

Fluke Temperature **Calibrators**

Technical Data

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



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

	uracy			
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-win			
	401 Ω to 1500 Ω	0.5Ω (4-wire)		
		1 Ω (2- and 3-wire)		
	1500 Ω to 3200 Ω	1 Ω (4-wire) 1.5 Ω (2- and 3-wire)		
Courae Magureau	10 0200 52	1.0 32 (2		
Source Accuracy	100.0017	0.02.0/- +2		
Voltage DC	100.00 mV	0.02 % +2 counts		
	10.000 V	0.02 % +2 counts		
	-10.00 mV to	0.025 % + 1 count (via TC connector)		
B		,		
Resistance	15.0 Ω to 400.0 Ω	0.15 Ω (exc. current 0.15 mA to 0.5 mA), 0.1		
	10 400.0 52	Ω (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				
Ramp functions	Source functions:			
	Ramps: Slow ram	ency, temperature		
	25 % step-ramp	p, rast ramp,		
Loop power function	Voltage: 24 V			
Loop power function	Voltage: 24 V Accuracy: 10 %			
Loop power function	Accuracy: 10 %	:: 22 mA, short circuit		
Loop power function	Accuracy: 10 %	:: 22 mA, short circuit		
Loop power function 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 ecifications	voltage, resistance,		
Step functions	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 ecifications	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	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 -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		
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		
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		
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		
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 40 °C to 50 °C 50 °C to 55 °C		

Measurement Acc		0.02.0/- + 2.=====	RTDs and Therm		0.2.90
Voltage dc	30.000 V	0.02 % + 2 counts (upper display)	Measure accuracy	NI-120	0.2 °C
	20.000 V	0.02 % + 2 counts		PT-100 (385)	0.33 °C
		(lower display)		PT-100 (393)	0.3 °C
	100.00 mV	0.02 % + 2 counts		PT-100 (JIS)	0.3 °C
	-10.00 mV to	0.025 % + 1 count		PT-200 (385)	0.2 °C
	75.00 mV	(via TC connector)		PT-500 (385)	0.3 °C
Current dc	24.000 mA	0.02 % + 2 counts		PT-1000 (385)	0.2 °C
Resistance	0.0 Ω to	0.1 Ω (4-wire)		Resolution	0.1 °C
	400.0 Ω	0.15 Ω (2- and 3-wire)		J	0.7 °C
	401 Ω to 1500 Ω	0.5 Ω (4-wire) 1 Ω (2- and 3-wire)		K	0.8 °C
	1500 Ω	1 Ω (4-wire)		Т	0.8 °C
	to 3200 Ω	1.5Ω (2- and 3-wire)		Е	0.7 °C
Source Accuracy	<u>'</u>			R	1.8 °C
Voltage DC	100.00 mV	0.02 % +2 counts		S	1.5 °C
3	10.000 V	0.02 % +2 counts		В	1.4 °C
	-10.00 mV to	0.025 % + 1 count		L	0.7 °C
	75.00 mV	(via TC connector)		Ū	0.75 °C
Resistance	15.0 Ω	0.15 Ω (exc. current		N	0.9 °C
	Ω	0.15 mA to 0.5 mA), 0.1 Ω (exc. current 0.5 mA		Resolution	J, K, T, E, L, N, U: 0.1 °C, 0.1 °F B, R, S: 1 °C, 1 °F
		to 2 mA)		XK	0.6°C
	401 Ω to 1500 Ω	0.5 Ω (excitation current 0.05 mA to 0.8 mA)		BP	1.2 °C
	1500 Ω	1Ω (excitation current	Source accuracy	NI-120	0.2 °C
	to 3200 Ω	0.05 mA to 0.4 mA)		PT-100 (385)	0.33 °C
Specifications		,		PT-100 (393)	0.3 °C
Ramp functions	Source functions: Voltage, current, resistance, frequency, temperature Ramps: Slow ramp, Fast ramp, 25 % step-ramp			PT-100 (JIS)	0.3 °C
ramp ranonons				PT-200 (385)	0.2 °C
				PT-500 (385)	0.3 °C
				PT-1000 (385)	0.2 °C
Loop power function	Voltage: 24 V Accuracy: 10 %			Resolution	0.1 °C
	Maximum current: 22 mA, short circuit protected			Note	Accuracy stated for 4-wire measurement.
Step functions	Source functions: voltage, resistance, temperature Steps: 25 % of range, 100 % of range			J	0.7 °C
•				K	0.8 °C
				Т	0.8 °C
	Environmental Specifications			Е	0.7 °C
Operating	-10 °C to 55 °C -20 °C to 71 °C			R	1.4 °C
Ctorogo tomporature				S	1.5 °C
Storage temperature		10.00 += 20.00		В	1.4 °C
Humidity (Without	90 %	10 °C to 30 °C		L	0.7 °C
Condensation)	75 %	30 °C to 40 °C		U	0.75 °C
	45 %	40 °C to 50 °C		N	0.9 °C
Safety Specification	35 % ons	50 °C to 55 °C		Resolution	J, K, T, E, L, N, U: 0.1 °C, B, R, S: 1 °C
Safety rating	rating CSA C22.2 No. 1010.1:1992			XK	0.6 °C
EMC				BP	1.2 °C
	FN55022-1004	Tlace R			



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 splashresistant 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

 $(7.35 \text{ in } \times 3.41 \text{ in } \times 1.25 \text{ in})$

330 g (12 oz)

Size/weight (HxWxD) (with holster and Flex-

Stand™): 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	15 Ω to 4000 Ω	0.1 Ω	+ 0.005 Ω				
Fluke 714	Measure/simulate Thermocouple	-200 °C to 1800 °C, depending on type (K, -200 °C to 1370 °C)	O.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 PTS-68			
	Measure/simulate mV	-10 mV to 75 mV	0.01 mV	0.015 % + 10 μV				

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