

FLUKE®

Calibration



**7526A Precision
Process Calibrator**
Extended specifications

Specifications

General Specifications

Warm-up Time Twice the time since last warmed up, to a maximum of 30 minutes

Settling Time Less than 5 seconds for all functions and ranges except as noted

Standard Interfaces RS-232

IEEE-488 (GPIB)

Temperature Performance

Operating 0 °C to 50 °C

Calibration (tcal) 18 °C to 28 °C

Storage..... -20 °C to 70 °C

Temperature Coefficient Temperature coefficient for temperatures outside tcal 5 °C is 10 % of the 90-day specification (or 1 year if applicable) per °C

Relative Humidity

Operating <80 % to 30 °C

<70 % to 40 °C

<40 % to 50 °C

Altitude

Operating 3,000 m (9,800 ft) maximum

Non-operating..... 12,200 m (40,000 ft) maximum

Safety EN/IEC 61010-1:2010 3rd Edition, UL 61010-1:2012,

CAN/CSA 22.2 No. 61010-1-12

EMC Complies with EN/IEC 61326-1:2006, EN 61326-2-1:2006

for controlled EM environments except when used in the following conditions:

- In electromagnetic fields from 0.08-2.7 GHz in excess of 1V/m.
- When subjected to electrostatic discharge (ESD) to the binding posts. Good static awareness practices should be followed when handling this product such as discharging any built up static charge to the product chassis prior to handling terminals or test connections.
- When the product is used with data I/O cables in excess of 3 m.

Analog Low Isolation 20 V

Line Power Line Voltage (selectable)

120 V~ 100 V to 120 V

240 V~ 220 V to 240 V

Line Frequency 47 to 63 Hz

Line Voltage Variation ±10 % about setting

Power Consumption 15 VA maximum

Dimensions

Height 14.6 cm (5.75 inch)

Width 44.5 cm (17.5 inch)

Depth 29.8 cm (11.75 inch) overall

Weight (without options) 4.24 kg (9.35 lb)

DC Voltage Specifications, Output

Ranges ^[1]	Absolute Uncertainty, tcal ±5°C, ±(ppm of output +µV)				Stability	Resolution	Maximum Burden ^[2]
	90 Days		1 Year		24 hours, ±1 °C ±(ppm of output +µV)		
0 mV to 100.000 mV	25	3	30	3	5 ppm + 2 µV	1 µV	10 mA
0 V to 1.00000 V	25	10	30	10	4 ppm + 10 µV	10 µV	10 mA
0 V to 10.0000 V	25	100	30	100	4 ppm + 100 µV	100 µV	10 mA
0 V to 100.000 V	25	1 mV	30	1 mV	5 ppm + 1 mV	1 mV	1 mA
TC Output and Input							
-10 to 75.000 mV	25	2 µV	30	2 µV	5 ppm + 2 µV	1 µV	10 Ω
[1] All outputs are positive only, unless otherwise noted.							
[2] Remote sensing is not provided. Output resistance is <1 Ω							

Noise		
Ranges	Bandwidth 0.1 to 10 Hz p-p $\pm(\text{ppm of output} + \mu\text{V})$	Bandwidth 10 Hz to 10 kHz rms μV
0 mV to 100.000 mV	1 μV	6 μV
0 V to 1.00000 V	10 μV	60 μV
0 V to 10.0000 V	100 μV	600 μV
0 V to 100.000 V	10 ppm + 1 mV	20 mV

DC Voltage Specifications, Isolated Input

Ranges	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$, $\pm(\text{ppm of reading} + \text{mV})$		Resolution
0 V to 10.0000 V	50	0.2	100 μV
0 V to 100.000 V	50	2.0	1 mV

DC Current Specifications, Output

Ranges ^[1]	Absolute Uncertainty, tcal ±5 °C, ± (ppm of output + µA)				Resolution	Maximum Compliance Voltage	Maximum Inductive Load
	90 Days		1 Year				
0 mA to 100.000 mA	40 ^[2]	1	50 ^[2]	1	1 µA	12 V	100 mH
[1] All outputs are positive only.							
[2] For line voltages less than 95 V (+100 ppm of reading)							

Ranges	Noise	
	Bandwidth 0.1 to 10 Hz p-p	Bandwidth 10 Hz to 10 kHz rms μV
0 mA to 100.000 mA	2000 nA	20 μA

DC Current Specifications, Isolated Input

Ranges	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$, $\pm(\text{ppm of reading} + \mu\text{A})$		Resolution
0 mA to 50.0000 mA	100	1	0.1 μA
0 mA to 24.0000 mA (Loop Power) ^{[1][2]}	100	1	0.1 μA
[1] Loop Power: 24 V $\pm 10\%$ [2] HART Resistor: 250 $\Omega \pm 3\%$			

