. The calibrator also has one-year and two-year specifications, along with a traceable certificate

of calibration. Combine that with its rugged construction, a backlit display, and easy to use interface and you have an ideal test tool for temperature calibration professionals who want a highly accurate, single-function thermocouple temperature calibrator.

### Related resources

- [Process calibration articles and resources](#)
- [Simulating thermocouples and RTDs for calibration and testing](#)
- [Temperature transmitter calibration](#)
- [Process calibration tool selector](#)

## Specifications: Fluke 714B Thermocouple Calibrator

| General Specifications   |  |   |
|--|--|---|
| Maximum voltage applied between any terminal and earth ground or between any two terminals | 30 V   |   |
| Operating temperature  | -10°C to 50°C  |   |
| Storage temperature  | -30°C to 60°C  |   |
| Operating altitude   | 2,000 m  |   |
| Storage altitude   | 12,000 m   |   |
| Relative humidity (% RH operating without condensation)                                    | Non condensing<br>90% (10°C to 30°C)<br>75% (30°C to 40°C)<br>45% (40°C to 50°C)<br>(Without condensation) |   |
| Vibration requirements   | MIL-T-28800E, Class 2  |   |
| Drop test requirements   | 1 m  |   |
| IP Rating  | IEC 60529: IP52  |   |
| Electromagnetic environment  | IEC 61326-1, Portable  |   |
| Safety   | IEC 61010-1, Max 30 V to earth, Pollution Degree 2   |   |
| Power supply   | 4 AA NEDA 1.5A IEC LR6 batteries   |   |
| Size (H x W x L)   | 52.5 x 84 x 188.5 mm   |   |
| Weight   | 515 g  |   |
| DC mA Measurement  |  |   |
| Resolution   | <b>Range</b>   | <b>Accuracy (% of reading + counts)</b> |
| 0-24 mA  | 0.001 mA   | 0.010% + 2 $\mu$ A                      |
| Temperature coefficient  | $\pm(0.002\%$ of reading + 0.002% of range) /°C (< 18°C or > 28°C)   |   |
| Millivolt Measurement and Source   |  |   |
| Resolution   | <b>Range</b>   | <b>Accuracy (% of reading +counts)</b>  |

| -10 mV to 75 mV                      | 0.01 mV   | 0.015% + 10 $\mu$ A     |        |                        |        |
|--------------------------------------|---|-------------------------|--------|------------------------|--------|
| Temperature coefficient              | $\pm(0.002\%$ of reading + 0.002% of range) / $^{\circ}$ C (< 18 $^{\circ}$ C or > 28 $^{\circ}$ C) |                         |        |                        |        |
| <b>Thermocouple Input and Output</b> |   |                         |        |                        |        |
| TC Type                              | Range ( $^{\circ}$ C)   | Measure ( $^{\circ}$ C) |        | Source ( $^{\circ}$ C) |        |
|                                      |   | 1 year                  | 2 year | 1 year                 | 2 year |
| E                                    | -250 to 200 $^{\circ}$ C  | 1.3                     | 2.0    | 0.6                    | 0.9    |
|                                      | -200 to -100 $^{\circ}$ C   | 0.5                     | 0.8    | 0.3                    | 0.4    |
|                                      | -100 to 600 $^{\circ}$ C  | 0.3                     | 0.4    | 0.3                    | 0.4    |
|                                      | 600 to 1000 $^{\circ}$ C  | 0.4                     | 0.6    | 0.2                    | 0.3    |
| N                                    | -200 to -100 $^{\circ}$ C   | 1.0                     | 1.5    | 0.6                    | 0.9    |
|                                      | -100 to 900 $^{\circ}$ C  | 0.5                     | 0.8    | 0.5                    | 0.8    |
|                                      | 900 to 1300 $^{\circ}$ C  | 0.6                     | 0.9    | 0.3                    | 0.4    |
| J                                    | -210 to -100 $^{\circ}$ C   | 0.6                     | 0.9    | 0.3                    | 0.4    |
|                                      | -100 to 800 $^{\circ}$ C  | 0.3                     | 0.4    | 0.2                    | 0.3    |
|                                      | 800 to 1200 $^{\circ}$ C  | 0.5                     | 0.8    | 0.3                    | 0.3    |
| K                                    | -200 to -100 $^{\circ}$ C   | 0.7                     | 1.0    | 0.4                    | 0.6    |
|                                      | -100 to 400 $^{\circ}$ C  | 0.3                     | 0.4    | 0.3                    | 0.4    |
|                                      | 400 to 1200 $^{\circ}$ C  | 0.5                     | 0.8    | 0.3                    | 0.4    |
|                                      | 1200 to 1372 $^{\circ}$ C   | 0.7                     | 1.0    | 0.3                    | 0.4    |
| T                                    | -250 to -200 $^{\circ}$ C   | 1.7                     | 2.5    | 0.9                    | 1.4    |
|                                      | -200 to 0 $^{\circ}$ C  | 0.6                     | 0.9    | 0.4                    | 0.6    |
|                                      | 0 to 400 $^{\circ}$ C   | 0.3                     | 0.4    | 0.3                    | 0.4    |
| B                                    | 600 to 800 $^{\circ}$ C   | 1.3                     | 2.0    | 1.0                    | 1.5    |
|                                      | 800 to 1000 $^{\circ}$ C  | 1.0                     | 1.5    | 0.8                    | 1.2    |
|                                      | 1000 to 1820 $^{\circ}$ C   | 0.9                     | 1.3    | 0.8                    | 1.2    |
| R                                    | -20 to 0 $^{\circ}$ C   | 2.3                     | 2.8    | 1.2                    | 1.8    |
|                                      | 0 to 100 $^{\circ}$ C   | 1.5                     | 2.2    | 1.1                    | 1.7    |
|                                      | 100 to 1767 $^{\circ}$ C  | 1.0                     | 1.5    | 0.9                    | 1.4    |
| S                                    | -20 to 0 $^{\circ}$ C   | 2.3                     | 2.8    | 1.2                    | 1.8    |
|                                      | 0 to 200 $^{\circ}$ C   | 1.5                     | 2.1    | 1.1                    | 1.7    |
|                                      | 200 to 1400 $^{\circ}$ C  | 0.9                     | 1.4    | 0.9                    | 1.4    |
|                                      | 1400 to 1767 $^{\circ}$ C   | 1.1                     | 1.7    | 1.0                    | 1.5    |

