

## TECHNICAL DATA


# Fluke 725Ex Intrinsically Safe Multifunction Process Calibrator

## Simply powerful intrinsic safe calibration tool

## Technical Data

The Fluke 725Ex Intrinsically Safe Multifunction Process Calibrator is powerful yet easy-to-use. Combined with one of the (eight) Fluke 750PEX Pressure Modules, the 725Ex is able to calibrate almost any process instrument likely to need service in an area where explosive gasses may be present.

The Fluke 725Ex Intrinsically Safe Calibrator is a powerful, intrinsically safe, multifunction calibration solution that offers:

-  Class 1 Div. 1 Groups B, C and D  
Class 1 Zone 0 AEx/Ex ia IIB 171 °C  
Ta = -10 °C... +55 °C
- Measure volts dc, mA, RTDs, thermocouples, frequency and ohms
- Source or simulate volts dc, mA, RTDs, thermocouples, frequency and ohms
- Two channel simultaneous source and measure capability for calibration of transmitters
- Power transmitters with internal loop supply
- Store frequently-used test setups for later use
- Pressure measurement to 3,000 psi/200 bar using any of the 8 intrinsically safe Fluke 750PEX Pressure Modules
- Pressure switch test function (requires 750PEX module)
- Compact size and weight
- Simple, push-button user interface
- Rugged and reliable, for field use

The optional Fluke 750PEX Pressure Modules are ATEX-certified Ex II 1 G Ex ia IIC T4 Ga. They are also certified, Class 1, Division 1 areas Group A-D, T4 per NEC-500.



Simultaneous Function Capability	Channel A	Channel B
24.000 mA dc	M	M or S
24.000 mA dc with 24 V loop supply	M	
100.00 mV dc source, 90.00 mV dc measure		M or S
30.000 V dc measure	M	
10.000 V dc		M or S
15 to 3200 hms		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 750PEX Pressure Modules)	M	M uses as S
Frequency; Squarewave, 1 CPM to 10 kHz; fixed amplitude 5 V p-p		M or S

M = Measure S = Source/Simulate

## Ordering information

### Model

Fluke-725Ex Multifunction Process Calibrator

### Included accessories

Protective red holster, TL75 Test Leads, AC175 alligator clips, one pair of stackable test leads, Certificate of Calibration, Fluke 725Ex CCD control drawing, Statement of Quality Assurance Practices.



Class I Div. 1 Groups B, C, and D  
Class I Zone 0 AEx/Ex ia IIB 171 °C  
Ta = -10 °C... +55 °C

# 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 10 V (source) 0 to 30 V (measure)	0.01 mV 0.01 V 0.01 V	.02 % Rdg + 2 LSD	Max load, 1 mA
mA	0 to 24	0.001 mA	.02 % Rdg + 2 LSD	Max load, 250 Ω @ 20 mA
mV (TC terminals)	-10.00 mV to +75.00 mV	.01 mV	.025 % or range + 1 LSD	
Resistance	15 Ω to 3200 Ω	0.01 Ω to 0.1 Ω	0.10 W to 1.0 W	
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 5 V p-p squarewave, -0.1 V offset
Loop supply	12 V	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	Resolution
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 0.78 °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
<b>Resolution</b>		
J, K, T, E, L, N, U		0.1 °C, 0.1 °F
B, R, S		1 °C, 1 °F
<b>Notes</b>		
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 °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 0.3 °C	0.2 °C 0.2 °C
<b>Resolution</b>			
RTD	0.1 °F, 0.1 °F		

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## General specifications

Maximum voltage	30 V
Temperature	-40 °C to 71 °C (storage), -10 °C to 55 °C (operating)
Relative humidity	95 % (10 to 30 °C); 75 % (30 to 40 °C); 45 % (40 to 50 °C); 35 % (50 to 55 °C)
Shock	30 g, 11 ms, half-sine shock (or 1 meter drop test)
Vibration	Random, 2 g, 5-500 Hz
Size	7.9 in L x 3.8 in W x 1.9 in D (200 mm L x 96 mm W x 47 mm D)
Weight	23 oz (650 g)
Battery	Four AA alkaline batteries. Battery life: 25 hours typical
EMC	EN50082-1:1992 abd EN55022:1994 Class B
Warranty	Three years