

# Fluke 744 Documenting Process Calibrator-HART Specifications

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Source Accuracy		
Range (full scale)	Accuracy	
	(% of reading+% of full scale)	
110.000 mV	0.01% + 0.005%	
1.10000V	0.01% + 0.005%	
15.0000V	0.01% + 0.005%	
Source 22.000 mA	0.01% + 0.015%	
Simulate 22.000 mA	0.02% + 0.03%	
11.000 $\Omega$	0.01% + 20 m $\Omega$	
110.00 $\Omega$	0.01% + 40 m $\Omega$	
1.1000 k $\Omega$	0.02% + 0.5 $\Omega$	
11.000 k $\Omega$	0.03% + 5 $\Omega$	
0.00 to 10.99 Hz	0.01 Hz	
11.00 to 109.99 Hz	0.1 Hz	
110.0 to 1099.9 Hz	0.1 Hz	
1.100 to 21.999 kHz	2 Hz	
22.000 to 50.000 kHz	5 Hz	

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.  
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Measurement Accuracy		
Range (Full scale)	Accuracy (% of reading+% of full scale)	
110.000 mV DC	0.025% + 0.015%	
1.10000V DC	0.025% + 0.005%	
11.00000V DC	0.025% + 0.005%	
110.000V DC	0.05% + 0.005%	
300.00V DC	0.05% + 0.005%	
V AC, 20 to 40 Hz	2% + 10 counts	
V AC, 40 to 500 Hz	0.5% + 5	
V AC, 500 to 1 kHz	2% + 10	
V AC, 1 kHz to 5 kHz	10% + 20	
30.000 mA DC	0.01% + 0.015%	
110.00 mA DC	0.01% + 0.015%	
11.000 $\Omega$	0.05% + 50 m $\Omega$	
110.00 $\Omega$	0.05% + 50 m $\Omega$	
1.1000 k $\Omega$	0.05% + 0.5 $\Omega$	
11.000 k $\Omega$	0.1% + 10 $\Omega$	
1.00 to 109.99 Hz	0.05 Hz	
110.0 to 1099.9 Hz	0.5 Hz	
1.100 to 10999 kHz	5 Hz	
11.00 to 50.00 KHz	50 Hz	

Temperature, RTDs, and Thermocouples*		
Device		
10 $\Omega$ Cu (427)	Measure Accuracy: 3°C Source Accuracy: 1°C	
100 $\Omega$ Pt (3916)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C	

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100 $\Omega$ Pt (3926)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
100 $\Omega$ Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
200 $\Omega$ Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
500 $\Omega$ Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
1000 $\Omega$ Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
120 $\Omega$ Ni (672)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
E	Measure Accuracy: 0.3°C Source Accuracy: 0.2°C
N	Measure Accuracy: 0.5°C Source Accuracy: 0.3°C
J	Measure Accuracy: 0.3°C Source Accuracy: 0.2°C
L	Measure Accuracy: 0.3°C Source Accuracy: 0.2°C
K	Measure Accuracy: 0.3°C Source Accuracy: 0.3°C
T	Measure Accuracy: 0.3°C Source Accuracy: 0.3°C
U	Measure Accuracy: 0.3°C Source Accuracy: 0.3°C
B	Measure Accuracy: 0.9°C Source Accuracy: 0.8°C
R	Measure Accuracy: 1.0°C Source Accuracy: 0.9°C
S	Measure Accuracy: 0.9°C Source Accuracy: 0.9°C
C	Measure Accuracy: 0.6°C Source Accuracy: 0.6°C

\* Resolution: 0.1°C, except 1°C for 10 $\Omega$  Cu. Best case, mid-range accuracies. Sensor inaccuracies not included. For 2-wire and 3-wire RTD measurements, add 0.4°C. Thermocouple accuracies with external cold junction. For internal junction add 0.2°C.

## Technical Data

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Environmental Specifications*	Operating Temperature: -10°C to 50°C (-20°C typical except for frequency and ac voltage measurement) Storage Temperature: -20°C to 60°C Operating Altitude: 2800m above mean sea level (9186 ft) Enclosure Protection: Designed to meet IEC529 IP52 (normal operating vacuum for dust)
Data Log Function	Measure functions: Voltage, current, resistance, frequency, temperature, pressure Reading rate: 1, 2, 5, 10, 20, 30, or 60 readings per minute Maximum record length: 8000 readings (7980 for 30 or 60 readings per minute)
Ramp Function	Source functions: Voltage, current, resistance, frequency, temperature Rate: 4 steps/second Trip Detect: Continuity or voltage (continuity detection not available when sourcing current)
Loop Power Function	Voltage: Selectable, 24V or 28V Accuracy: 5% Maximum current: 22 mA, short circuit protected Maximum input voltage: 30V dc

\* (all calibrator specifications apply from +18°C to +28°C unless stated otherwise)

General Specifications	
Dimensions	130 x 736 x 61 mm
Weight	1.4 kg (3 lb 1 oz)
Internal Battery Pack	NiMH 7.2V, 3500 mAh
Battery Life	Typical usage > eight hours
Battery Replacement	Via snap-shut door without opening calibrator; no tools required
Side Port Connections	<ul style="list-style-type: none"> <li>• Pressure module connector</li> <li>• RS-232 connector to interface to your PC</li> <li>• Connection for optional battery eliminator</li> </ul>
Safety	Complies with CAN/CSA C22.2 No 1010.1-92, ANSI/ISA S82.01-1994, UL3111, and EN610-1:1993
Data Storage Capacity	1 week of calibration results
90 day specifications	The standard specification intervals for the 744 is 1 and 2 years. Typical 90 day measurement and source accuracy

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		can be estimated by dividing the one year "% of reading" or "%of output" specifications by 2. Floor specifications, expressed as "% of f.s." or "counts" or "ohms" remain constant.	
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Calibration & Repair  
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