

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%	
11.000Ω	0.01% + 20 mΩ	
110.00Ω	0.01% + 40 mΩ	
1.1000 kΩ	0.02% + 0.5Ω	
11.000 kΩ	0.03% + 5Ω	
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	

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%
11.0000V 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%
11.000Ω	0.05% + 50 mΩ
110.00Ω	0.05% + 50 mΩ
1.1000 kΩ	0.05% + 0.5Ω
11.000 kΩ	0.1% + 10Ω
1.00 to 109.99 Hz	0.05 Hz
110.0 to 1099.9 Hz	0.5 Hz
1.100 to 10.999 kHz	5 Hz
11.00 to 50.00 kHz	50 Hz

Temperature, RTDs, and Thermocouples*

Device	
10Ω Cu (427)	Measure Accuracy: 3°C Source Accuracy: 1°C
100Ω Pt (3916)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C

100Ω Pt (3926)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
100Ω Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
200Ω Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
500Ω Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
1000Ω Pt (385)	Measure Accuracy: 0.3°C Source Accuracy: 0.1°C
120Ω 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 10Ω 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.

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

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

General Specifications	
Dimensions	130 x 236 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"> • Pressure module connector • RS-232 connector to interface to your PC • Connection for optional battery eliminator
Safety	Complies with CAN/CSA C22.2 No 1010.1-92, ASNI/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

		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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