FLUKE®

Fluke 725Ex Intrinsically Safe Multifunction Process Calibrator

Simply powerful intrinsically safe calibration tool

The new Fluke 725Ex Intrinsically Safe Multifunction Process Calibrator is powerful yet easy-to-use. Combined with the new Fluke 700PEx 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, new intrinsically safe, multifunction calibration solution that offers:

- ATEX ⟨Ex⟩ II 1G EEx ia IIB 171 °C Compliant
- I.S. Class I, Division 1 Groups B–D, 171 °C compliance
- 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 700PEx Pressure Modules
- Pressure switch test function to capture set, reset and deadband values
- Compact size and weight
- Simple, push-button user interface
- Rugged and reliable, for field use

Summary specifications

(18 °C to 28 °C for one year)

ATEX Compliant

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 0.001 V 0.001 V	0.02 % Rdg + 2 LSD	Max load, 1 mA
mA	0 to 24	0.001 mA	0.02 % Rdg + 2 LSD	Max load, 500 W @ 20 mA
mV (TC terminals)	–10.00 mV to +75.00 mV	0.01 mV	0.025 % or range + 1 LSD	
Resistance	15 Ω to 3200 Ω (source)	0.01 Ω to 0.1 Ω	0.10 Ω to 1.0 Ω	
Frequency	2.0 to 1000.0 CPM 1 to 1000 Hz 1 to 10.0 kHz	0.1 CPM 1 Hz 0.1 kHz	± 0.05 % ± 0.05 % ± 0.25 %	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

Features

Simultaneous Function Capability	Channel A	Channel B
24.000 mA DC	M	M or S
24.000 mA DC with loop supply	M	
100.00 mV DC		M or S
30.000 V DC Measure	M	
20.000 V DC Measure 10.000 V 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 (using Fluke 700PEX 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

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 (HxWxD)	200 x 96 x 47 mm
Weight	650 g
Battery	Four AA alkaline batteries. Battery life: 25 hours typical
Safety	ATEX Ⓔx (II 1G EEx ia IIB) 171 °C KEMA 04ATEX 1303X I.S. Class I, Div 1 Groups B–D, 171 °C compliant
EMC	EN50082-1:1992 abd EN55022:1994 Class B
Warranty	One year

Thermocouple accuracy specifications

Thermocouple	Measure or Source	
J	–200 to 0 °C	1.0 °C
	0 to 1200 °C	0.7 °C
K	–200 to 0 °C	1.2 °C
	0 to 1370 °C	0.78 °C
T	–200 to 0 °C	1.0 °C
	0 to 400 °C	0.8 °C
E	–200 to 0 °C	0.9 °C
	0 to 950 °C	0.7 °C
R	–20 to 0 °C	2.5 °C
	0 to 500 °C	1.8 °C
	500 to 1750 °C	1.4 °C
S	–20 to 0 °C	2.5 °C
	0 to 500 °C	1.8 °C
	500 to 1750 °C	1.5 °C
B	600 to 800 °C	2.2 °C
	800 to 1000 °C	1.8 °C
	1000 to 1800 °C	1.4 °C
L	–200 to 0 °C	0.85 °C
	0 to 900 °C	0.7 °C
U	–200 to 0 °C	1.1 °C
	0 to 400 °C	0.75 °C
N	200 to 0 °C	1.5 °C
	0 to 400 °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 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	0.2 °C	0.2 °C
	250 °C to 630 °C	0.8 °C	0.8 °C
Pt 500 – 385	–200 °C to 500 °C	0.3 °C	0.3 °C
	500 °C to 630 °C	0.4 °C	0.4 °C
Pt 1000 – 385	–200 °C to 100 °C	0.2 °C	0.2 °C
	100 °C to 630 °C	0.3 °C	0.2 °C
Resolution			
RTD	0.1 °F, 0.1 °F		

Ordering Information

Fluke-725Ex Intrinsically Safe Multifunction Process Calibrator

Each calibrator includes:

Protective red holster, TL 75 test leads, AC 72 test clips, one pair of stackable test leads, CD users manuals (English, French, German, Spanish, Italian, Dutch, Norwegian, Danish, Swedish, Finnish, Portugese, Korean, Chinese, Japanese), 725Ex CCD control drawing, Statement of Quality Assurance Practices, NIST traceable calibration certificate

Fluke 700Ex Intrinsically Safe Pressure Modules

To measure a wide range of pressure in an explosive endangered area the range of pressure modules is extended with 8 ATEX compliant models. These models are compatible with the Fluke 725Ex intrinsically safe pressure calibrator.

- ATEX ⟨Ex⟩ II 1G EEx ia IIC T4 Compliant
- Ranges from 2.5 mbar to 200 bar
- Choice of gage, differential and absolute modules
- Very high accuracy up to 0.025%
- Compatible with Fluke 725Ex and 718Ex
- Rugged cases protect the modules in harsh environments

Pressure Module Specifications

ATEX Compliant

Model	Range (approx)	Resolution	Reference Uncertainty (23 ± 3 °C)	High Side media	Low side media	Fitting material	Max overpressure[2]
Differential							
Fluke-700P01Ex	25 mbar	0.01 mbar	0.2%	Dry [1]	Dry	316 SS	3x
Fluke-700P24Ex	1001 mbar	0.1 mbar	0.025%	316 SS	Dry	316 SS	3x
Gage							
Fluke-700P05Ex	2 bar	0.1 mbar	0.025%	316 SS	N/A	316 SS	3x
Fluke-700P06Ex	7 bar	0.7 mbar	0.025%	316 SS	N/A	316 SS	3x
Fluke-700P27Ex	20 bar	1 mbar	0.025%	316 SS	N/A	316 SS	3x
Fluke-700P09Ex	100 bar	10 mbar	0.025%	316 SS	N/A	316 SS	2x
Absolute							
Fluke-700PA4Ex	1000 mbar	0.1 mbar	0.05%	316 SS	N/A	316 SS	3x
High							
Fluke-700P29Ex	200 bar	0.01 bar	0.05%	C276	N/A	C276	2x

1) "Dry" indicates dry air or non-corrosive gas as compatible media. "316 SS" indicates media compatible with Type 316 Stainless Steel. "C276" indicates media compatible with Hastelloy C276.
2) Maximum overpressure specification includes common mode pressure.

General Specifications

Pressure module output	LEMO connector
Operating temperature	-10 °C to 55 °C
Non-operating temperature	-40 °C to 60 °C
Relative humidity (%RH operating without condensation)	95 % (10 to 30 °C) 75 % (30 to 40 °C) 45 % (40 to 50 °C) 35 % (50 to 55 °C)
Vibration	Random, 2g, 5-500 Hz
Shock	1 Meter Drop test
Safety	ATEX ⟨Ex⟩ II 1G EEx ia IIC T4 Compliant CSA Certification I.S. Class I, Div 1 Groups A-D , T4
Warranty	1 year

Ordering Information

Fluke-700P01Ex Pressure Module (25 mbar)
Fluke-700P24Ex Pressure Module (1001 mbar)
Fluke-700P05Ex Pressure Module (2 bar)
Fluke-700P06Ex Pressure Module (7 bar)
Fluke-700P27Ex Pressure Module (20 bar)
Fluke-700P09Ex Pressure Module (100 bar)
Fluke-700PA4Ex Pressure Module (1000 mbar)
Fluke-700P29Ex Pressure Module (200 bar)

FLUKE®

Process Tools Family

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