Resistance Specifications, Output

Ranges	Absolute Uncertainty, tcal $\pm 5^{\circ}\text{C}$, $\pm \text{Ohms}$		Resolution	Nominal Current ^[1]
	90 Days	1 Year		
5 Ω to 400.000 Ω	0.012	0.015	0.001 Ω	1 to 3 mA
5 Ω to 4.00000 k Ω	0.25	0.3	0.01 Ω	100 μA to 1 mA
[1] For currents lower than shown, the specification becomes New Spec. = Stated Spec. $\times \text{Imin}/\text{Iactual}$. For example, a 500 μA stimulus that measures 100 Ω has a specification of: 0.015 $\Omega \times 1 \text{ mA}/500 \mu\text{A} = 0.03 \Omega$				

Resistance Specifications, Input

Ranges	Absolute Uncertainty, tcal $\pm 5\text{ }^{\circ}\text{C} \pm [\text{ppm of reading} + \Omega]$		Resolution	Stimulus Current
	90 Days	1 Year		
0 Ω to 400.000 Ω	$\pm 20\text{ ppm} + 0.0035\text{ } \Omega$	$\pm 20\text{ ppm} + 0.004\text{ } \Omega$	0.001 Ω	1 mA
0 k Ω to 4.00000 k Ω	$\pm 20\text{ ppm} + 0.035\text{ } \Omega$	$\pm 20\text{ ppm} + 0.04\text{ } \Omega$	0.01 Ω	0.1 mA

Thermocouple Specification, Output and Input

TC Type	Range ($^{\circ}\text{C}$)		Absolute Uncertainty, tcal $\pm 5\text{ }^{\circ}\text{C}$, $\pm (^{\circ}\text{C})$ ^[1]	
			Output/Input	
	Minimum	Maximum	90 days	1 Year
B	600 $^{\circ}\text{C}$	800 $^{\circ}\text{C}$	0.35 $^{\circ}\text{C}$	0.35 $^{\circ}\text{C}$
	800 $^{\circ}\text{C}$	1550 $^{\circ}\text{C}$	0.28 $^{\circ}\text{C}$	0.28 $^{\circ}\text{C}$
	1550 $^{\circ}\text{C}$	1820 $^{\circ}\text{C}$	0.21 $^{\circ}\text{C}$	0.22 $^{\circ}\text{C}$
C	0 $^{\circ}\text{C}$	1000 $^{\circ}\text{C}$	0.15 $^{\circ}\text{C}$	0.16 $^{\circ}\text{C}$
	1000 $^{\circ}\text{C}$	1800 $^{\circ}\text{C}$	0.22 $^{\circ}\text{C}$	0.23 $^{\circ}\text{C}$
	1800 $^{\circ}\text{C}$	2000 $^{\circ}\text{C}$	0.24 $^{\circ}\text{C}$	0.26 $^{\circ}\text{C}$
	2000 $^{\circ}\text{C}$	2316 $^{\circ}\text{C}$	0.32 $^{\circ}\text{C}$	0.35 $^{\circ}\text{C}$
E	-250 $^{\circ}\text{C}$	-200 $^{\circ}\text{C}$	0.24 $^{\circ}\text{C}$	0.25 $^{\circ}\text{C}$
	-200 $^{\circ}\text{C}$	-100 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$
	-100 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	600 $^{\circ}\text{C}$	0.06 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$
	600 $^{\circ}\text{C}$	1000 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
J	-210 $^{\circ}\text{C}$	-100 $^{\circ}\text{C}$	0.13 $^{\circ}\text{C}$	0.14 $^{\circ}\text{C}$
	-100 $^{\circ}\text{C}$	800 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
	800 $^{\circ}\text{C}$	1200 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
K	-250 $^{\circ}\text{C}$	-200 $^{\circ}\text{C}$	0.45 $^{\circ}\text{C}$	0.46 $^{\circ}\text{C}$
	-200 $^{\circ}\text{C}$	-100 $^{\circ}\text{C}$	0.15 $^{\circ}\text{C}$	0.16 $^{\circ}\text{C}$
	-100 $^{\circ}\text{C}$	500 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
	500 $^{\circ}\text{C}$	800 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
	800 $^{\circ}\text{C}$	1372 $^{\circ}\text{C}$	0.11 $^{\circ}\text{C}$	0.13 $^{\circ}\text{C}$
L	-200 $^{\circ}\text{C}$	-100 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
	-100 $^{\circ}\text{C}$	900 $^{\circ}\text{C}$	0.07 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$
N	-250 $^{\circ}\text{C}$	-200 $^{\circ}\text{C}$	0.72 $^{\circ}\text{C}$	0.73 $^{\circ}\text{C}$
	-200 $^{\circ}\text{C}$	-100 $^{\circ}\text{C}$	0.22 $^{\circ}\text{C}$	0.23 $^{\circ}\text{C}$
	-100 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.11 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.09 $^{\circ}\text{C}$	0.11 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	800 $^{\circ}\text{C}$	0.08 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$
	800 $^{\circ}\text{C}$	1300 $^{\circ}\text{C}$	0.10 $^{\circ}\text{C}$	0.12 $^{\circ}\text{C}$
R	-50 $^{\circ}\text{C}$	-25 $^{\circ}\text{C}$	0.54 $^{\circ}\text{C}$	0.55 $^{\circ}\text{C}$
	-25 $^{\circ}\text{C}$	0 $^{\circ}\text{C}$	0.44 $^{\circ}\text{C}$	0.45 $^{\circ}\text{C}$
	0 $^{\circ}\text{C}$	100 $^{\circ}\text{C}$	0.38 $^{\circ}\text{C}$	0.39 $^{\circ}\text{C}$
	100 $^{\circ}\text{C}$	400 $^{\circ}\text{C}$	0.27 $^{\circ}\text{C}$	0.28 $^{\circ}\text{C}$
	400 $^{\circ}\text{C}$	600 $^{\circ}\text{C}$	0.21 $^{\circ}\text{C}$	0.22 $^{\circ}\text{C}$
	600 $^{\circ}\text{C}$	1000 $^{\circ}\text{C}$	0.19 $^{\circ}\text{C}$	0.21 $^{\circ}\text{C}$
	1000 $^{\circ}\text{C}$	1600 $^{\circ}\text{C}$	0.18 $^{\circ}\text{C}$	0.19 $^{\circ}\text{C}$
	1600 $^{\circ}\text{C}$	1767 $^{\circ}\text{C}$	0.21 $^{\circ}\text{C}$	0.23 $^{\circ}\text{C}$

