# imall

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## Fluke Temperature Calibrators

### **Fluke 724 Temperature Calibrator**

## Test temperature sensors and transmitters and gauges with one tool

Now you can carry one tool to test all temperature sensors and transmitters in your plant. The Fluke 724 can measure and source 12 thermocouple types and seven RTD types, plus volts and ohms. The 724 even handles high-speed pulsed RTD circuits and provides loop power.

The dual display lets you source temperature and view loop current at the same time. With its simple, "no menus" controls, it is easy to operate, too.

- Easy to read dual display lets you view input and output simultaneously
- Measure RTDs, thermocouples, ohms, and volts to test sensors and transmitters
- Source/simulate thermocouples, RTDs, volts, and ohms to calibrate transmitters
- Perform fast linearity tests with 25 % and 100 % steps
- Execute remote tests with auto step and auto ramp
- Power transmitters during test using loop power supply with simultaneous mA measurement
- · Store frequently-used test setups for later use
- · Backlight lets you work in poor light
- Large battery capacity of four AA cells
- Battery door for easy changes

## **Technical Data**



## **Mechanical and General Specifications**

Size: 96 mm x 200 mm x 47 mm Weight: 650 g Batteries: Four AA alkaline batteries Warranty: Three-years Battery life: 25 hours typical Shock & Vibration: Random, 2G, 5 Hz to 500 Hz



## **Functional specifications**

Measurement Accuracy							
Voltage dc	30.000 V 0.02 % + 2 counts						
		(upper display)					
	20.000 V	0.02 % + 2  counts					
		(lower display)					
	100.00 mV	0.02 % + 2 counts					
	-10.00 mV to	0.025 % + 1 count					
	75.00 mV	(via TC connector)					
Current dc	24.000 mA	0.02 % + 2 counts					
Resistance	0.0 Ω to	0.1 Ω (4-wire)					
	400.0 Ω 0.15 Ω (2- and 3-wir						
	401 Ω	0.5 Ω (4-wire)					
	to 1500 Ω	1 Ω (2- and 3-wire)					
	1500 Ω	$1 \Omega$ (4-wire)					
	to 3200 $\Omega$ 1.5 $\Omega$ (2- and 3-wire)						
Source Accuracy							
Voltage DC	100.00 mV	0.02 % +2 counts					
	10.000 V	0.02 % +2 counts					
	-10.00 mV to	0.025 % + 1 count					
	75.00 mV	(via TC connector)					
Resistance	15.0 Ω	0.15 $\Omega$ (exc. current					
	to 400.0 Ω	0.15 mA to 0.5 mA), 0.1 $\Omega$ (exc. current 0.5 mA to 2 mA)					
	401 Ω	$0.5 \Omega$ (excitation current					
	to 1500 Ω	0.05 mA to 0.8 mA)					
	1500 Ω	1 $\Omega$ (excitation current					
	to 3200 Ω	0.05 mA to 0.4 mA)					
Specifications	1						
Ramp functions	Source functions:						
	resistance, frequency, temperature						
	Ramps: Slow ramp, Fast ramp,						
Loop power function	25 % step-ramp Voltage: 24 V						
	5						
	Accuracy: 10 %						
	Accuracy: 10 %	: 22 mA, short circuit					
	Accuracy: 10 %	: 22 mA, short circuit					
Step functions	Accuracy: 10 % Maximum current protected Source functions:	: 22 mA, short circuit voltage, resistance,					
	Accuracy: 10 % Maximum current protected Source functions: temperature	voltage, resistance,					
Step functions	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra						
Step functions Environmental Sp	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra	voltage, resistance,					
Step functions Environmental Sp Operating	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra	voltage, resistance,					
Step functions Environmental Sp Operating temperature	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications - 10 °C to 55 °C	voltage, resistance,					
Step functions Environmental Sp Operating temperature Storage temperature	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications -10 °C to 55 °C -20 °C to 71 °C	voltage, resistance, nge, 100 % of range					
Step functions Environmental Sp Operating temperature	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications -10 °C to 55 °C -20 °C to 71 °C 90 %	voltage, resistance, nge, 100 % of range 10 °C to 30 °C					
Step functions Environmental Sp Operating temperature Storage temperature Humidity	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications - 10 °C to 55 °C -20 °C to 71 °C 90 % 75 %	voltage, resistance, nge, 100 % of range 10 °C to 30 °C 30 °C to 40 °C					
Step functions Environmental Sp Operating temperature Storage temperature Humidity (Without	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications -10 °C to 55 °C -20 °C to 71 °C 90 % 75 % 45 %	voltage, resistance, nge, 100 % of range 10 °C to 30 °C 30 °C to 40 °C 40 °C to 50 °C					
Step functions Environmental Sp Operating temperature Storage temperature Humidity (Without Condensation)	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications -10 °C to 55 °C -20 °C to 71 °C 90 % 75 % 45 % 35 %	voltage, resistance, nge, 100 % of range 10 °C to 30 °C 30 °C to 40 °C					
Step functions Environmental Sp Operating temperature Storage temperature Humidity (Without Condensation) Safety Specification	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications -10 °C to 55 °C -20 °C to 71 °C 90 % 75 % 45 % 35 %	voltage, resistance, nge, 100 % of range 10 °C to 30 °C 30 °C to 40 °C 40 °C to 50 °C 50 °C to 55 °C					
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Step functions Environmental Sp Operating temperature Storage temperature Humidity (Without Condensation) Safety Specification	Accuracy: 10 % Maximum current protected Source functions: temperature Steps: 25 % of ra ecifications -10 °C to 55 °C -20 °C to 71 °C 90 % 75 % 45 % 35 %	voltage, resistance, nge, 100 % of range 10 °C to 30 °C 30 °C to 40 °C 40 °C to 50 °C 50 °C to 55 °C 10.1:1992 and					

