

Fluke 725 Multifunction
Calibrator



Simultaneous Function Capability	Channel A	Channel B
24.000 mA DC	M	M or S
24.000 mA DC with 24V loop supply	M	
100.00 mV DC		M or S
30.000V DC Measure	M	
20.000V DC Measure 10.000V DC Source		M or S
15 to 3200 Ohms		M or S
Thermocouple J, K, T, E, R, S, B, L, U, N		M or S
RTD Ni120; Pt100 (392); Pt100 (JIS); Pt100, 200, 500, 1000 (385)		M or S
Pressure (requires Fluke 700PXX Modules)	M	M used as S
Frequency; Squarewave, 1 CPM to 10 kHz; fixed amplitude 5V p-p		M or S

M = Measure S = Source/Simulate

Simply Powerful!

The new Fluke 725 Multifunction Process Calibrator is a powerful yet easy-to-use field calibrator. Use the measure and source functions to test and calibrate almost any process parameter.

- Small, streamlined shape makes it easy to carry
- Rugged, reliable design stands up to field use
- Easy to read measure/source screen lets you view input and output simultaneously
- Measure volts, mA, RTDs, thermocouples, frequency, and ohms to test sensors and transmitters
- Source/simulate volts, mA, thermocouples, RTDs, frequency, and ohms to calibrate transmitters
- Measure/source pressure using any of 28 Fluke 700Pxx Pressure Modules
- Source mA with simultaneous pressure measurement to conduct valve and I/P tests
- Support flow meter testing with frequency and CPM functions
- Perform fast linearity tests with auto step and auto ramp features
- Power transmitters during test using loop supply with simultaneous mA measurement
- Store frequently-used test setups for later use
- Backlight lets you work in poor light
- Remote interface allows benchtop automated operations
- Large battery capacity of four AA cells
- Battery door for easy changes

Fluke. *Keeping your world up and running.*

Ordering information

Fluke 725 Multifunction Process Calibrator
Each calibrator includes: TL75 Test Leads, AC70A Test Clips, one pair of stackable test leads, Users Manuals appropriate to country of destination (English, plus three of: French, German, Spanish, Italian, Dutch, Norwegian, Danish, Swedish, Finnish, Portuguese, Korean, Chinese, and Japanese), Statement of Quality Assurance Practices; CE and CSA markings.

Specifications

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

Function Measure or Source	Range	Resolution	Accuracy	Notes
Voltage	0 to 100 mV 0 to 10V (source) 0 to 30V (measure)	0.01 mV 0.01V 0.01V	.02% Rdg + 2 LSD	Max load, 1 mA
mA	0 to 24	0.001 mA	.02% Rdg + 2 LSD	Max load, 1000Ω
mV (TC terminals)	-10.00 mV to +75.00 mV	.01 mV	.025% of range + 1 LSD	
Resistance	15Ω to 3200Ω	0.01Ω to 0.1Ω	0.10Ω to 1.0Ω	
Frequency	2.0 to 1000.0 CPM 1 to 1000 Hz 1.0 to 10.0 kHz	0.1 CPM 1 Hz 0.1 kHz	±.05% ±.05% ±.25%	For frequency source, waveform is 5V p-p squarewave, -0.1V offset
Loop Supply	24V dc	N/A	10%	

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

Thermocouple accuracy specifications

Thermocouple	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 400°C	1.5°C 0.9°C
Resolution		
J, K, T, E, L, N, U		0.1°C, 0.1°F
B, R, S		1°C, 1°F
Notes		
Accuracy specifications include 0.2°C cold junction uncertainty.		

RTD ranges and accuracy specifications

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 (JIS)	-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 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 0.3°C	0.2°C 0.2°C
Resolution			
RTD	0.1°C, 0.1°F		

General specifications

Maximum voltage: 30V
Storage temperature: -40°C to 71°C
Operating temperature: 10°C to 55°C
Relative humidity: 95% (10°C to 35°C); 75% (30°C to 40°C); 45% (40°C to 50°C); 35% (50°C to 55°C)
Shock: 30g, 11ms, half-sine shock (or 1meter drop test)
Vibration: Random, 2g, 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 inches) 650g (23 oz)
Battery: Four AA alkaline batteries. Battery life: 25 hours typical
Warranty: Three years

Fluke 721 and 721Ex Precision Pressure Calibrators

Technical Data

Pressure calibration and temperature measurement for custody transfer applications

The Fluke 721 and 721Ex Precision Pressure Calibrators with dual isolated pressure sensors are the ideal tool for gas custody transfer applications allowing you to take simultaneous static and differential pressure measurements with a single tool.



Product highlights

The 721 and 721Ex can be configured by selecting either a 16 PSI (1.1 bar) or 36 psi (2.48 bar) low pressure sensor then add any of 7 high pressure ranges including 100, 300, 500, 1000, 1500, 3000 or 5000 psi (6.9, 20, 24.5, 69, 103.4, 200, 345 bar).

