

# Multifunction Calibrators



## Fluke 725 Multifunction Process Calibrator and 724 Temperature Calibrator. Compact multifunction calibrators

The Fluke 725 Multifunction Process Calibrator and Fluke 724 Temperature Calibrator are versatile, easy-to-use field calibrators. Use them to test and calibrate almost anything. The 725 and 724 feature:

- Easy-to-read measure/source backlit screen lets you view input and output simultaneously
- Perform fast linearity tests with auto step and auto ramp features
- Power transmitters with internal loop supply
- Store frequently-used test setups for later use
- Measure Volts, mA, RTDs, thermocouples and ohms to calibrate transmitters
- Source/simulate volts, thermocouples, RTDs and ohms to calibrate transmitters

### In addition, the 725 offers:

- Measure pressure and frequency to test sensors and transmitters
- Source/simulate mA, frequency and pressure to calibrate transmitters
- Measure pressure using any of the Fluke 700Pxx Pressure Modules
- Source mA with simultaneous pressure measurement to conduct valve and I/P tests
- Support flow meter testing with frequency and counts per minute (CPM) functions
- Remote interface allows benchtop automated operation



## 8 Ordering information

### Fluke-725 Multifunction Process Calibrator

### Fluke-724 Temperature Calibrator

Each calibrator includes TL75 Test Leads, AC70A Test Clips, one pair of stackable test leads, product overview manuals, users manuals on CD-ROM; NIST-traceable certificate of calibration; CE and CSA markings.

## Fluke 725 and 724

Simultaneous Function Capability	Channel A	Channel B
24.000 mA dc	M	M or S <sup>(1)</sup>
24.000 mA dc with 24 V loop supply	M	
100.00 mV dc		M or S
30.000 V dc measure	M	
20.000 V dc measure 10.000 V dc source		M or S
3200 Ohms		M or S
T/C: J, K, T, E, R, S, B, L, U, N, XK, BP		M or S
RTD Ni120; Pt100 (3926); Pt100 (JIS); Pt100, 200, 500, 1000 (385)		M or S
Pressure (requires Fluke 700Pxx Modules)	M <sup>(1)</sup>	M <sup>(1)</sup> used as S <sup>(1)</sup>
Frequency; squarewave, 1 CPM to 10 kHz; fixed amplitude 5 V p-p		M <sup>(1)</sup> or S <sup>(1)</sup>

M = Measure S = Source/Simulate <sup>(1)</sup> 725 only

**Summary specifications (18 °C to 28 °C for one year)**

(Fluke 724/725)

Function Measure or Source	Range	Resolution	Accuracy	Notes
Voltage	0 to 100 mV 0 to 10 V (source) 0 to 30 V (measure)	0.01 mV 0.001 V 0.001 V	0.02 % Rdg + 2 LSD	Max load, 1 mA
mA (724 measure only)	0 to 24	0.001 mA	0.02 % Rdg + 2 LSD	Max load, 1000 Ω
mV (TC terminals)	-10.00 mV to + 75.00 mV	.01 mV	0.025 % of range + 1 LSD	
Resistance	0 Ω to 3200 Ω (measure) 15 Ω to 3200 Ω (source)	0.01 Ω to 0.1 Ω	0.10 Ω to 1.0 Ω	
Frequency source (725 only)	2.0 to 1000.0 CPM 1 to 1000 Hz 1.0 to 10.0 kHz	0.1 CPM 1 Hz 0.1 kHz	±0.05 % of setting ±0.05 % of setting ±0.25 % of setting	For frequency source, waveform is 5 V p-p squarewave, -0.1 V offset
Frequency measure (725 only)	1 CPM to 10 kHz	5 digits	0.05 % Rdg + 1 count	1 V p-p min.
Loop Supply	24 V dc	N/A	10 %	

Temperature coefficient, -10 °C to 18 °C, 28 °C to 55 °C, ±.005 % of range per °C.

**Thermocouple (T/C) accuracy specifications (Fluke 724/725)**

T/C	Measure or Source	
J	-200 to 0 °C 0 to 1200 °C	1.0 °C 0.7 °C
K	-200 to 0 °C 0 to 1370 °C	1.2 °C 0.8 °C
T	-200 to 0 °C 0 to 400 °C	1.0 °C 0.8 °C
E	-200 to 0 °C 0 to 950 °C	0.9 °C 0.7 °C
R	-20 to 0 °C 0 to 500 °C 500 to 1750 °C	2.5 °C 1.8 °C 1.4 °C
S	-20 to 0 °C 0 to 500 °C 500 to 1750 °C	2.5 °C 1.8 °C 1.5 °C
B	600 to 800 °C 800 to 1000 °C 1000 to 1800 °C	2.2 °C 1.8 °C 1.4 °C
L	-200 to 0 °C 0 to 900 °C	0.85 °C 0.7 °C
U	-200 to 0 °C 0 to 400 °C	1.1 °C 0.75 °C
N	-200 to 0 °C 0 to 1300 °C	1.5 °C 0.9 °C

Note: Accuracy specifications include 0.2 °C cold junction uncertainty.

T/C	Measure or Source	
XK	-200 to -100 °C -100 to 800 °C	0.5 °C 0.6 °C
BP	0 to 800 °C 800 to 2500 °C	1.2 °C 2.5 °C
Resolution		
J, K, T, E, L, N, U, XK, BP	0.1 °C, 0.1 °F	
B, R, S	1 °C, 1 °F	

**RTD ranges and accuracy specifications (Fluke 724/725)**

RTD Types, Ranges and Accuracies			
		Measure (4 wire)	Source
Ni 120	-80 °C to 260 °C	0.2 °C	0.2 °C
Pt 100 - 385	-200 °C to 800 °C	0.33 °C	0.33 °C
Pt 100 - 3926	-200 °C to 630 °C	0.3 °C	0.3 °C
Pt 100 - 3916	-200 °C to 630 °C	0.3 °C	0.3 °C
Pt 200 - 385	-200 °C to 250 °C 250 °C to 630 °C	0.2 °C 0.8 °C	0.2 °C 0.8 °C
Pt 500 - 385	-200 °C to 500 °C 500 °C to 630 °C	0.3 °C 0.4 °C	0.3 °C 0.4 °C
Pt 1000 - 385	-200 °C to 100 °C 100 °C to 630 °C	0.2 °C 0.2 °C	0.2 °C 0.2 °C
Resolution			
RTD	0.1 °C, 0.1 °F		

**General specifications for Fluke 724 and 725 calibrators**

**Maximum voltage:** 30 V

**Storage temperature:**  
-20 °C to 71 °C

**Operating temperature:**  
-10 °C to 55 °C

**Relative humidity:**  
90 % (10 °C to 30 °C);  
75 % (30 °C to 40 °C);  
45 % (40 °C to 50 °C);  
35 % (50 °C to 55 °C)

**Shock:**  
30 g, 11ms, half-sine shock

**Vibration:**  
Random, 2 g, 5-500 Hz

**Safety:** CSA C22.2 No.1010.1:1992

**EMC:** EN50082-1:1992 and EN55022:1994 Class B

**Size/weight:** 96 x 200 x 47 mm  
(3.8 x 7.9 x 1.9 in)  
650 g (23 oz)

**Battery:** Four AA alkaline batteries.

**Battery life:** 25 hours typical

**Warranty:** Three years