S	-50 °C	-25 °C	0.51 °C	0.51 °C
	-25 °C	0 °C	0.43 °C	0.43 °C
	0 °C	100 °C	0.37 °C	0.38 °C
	100 °C	400 °C	0.28 °C	0.29 °C
	400 °C	600 °C	0.22 °C	0.23 °C
	600 °C	1000 °C	0.21 °C	0.22 °C
	1000 °C	1600 °C	0.20 °C	0.22 °C
	1600 °C	1767 °C	0.24 °C	0.26 °C
T	-250 °C	-200 °C	0.34 °C	0.35 °C
	-200 °C	-100 °C	0.14 °C	0.16 °C
	-100 °C	0 °C	0.09 °C	0.11 °C
	0 °C	200 °C	0.07 °C	0.09 °C
	200 °C	400 °C	0.06 °C	0.09 °C
U	-200 °C	0 °C	0.15 °C	0.16 °C
	0 °C	200 °C	0.08 °C	0.10 °C
	200 °C	600 °C	0.07 °C	0.10 °C
XK	-200 °C	-100 °C	0.10 °C	0.11 °C
	-100 °C	0 °C	0.07 °C	0.09 °C
	0 °C	600 °C	0.06 °C	0.08 °C
	600 °C	800 °C	0.07 °C	0.09 °C
BP	0 °C	200 °C	0.17 °C	0.18 °C
	200 °C	600 °C	0.14 °C	0.16 °C
	600 °C	800 °C	0.15 °C	0.17 °C
	800 °C	1600 °C	0.22 °C	0.23 °C
	1600 °C	2000 °C	0.26 °C	0.28 °C
	2000 °C	2500 °C	0.38 °C	0.40 °C
[1] Does not include thermocouple wire error. Type B, E, J, K, N, R, S and T are based on ITS-90 Type L and U are based on DIN 43710-1985 Type C is based on ASTM standard E 988-96 Type XK and BP are based on GOST R 8.585-2001				