|    |                |     |     |     |     |
|----|----------------|-----|-----|-----|-----|
| C  | 0 to 800°C     | 0.6 | 0.9 | 0.6 | 0.9 |
|    | 800 to 1200°C  | 0.8 | 1.2 | 0.7 | 1.0 |
|    | 1200 to 1800°C | 1.1 | 1.6 | 0.9 | 1.4 |
|    | 1800 to 2316°C | 2.0 | 3.0 | 1.3 | 2.0 |
| L  | -200 to -100°C | 0.6 | 0.9 | 0.3 | 0.4 |
|    | -100 to 800°C  | 0.3 | 0.4 | 0.2 | 0.3 |
|    | 800 to 900°C   | 0.5 | 0.8 | 0.2 | 0.3 |
| U  | -200 to 0°C    | 0.6 | 0.9 | 0.4 | 0.6 |
|    | 0 to 600°C     | 0.3 | 0.4 | 0.3 | 0.4 |
| BP | 0 to 1000°C    | 1.0 | 1.5 | 0.4 | 0.6 |
|    | 1000 to 2000°C | 1.6 | 2.4 | 0.6 | 0.9 |
|    | 2000 to 2500°C | 2.0 | 3.0 | 0.8 | 1.2 |
| XK | -200 to 300°C  | 0.2 | 0.3 | 0.2 | 0.5 |
|    | 300 to 800°C   | 0.4 | 0.6 | 0.3 | 0.6 |
| G  | 100 to 300°C   | 1.6 | 2.4 | 1.2 | 1.8 |
|    | 300 to 1500°C  | 1.0 | 1.5 | 1.0 | 1.5 |
|    | 1500 to 2320°C | 2.0 | 3.0 | 1.6 | 2.4 |
| D  | 0 to 300°C     | 1.6 | 2.4 | 1.2 | 1.8 |
|    | 300 to 1500°C  | 1.0 | 1.5 | 1.0 | 1.5 |
|    | 1500 to 2315°C | 2.0 | 3.0 | 1.6 | 2.4 |
| P  | 0 to 1000°C    | 1.6 | 2.4 | 0.6 | 0.9 |
|    | 1000 to 1395°C | 2.0 | 3.0 | 0.8 | 1.2 |
| M  | -50 to 100°C   | 1.0 | 1.5 | 0.4 | 0.6 |
|    | 100 to 1000°C  | 1.6 | 2.4 | 0.6 | 0.9 |
|    | 1000 to 1410°C | 2.0 | 3.0 | 0.8 | 1.2 |

## Ordering information



### Fluke 714B

Fluke 714B Thermocouple Calibrator

Includes:

- Magnetic hanging tool
- Batteries
- Manual
- Traceable calibration certificate
- Test Leads

### Optional accessories

#### Fluke 80PK-9 General Purpose Probe

#### Fluke 80PK-24 SureGrip™ Air Temperature Probe

#### Fluke 80PK-27 SureGrip™ Industrial Surface Temperature Probe

### Description

Type-K thermocouple surface, air and non-caustic gases

Type-K thermocouple for use in air and non-caustic gas measurements, bead protected by perforated baffle.

Type-K thermocouple for surfaces in rugged environment, durable ribbon sensor, measurement range: -127 to 600°C.

**Fluke.** *Keeping your world up and running.®*

**Fluke Europe B.V.**

P.O. Box 1186

5602 BD Eindhoven

The Netherlands

[www.fluke.com/en](http://www.fluke.com/en)

©2021 Fluke Corporation. All rights reserved.

Data subject to alteration without notice.

12/2021

**For more information call:**

In Middle East/Africa

+31 (0)40 267 5100

**Modification of this document is not permitted  
without written permission from Fluke Corporation.**