

## Fluke 725Ex Intrinsically Safe Multifunction Process Calibrator

Simply powerful intrinsic safe calibration tool

### Technical Data

The new Fluke 725Ex Intrinsically Safe Multifunction Process Calibrator is powerful yet easy-to-use. Combined with one of the (eight) 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 II 1G EEx ia IIB 171 °C KEMA 04ATEX 1303X
- 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 (requires 700PEX module)
- Compact size and weight
- Simple, push-button user interface
- Rugged and reliable, for field use

The optional Fluke 700PEX Pressure Modules are ATEX-certified Ex II 1 G EEx ia IIC T4. They are also certified by CSA I.S. Class 1, Division 1 areas Group A-D 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 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 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, AC70A test clips, one pair of stackable test leads, CD users manuals (English, French, German, Spanish, Italian, Dutch, Norwegian, Danish, Swedish, Finnish, Portuguese, Korean, Chinese, Japanese), Fluke 725Ex CCD control drawing, Statement of Quality Assurance Practices



CE 0344



I.S. Class I Div 1 Groups B-D 171 °C  
AEx ia IIB 171 °C

II 1 G EEx ia IIB 171 °C  
KEMA 04 ATEX 1303X

Ta = -10 °C to +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<br>0 to 10 V (source)<br>0 to 30 V (measure) | 0.01 mV<br>0.01 V<br>0.01 V | .02 % Rdg + 2 LSD             | Max load, 1 mA                                                      |
| mA                         | 0 to 24                                                  | 0.001 mA                    | .02 % Rdg + 2 LSD             | Max load, 500 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<br>1 to 1000 Hz<br>1.0 to 10.0 kHz     | 0.1 CPM<br>1 Hz<br>0.1 kHz  | ± .05 %<br>± .05 %<br>± .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                                  |                            |
|-------------------------------------------------------------------|----------------------------------------------------|----------------------------|
| J                                                                 | -200 to 0 °C<br>0 to 1200 °C                       | 1.0 °C<br>0.7 °C           |
| K                                                                 | -200 to 0 °C<br>0 to 1370 °C                       | 1.2 °C<br>0.78 °C          |
| T                                                                 | -200 to 0 °C<br>0 to 400 °C                        | 1.0 °C<br>0.8 °C           |
| E                                                                 | -200 to 0 °C<br>0 to 950 °C                        | 0.9 °C<br>0.7 °C           |
| R                                                                 | -20 to 0 °C<br>0 to 500 °C<br>500 to 1750 °C       | 2.5 °C<br>1.8 °C<br>1.4 °C |
| S                                                                 | -20 to 0 °C<br>0 to 500 °C<br>500 to 1750 °C       | 2.5 °C<br>1.8 °C<br>1.5 °C |
| B                                                                 | 600 to 800 °C<br>800 to 1000 °C<br>1000 to 1800 °C | 2.2 °C<br>1.8 °C<br>1.4 °C |
| L                                                                 | -200 to 0 °C<br>0 to 900 °C                        | 0.85 °C<br>0.7 °C          |
| U                                                                 | -200 to 0 °C<br>0 to 400 °C                        | 1.1 °C<br>0.75 °C          |
| N                                                                 | -200 to 0 °C<br>0 to 400 °C                        | 1.5 °C<br>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<br>250 °C to 630 °C | 0.2 °C<br>0.8 °C | 0.2 °C<br>0.8 °C |
| Pt 500 – 385                     | -200 °C to 500 °C<br>500 °C to 630 °C | 0.3 °C<br>0.4 °C | 0.3 °C<br>0.4 °C |
| Pt 1000 – 385                    | -200 °C to 100 °C<br>100 °C to 630 °C | 0.2 °C<br>0.3 °C | 0.2 °C<br>0.2 °C |
| <b>Resolution</b>                |                                       |                  |                  |
| RTD                              | 0.1 °F, 0.1 °F                        |                  |                  |

## 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                                                                    |

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