<b>RTDs and Thermo</b>	couples		
Measure accuracy	NI-120	0.2 °C	
Measure accuracy	PT-100 (385)	0.2 °C	
	PT-100 (393)	0.3 °C	
	PT-100 (JIS)	0.3 °C	
	PT-200 (385)	0.2 °C	
	PT-500 (385)		
	PT-1000 (385)	0.3 °C 0.2 °C	
	Resolution	0.2 C 0.1 °C	
	J	0.7 °C	
	K	0.8 °C	
	Т	0.8 °C	
	E	0.8 °C	
	R	1.8 °C	
	S	1.5 °C	
	В	1.4 °C	
	L	0.7 °C	
	U	0.75 °C	
	N	0.9 °C	
	Resolution	J, K, T, E, L, N, U: O.1 °C, O.1 °F B, R, S: 1 °C, 1 °F	
	XK	0.6°C	
	BP	1.2 °C	
Source accuracy	NI-120	0.2 °C	
	PT-100 (385)	0.33 °C	
	PT-100 (393)	0.3 °C	
	PT-100 (JIS)	0.3 °C	
	PT-200 (385)	0.2 °C	
	PT-500 (385)	0.3 °C	
	PT-1000 (385)	0.2 °C	
	Resolution	0.1 °C	
	Note	Accuracy stated for 4-wire measurement.	
	J	0.7 °C	
	К	0.8 °C	
	Т	0.8 °C	
	Е	0.7 °C	
	R	1.4 °C	
	S	1.5 °C	
	В	1.4 °C	
	L	0.7 °C	
	U	0.75 °C	
	N	0.9 °C	
	Resolution	J, K, T, E, L, N, U: 0.1 °C, B, R, S: 1 °C	
	ХК	0.6 °C	
	BP	1.2 °C	
	BP	1.2 °C	

### Fluke 712 and 714 Temperature Calibrators

The Fluke 712 and 714 temperature calibrators deliver outstanding performance, durability and reliability. These calibrators are compact, lightweight and easy to carry and with a push-button interface and are easy to use. Each calibrator is EMI tolerant, dust- and splash-resistant and features a removable battery door for quick battery changes.

Auto-step and auto-ramp features support remote testing.

#### Fluke 714 Thermocouple Calibrator

- Measure temperature from TC probes
- Simulate TC output
- Operable with nine types of thermocouples
- Calibrate linear TC transmitter with mV source function
- Selectable °F or °C
- Thermocouple mini-jack termination
- Available as accessories: Fluke 700TC1 and TC2 Thermocouple Mini-plug Kits

#### Fluke 712 RTD Calibrator

- · Compatible with pulsed current transmitters
- Measure temperature from an RTD probe
- Simulate RTD output
- Operates with seven types of RTD
- Measure additional RTDs using Ohms measurement function
- Simulate additional RTDs using Ohms source function
- °F or °C selectable
- · Four shrouded banana jacks

## **General Specifications**

Maximum voltage: 30 V **Non-operating temperature:** -40 °C to 60 °C **Operating temperature:** -10 °C to 55 °C Relative humidity: 95 % (10 °C to 30 °C); 75 % (30 °C to 40 °C); 45 % (40 °C to 50 °C); 35 % (50 °C to 55 °C) Operating altitude: 3,000 m max **Shock:** 1 m drop test Vibration: Random, 2 g, 5 Hz to 500 Hz Safety: CSA C22.2 No. 1010.1:1992 EMC: EN50082-1:1992 and EN55022:1994 Class B Size/weight (HxWxD): 187 mm x 87 mm x 32 mm (7.35 in x 3.41 in x 1.25 in) 330 g (12 oz) Size/weight (HxWxD) (with holster and Flex-Stand<sup>™</sup>): 201 mm x 98 mm x 52 mm (7.93 in x 3.86 in x 2.06 in) 600 g (21 oz) 992 g (35 oz) Power: 9 V battery ANSI/NEDA 1604A or IEC 6LR619V alkaline; two batteries in 718 Battery life: 4 to 20 hours, typical, depending on functions used. Battery timeout (configurable) extends battery life.

Warranty: Three-years

Functional Specifications							
		Range	Resolution	Accuracy	Types		
Fluke 712	Measure/simulate RTD	-200 °C to 800 °C (Pt 100-385)	0.1 °C, 0.1 °F	0.2 °C, 0.4 °F (Pt 100-385)	Pt; 100 200 500 1000 (385); Pt 100 (392); Pt 100 (392) JIS; Ni 120 (672)		
	Measure/simulate resistance	0 $\Omega$ to 3200 $\Omega$	0.1 Ω	.025 % + 0.1 % to 0.55 %			
Fluke 714	Measure/simulate thermocouple	–200 °C to 1800 °C, depending on type (K, –200 °C to 1370 °C)	0.1 °C or °F (1 °C or °F; BRS)	0.5 °C, 0.8 °F	9 TC types; J K T E R S B per NIST 175 and ITS-90 L U per DIN 43710 and IPTS-68		
	Measure/simulate mV	-10 mV to 75 mV	0.01 mV	0.025 % + 1 count			

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

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