

TECHNICAL DATA

# Fluke 712B RTD Calibrators



## Key features

- Highly accurate, full-featured, easy-to-use single function RTD temperature calibrator
- Measures and simulates 13 different RTD types and resistance
- Measures 4 to 20 mA signals while simultaneously sourcing a temperature signal
- Comes with a magnetic hanging tool designed in for convenient hands-free operation
- Features configurable 0% and 100% source settings for quick 25% linearity checks

## Product overview: Fluke 712B RTD Calibrators

**Fluke 712B RTD Calibrator provides highly accurate, easy-to-use, single-function RTD temperature calibration**

Fluke 712B RTD Calibrator is a handheld, battery-operated instrument that measures and sources a variety of RTD types and resistances. It also includes an isolated channel to measure 4-20 mA while sourcing a temperature signal. It offers configurable 0% and 100% source settings for quick 25% linearity checks. It also provides linear ramp and 25% step auto ramp functionality based on 0% and 100% settings.

Add to that dual inputs, an easy to view backlit display, plus the ability to memorize settings at power down for easy restart make the 712B the ideal test tool for temperature calibration professionals who want a highly accurate, easy-to-use, single function RTD temperature calibrator.

### Other useful features:

- Dual inputs and backlit display for easy interpretation of measurements
- Remembers power down settings to easily restart tests when powered up
- Provides linear ramp and 25% step auto ramp based on 0% and 100% settings

- Provides one-year and two-year specifications and traceable certification of calibration

## Specifications: Fluke 712B RTD Calibrators

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
	90% (10°C to 30°C)
	75% (30°C to 40°C)
	45% (40°C to 50°C)
	(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	0-24 mA
Range	0.001 mA
Accuracy (% of reading + counts)	0.010% + 2 $\mu$ A
Temperature coefficient	$\pm$ (0.002% of reading + 0.002% of range) /°C (< 18°C or >28°C)
Ohms Measurement	
Ohms range	Accuracy (% of reading +counts)
0.00 $\Omega$ to 400.00 $\Omega$	0.015% + 0.05 $\Omega$
400.0 $\Omega$ to 4000.0 $\Omega$	0.015% + 0.5 $\Omega$
Read accuracy is based on 4-wire input. For 3-wire ohm measurements, assuming all three leads are matched, add 0.05 $\Omega$ (0.00 $\Omega$ ~400.00 $\Omega$ ), 0.2 $\Omega$ (400.0 $\Omega$ ~4000.0 $\Omega$ ) to the specifications.	