- Intrinsically Safe (721Ex version only) – IECEx and Atex Ex ia IIB T3 Gb (Zone 1)
- Ideal for gas flow calibration (custody transfer) applications
- Two isolated, stainless steel, pressure sensors with 0.025 % accuracy
- Switch test on both pressure inputs
- Pressure displayed in the user's choice of 19 engineering units
- Pt100 RTD input for temperature measurement, (probe optional)
- Measures 4 to 20 mA signals
- Internal 24 V loop power supply can power a transmitter under test (721 models only)
- Measure up to 30 V dc, check 24 V loop power supplies (721 models only)
- Extend pressure measurement range with connection to one of 50 external 750 series pressure modules from 0 to 1 inH₂O to 10,000 psi (2.5 mBar to 690 bar) (721 models only)
- Large backlit graphic display can display up to three inputs simultaneously
- Store five instrument setups for recall and use

Specifications 1-year

		Low pressure sensor			High pressure sensor		
Model	Description	Range sensor 1	Resolution sensor 1	Accuracy sensor 1	Range sensor 2	Resolution sensor 2	Accuracy sensor 2
Fluke-721-1601 Fluke-721Ex-1601	Dual Sensor Pressure Calibrator, 16 PSIG, 100 PSIG	-14 psi to +16 psi -0.97 bar to 1.1 bar	0.001 psi, 0.0001 bar	0.025 % of full scale	-12 psi to +100 psi -0.83 bar to 6.9 bar	0.01 psi 0.0001 bar	0.025 % of full scale
Fluke-721-1603 Fluke-721Ex-1603	Dual Sensor Pressure Calibrator, 16 PSIG, 300 PSIG				-12 psi to +300 psi -0.83 bar to 20 bar	0.01 psi 0.001 bar	
Fluke-721-1605 Fluke-721Ex-1605	Dual Sensor Pressure Calibrator, 16 PSIG, 500 PSIG				-12 psi to +500 psi -0.83 bar to 34.5 bar	0.01 psi 0.001 bar	
Fluke-721-1610 Fluke-721Ex-1610	Dual Sensor Pressure Calibrator, 16 PSIG, 1000 PSIG				0 psi to +1000 psi 0.00 bar to 69 bar	0.1 psi 0.001 bar	
Fluke-721-1615 Fluke-721Ex-1615	Dual Sensor Pressure Calibrator, 16 PSIG, 1500 PSIG				0 psi to +1500 psi 0.00 bar to 103.4 bar	0.1 psi 0.001 bar	
Fluke-721-1630 Fluke-721Ex-1630	Dual Sensor Pressure Calibrator, 16 PSIG, 3000 PSIG				0 psi to +3000 psi 0.00 bar to 200 bar	0.1 psi 0.01 bar	
Fluke-721-1650 Fluke-721Ex-1650	Dual Sensor Pressure Calibrator, 16 PSIG, 5000 PSIG				0 psi to +5000 psi 0.00 bar to 345 bar	0.1 psi 0.01 bar	0.035 % of full scale
Fluke-721-3601 Fluke-721Ex-3601	Dual Sensor Pressure Calibrator, 36 PSIG, 100 PSIG	-14 psi to +36 psi -0.97 bar to 2.48 bar	0.001 psi, 0.0001 bar	0.025 % of full scale	-12 to +100 psi -0.83 bar to 6.9 bar	.01 psi 0.0001 bar	0.025% of full scale
Fluke-721-3603 Fluke-721Ex-3603	Dual Sensor Pressure Calibrator, 36 PSIG, 300 PSIG				-12 psi to +300 psi -0.83 bar to 20 bar	0.01 psi 0.001 bar	
Fluke-721-3605 Fluke-721Ex-3605	Dual Sensor Pressure Calibrator, 36 PSIG, 500 PSIG				-12 psi to +500 psi -0.83 bar to 34.5 bar	0.01 psi 0.001 bar	
Fluke-721-3610 Fluke-721Ex-3610	Dual Sensor Pressure Calibrator, 36 PSIG, 1000 PSIG				0 psi to +1000 psi 0.00 bar to 69 bar	0.1 psi 0.001 bar	
Fluke-721-3615 Fluke-721Ex-3615	Dual Sensor Pressure Calibrator, 36 PSIG, 1500 PSIG				0 psi to +1500 psi 0.00 bar to 103.4 bar	0.1 psi 0.01 bar	
Fluke-721-3630 Fluke-721Ex-3630	Dual Sensor Pressure Calibrator, 36 PSIG, 3000 PSIG				0 psi to +3000 psi 0.00 bar to 200 bar	0.1 psi 0.01 bar	
Fluke-721-3650 Fluke-721Ex-3650	Dual Sensor Pressure Calibrator, 36 PSIG, 5000 PSIG				0 psi to +5000 psi 0.00 bar to 345 bar	0.1 psi 0.01 bar	0.035 % of full scale

