

# 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 inH<sub>2</sub>O 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     |
| <b>Fluke-721-1601</b><br><b>Fluke-721Ex-1601</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 100 PSIG  | -14 psi to +16 psi<br>-0.97 bar to 1.1 bar  | 0.001 psi,<br>0.0001 bar | 0.025 % of full scale | -12 psi to +100 psi<br>-0.83 bar to 6.9 bar  | 0.01 psi<br>0.0001 bar | 0.025 % of full scale |
| <b>Fluke-721-1603</b><br><b>Fluke-721Ex-1603</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 300 PSIG  |   |                          |                       | -12 psi to +300 psi<br>-0.83 bar to 20 bar   | 0.01 psi<br>0.001 bar  |                       |
| <b>Fluke-721-1605</b><br><b>Fluke-721Ex-1605</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 500 PSIG  |   |                          |                       | -12 psi to +500 psi<br>-0.83 bar to 34.5 bar | 0.01 psi<br>0.001 bar  |                       |
| <b>Fluke-721-1610</b><br><b>Fluke-721Ex-1610</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 1000 PSIG |   |                          |                       | 0 psi to +1000 psi<br>0.00 bar to 69 bar     | 0.1 psi<br>0.001 bar   |                       |
| <b>Fluke-721-1615</b><br><b>Fluke-721Ex-1615</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 1500 PSIG |   |                          |                       | 0 psi to +1500 psi<br>0.00 bar to 103.4 bar  | 0.1 psi<br>0.001 bar   |                       |
| <b>Fluke-721-1630</b><br><b>Fluke-721Ex-1630</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 3000 PSIG |   |                          |                       | 0 psi to +3000 psi<br>0.00 bar to 200 bar    | 0.1 psi<br>0.01 bar    |                       |
| <b>Fluke-721-1650</b><br><b>Fluke-721Ex-1650</b> | Dual Sensor Pressure Calibrator, 16 PSIG, 5000 PSIG | -14 psi to +36 psi<br>-0.97 bar to 2.48 bar | 0.001 psi,<br>0.0001 bar | 0.025 % of full scale | 0 psi to +5000 psi<br>0.00 bar to 345 bar    | 0.1 psi<br>0.01 bar    | 0.035 % of full scale |
| <b>Fluke-721-3601</b><br><b>Fluke-721Ex-3601</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 100 PSIG  |   |                          |                       | -12 to +100 psi<br>-0.83 bar to 6.9 bar      | .01 psi<br>0.0001 bar  | 0.025% of full scale  |
| <b>Fluke-721-3603</b><br><b>Fluke-721Ex-3603</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 300 PSIG  |   |                          |                       | -12 psi to +300 psi<br>-0.83 bar to 20 bar   | 0.01 psi<br>0.001 bar  |                       |
| <b>Fluke-721-3605</b><br><b>Fluke-721Ex-3605</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 500 PSIG  |   |                          |                       | -12 psi to +500 psi<br>-0.83 bar to 34.5 bar | 0.01 psi<br>0.001 bar  |                       |
| <b>Fluke-721-3610</b><br><b>Fluke-721Ex-3610</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 1000 PSIG |   |                          |                       | 0 psi to +1000 psi<br>0.00 bar to 69 bar     | 0.1 psi<br>0.001 bar   |                       |
| <b>Fluke-721-3615</b><br><b>Fluke-721Ex-3615</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 1500 PSIG |   |                          |                       | 0 psi to +1500 psi<br>0.00 bar to 103.4 bar  | 0.1 psi<br>0.01 bar    |                       |
| <b>Fluke-721-3630</b><br><b>Fluke-721Ex-3630</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 3000 PSIG | 0 psi to +3000 psi<br>0.00 bar to 200 bar   | 0.1 psi<br>0.01 bar      |                       |  |                        |                       |
| <b>Fluke-721-3650</b><br><b>Fluke-721Ex-3650</b> | Dual Sensor Pressure Calibrator, 36 PSIG, 5000 PSIG | 0 psi to +5000 psi<br>0.00 bar to 345 bar   | 0.1 psi<br>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)<br>Operating temperature -10 °C to +45 °C (Fluke 721Ex)<br>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                    | 03539 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<br>±0.002mA  |
| VDC measure**  | 0 to 30 VDC                            | 0.001V           | ±0.015% of rdg<br>±0.002V   |
| *Temperature measure (RTD/Ohms)  | -40 °C to 150 °C<br>(-40 °F to 302 °F) | 0.01 °C, 0.01 °F | ±0.015% of rdg<br>±0.02 ohms;<br>±0.1°C (±0.2°F)<br>±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

|                         |   |
|-------------------------|---|
| <b>Fluke-721-1601</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1601</b> | 16 PSIG, 100 PSIG                                     |
| <b>Fluke-721-1603</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1603</b> | 16 PSIG, 300 PSIG                                     |
| <b>Fluke-721-1605</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1605</b> | 16 PSIG, 500 PSIG                                     |
| <b>Fluke-721-1610</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1610</b> | 16 PSIG, 1000 PSIG                                    |
| <b>Fluke-721-1615</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1615</b> | 16 PSIG, 1500 PSIG                                    |
| <b>Fluke-721-1630</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1630</b> | 16 PSIG, 3000 PSIG                                    |
| <b>Fluke-721-1650</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-1650</b> | 16 PSIG, 5000 PSIG                                    |
| <b>Fluke-721-3601</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3601</b> | 36 PSIG, 100 PSIG                                     |
| <b>Fluke-721-3603</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3603</b> | 36 PSIG, 300 PSIG                                     |
| <b>Fluke-721-3605</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3605</b> | 36 PSIG, 500 PSIG                                     |
| <b>Fluke-721-3610</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3610</b> | 36 PSIG, 1000 PSIG                                    |
| <b>Fluke-721-3615</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3615</b> | 36 PSIG, 1500 PSIG                                    |
| <b>Fluke-721-3630</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3630</b> | 36 PSIG, 3000 PSIG                                    |
| <b>Fluke-721-3650</b>   | Dual Sensor Pressure Calibrator                       |
| <b>Fluke-721Ex-3650</b> | 36 PSIG, 5000 PSIG                                    |
| <b>Fluke-720RTD</b>     | RTD Probe for Fluke-721, 721Ex and 719Pro             |
| <b>Fluke-720URTD</b>    | 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, kgcm<sup>2</sup>, cmH<sub>2</sub>O@4°C, cmH<sub>2</sub>O@20°C, mH<sub>2</sub>O@4°C, mH<sub>2</sub>O@20°C, inH<sub>2</sub>O@4°C, inH<sub>2</sub>O@20°C, inH<sub>2</sub>O@60°F, mmHg@0°C, inHg@0°C, ftH<sub>2</sub>O@4°C, ftH<sub>2</sub>O@20°C, ftH<sub>2</sub>O@60°F

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