Temperature coefficient	$\pm(0.002\% \text{ of reading} + 0.002\% \text{ of range}) / ^\circ\text{C}$ ( $< 18^\circ\text{C}$ or $> 28^\circ\text{C}$ )					
<b>Ohms Source</b>						
Ohms range	1.0 $\Omega$ to 400.0 $\Omega$					
	1.00 $\Omega$ to 400.00 $\Omega$					
	400.0 $\Omega$ to 1500.0 $\Omega$					
	1500.0 $\Omega$ to 4000.0 $\Omega$					
Excitation current from measurement device	0.1 mA to 0.5 mA					
	0.5 mA to 3 mA					
	0.05 mA to 0.8 mA					
	0.05 mA to 0.4 mA					
Accuracy (% of reading + counts)	0.015% + 0.1 $\Omega$					
	0.015% + 0.05 $\Omega$					
	0.015% + 0.5 $\Omega$					
	0.015% + 0.5 $\Omega$					
Resolution	0.00 $\Omega$ to 400.00 $\Omega$	0.01 $\Omega$				
	400.0 $\Omega$ to 4000.0 $\Omega$	0.1 $\Omega$				
Temperature coefficient	$\pm(0.002\% \text{ of reading} + 0.002\% \text{ of range}) / ^\circ\text{C}$ ( $< 18^\circ\text{C}$ or $> 28^\circ\text{C}$ ) Supports pulsed transmitters and PLCs with pulse times as short as 5 ms					
<b>RTD Input and Output</b>						
RTD Type ( $\alpha$ )	Range ( $^\circ\text{C}$ )	Measure ( $^\circ\text{C}$ )			Source ( $^\circ\text{C}$ )	
		1-year	2-year	Source current	1-year	2-year
10 $\Omega$ Pt (385)	-200 to 100 $^\circ\text{C}$	1.5 $^\circ\text{C}$	3 $^\circ\text{C}$	1 mA	1.5 $^\circ\text{C}$	3 $^\circ\text{C}$
	100 to 800 $^\circ\text{C}$	1.8 $^\circ\text{C}$	3.6 $^\circ\text{C}$	1 mA	1.8 $^\circ\text{C}$	3.6 $^\circ\text{C}$
50 $\Omega$ Pt (385)	-200 to 100 $^\circ\text{C}$	0.4 $^\circ\text{C}$	0.7 $^\circ\text{C}$	1 mA	0.4 $^\circ\text{C}$	0.7 $^\circ\text{C}$
	100 to 800 $^\circ\text{C}$	0.5 $^\circ\text{C}$	0.8 $^\circ\text{C}$	1 mA	0.5 $^\circ\text{C}$	0.8 $^\circ\text{C}$
100 $\Omega$ Pt (385)	-200 to 100 $^\circ\text{C}$	0.2 $^\circ\text{C}$	0.4 $^\circ\text{C}$	1 mA	0.2 $^\circ\text{C}$	0.4 $^\circ\text{C}$
	100 to 800 $^\circ\text{C}$	0.015% + 0.18 $^\circ\text{C}$	0.03% + 0.36 $^\circ\text{C}$	1 mA	0.015% + 0.18 $^\circ\text{C}$	0.03% + 0.36 $^\circ\text{C}$
200 $\Omega$ Pt (385)	-200 to 100 $^\circ\text{C}$	0.2 $^\circ\text{C}$	0.4 $^\circ\text{C}$	500 $\mu\text{A}$	0.2 $^\circ\text{C}$	0.4 $^\circ\text{C}$
	100 to 630 $^\circ\text{C}$	0.015% + 0.18 $^\circ\text{C}$	0.03% + 0.36 $^\circ\text{C}$	500 $\mu\text{A}$	0.015% + 0.18 $^\circ\text{C}$	0.03% + 0.36 $^\circ\text{C}$
500 $\Omega$ Pt (385)	-200 to 100 $^\circ\text{C}$	0.3 $^\circ\text{C}$	0.6 $^\circ\text{C}$	250 $\mu\text{A}$	0.3 $^\circ\text{C}$	0.6 $^\circ\text{C}$
	100 to 630 $^\circ\text{C}$	0.015% + 0.28 $^\circ\text{C}$	0.03% + 0.56 $^\circ\text{C}$	250 $\mu\text{A}$	0.015% + 0.28 $^\circ\text{C}$	0.03% + 0.56 $^\circ\text{C}$
1000 $\Omega$ Pt (385)	-200 to 100 $^\circ\text{C}$	0.2 $^\circ\text{C}$	0.4 $^\circ\text{C}$	250 $\mu\text{A}$	0.2 $^\circ\text{C}$	0.4 $^\circ\text{C}$
	100 to 630 $^\circ\text{C}$	0.015% + 0.18 $^\circ\text{C}$	0.03% + 0.36 $^\circ\text{C}$	250 $\mu\text{A}$	0.015% + 0.18 $^\circ\text{C}$	0.03% + 0.36 $^\circ\text{C}$

100 Ω Pt (3916)	-200 to 100°C	0.2°C	0.4°C	1 mA	0.2°C	0.4°C
	100 to 630°C	0.015% +0.18°C	0.03% +0.36°C	1 mA	0.015% +0.18°C	0.03% +0.36°C
100 Ω Pt (3926)	-200 to 100°C	0.2°C	0.4°C	1 mA	0.2°C	0.4°C
	100 to 630°C	0.015% +0.18°C	0.03% +0.36°C	1 mA	0.015% +0.18°C	0.03% +0.36°C
10 Ω Cu (427)	-100 to 260°C	1.5°C	3°C	1 mA	1.5°C	3°C
120 Ω Ni (672)	-80 to 260°C	0.15°C	0.3°C	1 mA	0.15°C	0.3°C
50 Ω Cu (427)	-180 to 200°C	0.4°C	0.7°C	1 mA	0.4°C	0.7°C
100 Ω Cu (427)	-180 to 200°C	0.2°C	0.4°C	1 mA	0.2°C	0.4°C
YSI400	15 to 50°C	0.2°C	0.4°C	250 μA	0.2°C	0.4°C

1. Sensor inaccuracies not included.

2. Resolution: 0.1°C.

3. Read accuracy is based on 4-wire input. For 3-wire RTD measurements, assuming all three RTD leads are matched, add 1.0°C (Pt10 and Cu10), 0.6°C (Pt50 and Cu50), 0.4°C (Other RTD types) to the specifications.

4. Source Accuracy in source mode is based on 0.5 mA~3 mA (1.00 Ω~400.00 Ω), 0.05 mA~0.8 mA (400.0 Ω~1500.0 Ω), 0.05 mA~0.4 mA (1500.0 Ω ~4000.0 Ω), excitation current (0.25 mA for Pt1000 range).

5. Temperature Coefficient: ±0.05°C /°C for measure, ±0.05°C /°C (< 18°C or > 28°C) for source.

6. Supports pulsed transmitters and PLCs with pulse times as short as 5 ms.

## Ordering information



### **Fluke 712B**

Fluke 712B RTD Calibrator

Includes:

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

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