RTD and Thermistor Specification, Output

RTD Types	Range °C		Absolute Uncertainty, tcal ±5 °C ±(°C) ^[1]	
	Minimum	Maximum	90 Days	1 Year
Pt 385, 100 Ω	-200 °C	800 °C	0.04 °C	0.05 °C
Pt 3926, 100 Ω	-200 °C	630 °C	0.04 °C	0.05 °C
Pt 3916, 100 Ω	-200 °C	630 °C	0.04 °C	0.05 °C
Pt 385, 200 Ω	-200 °C	400 °C	0.35 °C	0.40 °C
	400 °C	630 °C	0.42 °C	0.50 °C
Pt 385, 500 Ω	-200 °C	630 °C	0.15 °C	0.17 °C
Pt 385, 1000 Ω	-200 °C	630 °C	0.07 °C	0.09 °C
Ni 120, 120 Ω	-80 °C	260 °C	0.02 °C	0.02 °C
Cu 427, 10 Ω ^[2]	-100 °C	260 °C	0.30 °C	0.38 °C
YSI 400	15 °C	50 °C	0.005 °C	0.007 °C
[1] 2-wire output [2] Based on MINCO Application Aid No. 18				

RTD and Thermistor Specification, Input

RTD Type	Range (°C)		Absolute Uncertainty, tcal ±5 °C, ±(°C) ^[1]	
	Minimum	Maximum	Output/Input	
			90 Days	1 Year
Pt 385, 100 Ω	-200 °C	-80 °C	0.012 °C	0.013 °C
	-80 °C	100 °C	0.018 °C	0.020 °C
	100 °C	300 °C	0.022 °C	0.024 °C
	300 °C	400 °C	0.025 °C	0.026 °C
	400 °C	630 °C	0.031 °C	0.033 °C
	630 °C	800 °C	0.037 °C	0.038 °C
Pt 3926, 100 Ω	-200 °C	-80 °C	0.012 °C	0.013 °C
	-80 °C	0 °C	0.014 °C	0.015 °C
	0 °C	100 °C	0.016 °C	0.017 °C
	100 °C	300 °C	0.022 °C	0.022 °C
	300 °C	400 °C	0.022 °C	0.026 °C
	400 °C	630 °C	0.024 °C	0.032 °C
Pt 3916, 100 Ω	-200 °C	-190 °C	0.009 °C	0.010 °C
	-190 °C	-80 °C	0.012 °C	0.013 °C
	-80 °C	0 °C	0.014 °C	0.015 °C
	0 °C	100 °C	0.016 °C	0.017 °C
	100 °C	300 °C	0.021 °C	0.022 °C
	300 °C	400 °C	0.024 °C	0.026 °C
	400 °C	600 °C	0.030 °C	0.031 °C
	600 °C	630 °C	0.031 °C	0.033 °C
Pt 385, 200 Ω	-200 °C	-80 °C	0.047 °C	0.053 °C
	-80 °C	0 °C	0.050 °C	0.056 °C
	0 °C	100 °C	0.053 °C	0.060 °C
	100 °C	260 °C	0.054 °C	0.060 °C
	260 °C	300 °C	0.062 °C	0.069 °C
	300 °C	400 °C	0.064 °C	0.071 °C
	400 °C	630 °C	0.079 °C	0.088 °C
Pt 385, 500 Ω	-200 °C	0 °C	0.023 °C	0.025 °C
	0 °C	100 °C	0.026 °C	0.028 °C
	100 °C	300 °C	0.031 °C	0.034 °C
	300 °C	400 °C	0.035 °C	0.038 °C
	400 °C	630 °C	0.041 °C	0.045 °C
Pt 385, 1000 Ω	-200 °C	0 °C	0.014 °C	0.015 °C
	0 °C	100 °C	0.017 °C	0.018 °C
	100 °C	300 °C	0.022 °C	0.024 °C
	300 °C	400 °C	0.024 °C	0.026 °C
	400 °C	630 °C	0.031 °C	0.033 °C
Ni 120, 120 Ω	-80 °C	260 °C	0.008 °C	0.009 °C
Cu 427, 10 Ω ^[2]	-100 °C	260 °C	0.097 °C	0.110 °C
YSI 400	15 °C	50 °C	0.005 °C	0.007 °C
SPRT	-200 °C	660 °C	0.05 °C	0.06 °C
^[1] 4-wire mode. Uncertainties shown do not include probe uncertainties. ^[2] Based on MINCO Application Aid No. 18.				

Pressure Measurement Specifications

The Calibrator can accept the Fluke 700 or 525A-P Series pressure modules. Pressure modules connect directly into the front panel Lemo connector with the Calibrator firmware auto-detecting the type and value of the module you connect.

