

# Fluke Pressure Calibrators

## Technical Data

### Fluke 718 Pressure Calibrator

#### The complete solution to pressure calibration

The Fluke 718 pressure calibrator family (4 models) provide a total pressure calibration solution for transmitters, gauges and switches. This compact pressure calibration solution is about a third of the size of comparable instruments and weighs just one kilogram (two pounds). The unique, easy to clean out access ports built into the pump protect the pump from fluids and provides the ability to service the pump without disassembly.

- Pressure Source and Milliamp Measurement to calibrate and maintain almost any pressure device
- Integrated pump is easily cleaned when accidentally exposed to fluids:
  - reduces cost of ownership and repairs
  - service the pump in the field
- Error % calculation for quicker pass/fail decision making in the field
- Best in class mA accuracy of 0.015 % for better measurement confidence and workload coverage
- Min/Max/Hold to capture changing measurements
- Switch test feature for quicker and more accurate pressure switch testing
- New 1 and 300 PSI pressure ranges mean fewer extra tools required
- 1, 30, 100 & 300 PSI ranges now available

### General Specifications

**Maximum voltage:** 30 volts: Non-operating

**Temperature:** -40 °C to 60 °C

**Operating temperature:** -10 °C to 55° C

**Relative humidity:** 95 % (10 °C to 30 °C); 75 % (30 °C to 40 °C); 45 % (40 °C to 50 °C); 35 % (50 °C to 55 °C)

**Operating altitude:** 3,000 m max

**Shock:** 1 m drop test

**Vibration:** Random, 2 g, 5 Hz – 500 Hz

**Safety:** CSA C22.2 No. 1010.1: 1992

**EMC:** EN50082-1: 1992 and EN55022: 1994 Class B

**Size/weight (717 with holster):** 201 mm x 98 mm x 52 mm (7.93 in x 3.86 in x 2.06 in) 600 g (21 oz)

**Size/weight (718 with holster):** 216 mm x 94 mm x 66 mm (8.50 in x 3.72 in x 2.60 in) 992 g (35 oz)

**Power:** 9V battery ANSI/NEDA 1604A or IEC 6LR619V alkaline; two batteries in 718

**Battery Life:** 4 to 20 hours typical, depending on functions used

**Warranty:** Three years (one year on pressure pump in Fluke 718)

**Display:** LCD, 5 digit pressure and current simultaneous

**Accuracy:** 0.05 %

**Note:** For use with non-corrosive gasses



## The New 718 Calibrator Pump

The new Fluke 718 is a uniquely protected pneumatic pressure calibrator and pump. The new pump design uses protective check valves that allow air to pass through the pump for calibration but inhibits fluids from entering the pump and causing damage. These two check valves allow the bi-directional flow of air into or out of the 718. Even after draining the process fluid from the calibration port of the device under test, minute amounts of process fluids may often still be lurking behind. In the event these fluids enter the 718 pump cavities, the new pump design enables quick cleaning and maintenance, even in the field.

Pump valve assembly cleaning instructions

1. Using a small screwdriver, remove the two valve retention caps located in the oval shaped opening on the underside of the Calibrator.
2. After the caps have been removed, gently remove the spring and o-ring assembly.
3. Set aside the valve assemblies in a safe area and clean out the valve body using a cotton swab soaked in IPA (isopropyl alcohol).
4. Repeat this process several times using a new cotton swab each time until there is no remaining sign of residue.
5. Pump the unit several times and check again for residue.
6. Clean the o-ring assembly and o-ring on the

retention caps with IPA and inspect the o-rings closely for any cuts, nicks, or wear. Replace if needed.

7. Inspect the springs for wear or loss of tension. They should be approximately 8.6 mm long in the relaxed state. If they are shorter than this, they may not allow the o-ring to seat properly. Replace if needed.

8. Once all parts have been cleaned and inspected, reinstall the o-ring and spring assemblies into the valve body.

9. Reinstall the retention caps and gently tighten the cap.

10. Seal the output of the Calibrator and pump up the unit to at least 50 % its rated pressure.

11. Release the pressure and repeat several times to ensure that the o-rings seat properly.

The Calibrator is now ready for use.