General specifications	
Instrument setup recall	Last used on power-up
Environmental	Operating temperature -10 °C to +50 °C (Fluke 721) Operating temperature -10 °C to +45 °C (Fluke 721Ex) Storage temperature (without batteries) -20 °C to +60 °C
Altitude	2,000 meters
Ingress protection	IP-40
Power requirements	6.0 v dc
Battery life	>35 hours, typical usage
Batteries required	(4) Standard AA cells
Dimensions (HxWxD)	7.9" X 4.3" X 2.3" (20 cm X 11 cm X 5.8 cm)
Weight	0.3539 kg (1 lb 3 oz)
Connectors/ports pressure	Two, 1/8 in NPT, 750P Series Pressure Module (721 models only); RTD Probe

Electrical and temperature measurement 1-year			
Function	Range	Resolution	Accuracy
mA measure	0 to 24 mA	0.001 mA	±0.015% of rdg ±0.002mA
VDC measure**	0 to 30 VDC	0.001V	±0.015% of rdg ±0.002V
*Temperature measurement (RTD/Ohms)	-40 °C to 150 °C (-40 °F to 302 °F)	0.01 °C, 0.01 °F	±0.015% of rdg ±0.02 ohms; ±0.1°C (±0.2°F) ±0.25 degC (±0.45 degF) combined uncertainty when using 720 RTD probe accessory
Loop power supply**	24V	N/A	24 mA @ 24V
*Temperature measurement requires optional Fluke-720RTD Pt-100 RTD probe available as an accessory **721 models only			

Temperature effect	
No effect on accuracy on all functions from 15 °C to 35 °C	
Add ± 0.002 % F.S./°C for temps outside of 15 °C to 35 °C	

Ordering information

Fluke-721-1601 Fluke-721Ex-1601	Dual Sensor Pressure Calibrator 16 PSIG, 100 PSIG
Fluke-721-1603 Fluke-721Ex-1603	Dual Sensor Pressure Calibrator 16 PSIG, 300 PSIG
Fluke-721-1605 Fluke-721Ex-1605	Dual Sensor Pressure Calibrator 16 PSIG, 500 PSIG
Fluke-721-1610 Fluke-721Ex-1610	Dual Sensor Pressure Calibrator 16 PSIG, 1000 PSIG
Fluke-721-1615 Fluke-721Ex-1615	Dual Sensor Pressure Calibrator 16 PSIG, 1500 PSIG
Fluke-721-1630 Fluke-721Ex-1630	Dual Sensor Pressure Calibrator 16 PSIG, 3000 PSIG
Fluke-721-1650 Fluke-721Ex-1650	Dual Sensor Pressure Calibrator 16 PSIG, 5000 PSIG
Fluke-721-3601 Fluke-721Ex-3601	Dual Sensor Pressure Calibrator 36 PSIG, 100 PSIG
Fluke-721-3603 Fluke-721Ex-3603	Dual Sensor Pressure Calibrator 36 PSIG, 300 PSIG
Fluke-721-3605 Fluke-721Ex-3605	Dual Sensor Pressure Calibrator 36 PSIG, 500 PSIG
Fluke-721-3610 Fluke-721Ex-3610	Dual Sensor Pressure Calibrator 36 PSIG, 1000 PSIG
Fluke-721-3615 Fluke-721Ex-3615	Dual Sensor Pressure Calibrator 36 PSIG, 1500 PSIG
Fluke-721-3630 Fluke-721Ex-3630	Dual Sensor Pressure Calibrator 36 PSIG, 3000 PSIG
Fluke-721-3650 Fluke-721Ex-3650	Dual Sensor Pressure Calibrator 36 PSIG, 5000 PSIG
Fluke-720RTD	RTD Probe for Fluke-721, 721Ex and 719Pro
Fluke-720URTD	Universal RTD adapter for Fluke-721, 721Ex and 719Pro

Included:

- Soft case
- Four (4) AA batteries
- Manual
- Traceable calibration certificate
- Test leads

721Ex Approval Details

ATEX	Ex ia IIB T3 Gb (Ta= -10... +45 °C)
	KEMA 10 ATEX 0168X
IECEX	Ex ia IIB T3 Gb (Ta= -10...+45 °C)
	II 2 G IECEX CSA 10.0013X

User selectable pressure engineering units

psi, bar, mbar, kPa, kgcm², cmH₂O@4°C, cmH₂O@20°C,
mH₂O@4°C, mH₂O@20°C, inH₂O@4°C, inH₂O@20°C,
inH₂O@60°F, mmHg@0°C, inHg@0°C, ftH₂O@4°C,
ftH₂O@20°C, ftH₂O@60°F