Range	Accuracy and Resolution	Units
Determined by the pressure module	Determined by the pressure module	PSI (pounds per square inch)
		in H2O 4 °C (inches of water at 4 degrees Celsius)
		in H2O 20 °C (inches of water at 20 degrees Celsius)
		in H2O 60 °C (inches of water at 60 degrees Fahrenheit)
		cm H2O 4 °C (centimeters of water at 4 degrees Celsius)
		cm H2O 20 °C (centimeters of water at 20 degrees Celsius)
		mm H2O 4 °C (millimeters of water at 4 degrees Celsius)
		mm H2O 20 °C (millimeters of water at 20 degrees Celsius)
		BAR (bars)
		mBAR (millibars)
		kPa (kilopascals)
		MPa (megapascals)
		in HG 0 °C (inches of mercury at 0 degrees Celsius)
		mm HG 0 °C (millimeters of mercury at 0 degrees Celsius)
		kg/cm2 (kilograms per square centimeter)

Switch Test Specifications, Isolated Input

Contact Closure Resistance	< 1 kΩ
Excitation Current	27 mA Max

Ordering Information

7526A Precision Process Calibrator	
Model	Description
7526A	Precision Process Calibrator
	Includes traceable calibration report, user manual CD, getting started guide, power cord, thermocouple shorting jumper and USB-to-serial adapter cable

Recommended Accessories	
Model	Description
Y7526A	Rack Mount Kit
7526A-CASE	Carrying Case
5520A-525A/LEADS	Thermocouple and Test Leads Set

Fluke 700 Series Pressure Modules		
Type	Model	Range
Differential	FLUKE-700P00	1 in. H ₂ O (0.25 kPa)
	FLUKE-700P01	10 in. H ₂ O (2.5 kPa)
	FLUKE-700P02	1 psi (6900 Pa)
	FLUKE-700P22	1 psi (6900 Pa)
	FLUKE-700P03	5 psi (34 kPa)
	FLUKE-700P23	5 psi (34 kPa)
	FLUKE-700P04	15 psi (103 kPa)
	FLUKE-700P24	15 psi (103 kPa)
Gage	FLUKE-700P05	30 psi (207 kPa)
	FLUKE-700P06	100 psi (690 kPa)
	FLUKE-700P27	300 psi (2070 kPa)
	FLUKE-700P07	500 psi (3400 kPa)
	FLUKE-700P08	1000 psi (6900 kPa)
	FLUKE-700P09	1500 psi (10 Mpa)
Absolute	FLUKE-700PA3	5 psi (34 kPa)
	FLUKE-700PA4	15 psi (103 kPa)
	FLUKE-700PA5	30 psi (207 kPa)
	FLUKE-700PA6	100 psi (690 kPa)
Vacuum	FLUKE-700PV3	-5 psi (-34 kPa)
	FLUKE-700PV4	-15 psi (-103 kPa)
Dual	FLUKE-700PD2	±1 psi (±6900 Pa)
	FLUKE-700PD3	±5 psi (±34 kPa)
	FLUKE-700PD4	±15 psi (±103 kPa)
	FLUKE-700PD5	-15 psi to 30 psi (-100 to 207 kPa)
	FLUKE-700PD6	-15 psi to 100 psi (-100 to 690 kPa)
	FLUKE-700PD7	-15 psi to 200 psi (-100 to 1380 kPa)
High	FLUKE-700P29	3000 psi (20.7 MPa)
	FLUKE-700P30	5000 psi (34 MPa)
	FLUKE-700P31	10 000 psi (69 MPa)

Pumps and Accessories	
Model	Description
FLUKE-700PTP-1	Pneumatic Test Pump
FLUKE-700LTP-1	Low-pressure Test Pump
FLUKE-700PRV-1	Pressure Relief Valve Kit

Comparison Test Pumps	
Model	Description
P5510-2M	Pneumatic Test Pump, vacuum to 300 psi (2 MPa)
P5513-20M	Pneumatic Test Pump, vacuum to 3000 psi (20 MPa)
P5514-70M	Hydraulic Test Pump, 0 psi to 10 000 psi (70 MPa)
P5515-140M	Hydraulic Test Pump, 0 psi to 20 000 psi (140 MPa)

Hydraulic Test Pump	
Model	Description
FLUKE-700HTH-1	Hydraulic Test Hose
FLUKE-700HTP-2	Hydraulic Test Pump, 10 000 PSI (690 bar)

700 PMP Pressure Pump	
Model	Description
Fluke-71X	Hose Kit Accessory
FLUKE-700ILF	In-line Filter

Pressure Calibration Kit	
Model	Description
FLUKE-700PCK	Pressure Calibration Kit

Thermocouple Plug Kit	
Model	Description
FLUKE-700TC1	TC Mini-Plug Kit, Types J,K,T,E,R/S,B/Cu,L,U,C,N
FLUKE-700TC2	TC Mini-Plug Kit, Types J,K,T,E,R,S

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Electrical	RF	Temperature	Pressure	Flow	Software
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Printed in U.S.A. 10/2013 4264410B_EN
Pub-ID: 11980-eng

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