Cleaning the fluid trap in the Fluke-718 Calibrator is quick, easy and only requires a slotted screwdriver and cotton swab

## Functional Specifications

| Functional Pressure Specifications |                                                                   |                        |                               |                            |
|------------------------------------|-------------------------------------------------------------------|------------------------|-------------------------------|----------------------------|
| Model                              | Range                                                             | Resolution             | Over Pressure                 | Functions                  |
| <b>718 1G</b>                      | -1 PSI to +1 PSI, -68.9 mbar to 68.9 mbar (-6.89 kPa to 6.89 kPa) | 0.0001 psi, 0.001 mbar | Over Pressure 5xFS            | Zero, Min, Max, Hold, Damp |
| <b>718 30G</b>                     | -12 PSI to 30 PSI, (-850 mbar to 2 bar, -85 to 206.84 kPa)        | 0.001 psi, 0.1 mbar    | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>718 100G</b>                    | -12 PSI to 100 PSI, (-850 mbar to 6.895 bar, -85 to 689.48 kPa)   | 0.01 psi, 1 mbar       | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>718 300G</b>                    | -12 PSI to 300 PSI, (-850 mbar to 20.68 bar, -85 to 2068.42 kPa ) | 0.01 psi, 1 mbar       | Over Pressure 375 PSI 25 bar  | Zero, Min, Max, Hold, Damp |
| <b>717 1G</b>                      | -1 PSI to 1 PSI, (-68.9 mbar to 68.9 mbar, -6.89 to 6.89 kPa)     | 0.001 psi, 0.001 mbar  | Over Pressure 5xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 30G</b>                     | -12 PSI to 30 PSI, (-850 mbar to 2 bar, -85 to 206.84 kPa)        | 0.001 psi, 0.1 mbar    | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 100G</b>                    | -12 PSI to 100 PSI, (-850 mbar to 6.895 bar, -85 to 689.48 kPa)   | 0.01 psi, 1 mbar       | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 300G</b>                    | -12 PSI to 300 PSI, (-850 mbar to 20.68 bar, -85 to 2068.4 kPa)   | 0.01 psi, 1 mbar       | Over Pressure 375 PSI, 25 bar | Zero, Min, Max, Hold, Damp |
| <b>717 500G</b>                    | 0 PSI to 500 PSI, (0 mbar to 34.47 bar, 0 to 3447.4 kPa )         | 0.01 psi, 1 mbar       | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 1000G</b>                   | 0 PSI to 1000 PSI, (0 mbar to 68.95 bar, 0 to 6894.8 kPa )        | 0.1 psi, 1 mbar        | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 1500G</b>                   | 0 PSI to 1500 PSI, (0 mbar to 103.42 bar, 0 to 10342 kPa)         | 0.1 psi, 0.01 bar      | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 3000G</b>                   | 0 PSI to 3000 PSI, (0 mbar to 206.84 bar, 0 to 20684 kPa)         | 0.1 psi, 0.01 bar      | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |
| <b>717 5000G</b>                   | 0 PSI to 5000 PSI, (0 mbar to 344.74 bar, 0 to 34474 kPa)         | 0.1 psi, 0.01 bar      | Over Pressure 2xFS            | Zero, Min, Max, Hold, Damp |

| Fluke 718 series via using 700 Series Pressure Modules                         |                                                                                                                                                                                                                        |                   |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Range:                                                                         | 29 pressure modules, 0 – 1 in H <sub>2</sub> O to 10,000 psi, 2.5 mbar to 700 bar. Over pressure per pressure module specs                                                                                             |                   |
| Resolution:                                                                    | Per pressure module specs                                                                                                                                                                                              |                   |
| Accuracy:                                                                      | To 0.025 % of full span, per pressure module specs                                                                                                                                                                     |                   |
| Functions:                                                                     | Zero, Min, Max, Hold, Damp                                                                                                                                                                                             |                   |
|                                                                                | Note: media compatibility per pressure module specs                                                                                                                                                                    |                   |
|                                                                                |                                                                                                                                                                                                                        |                   |
| Fluke 718 series via built in pump                                             |                                                                                                                                                                                                                        |                   |
| Range:                                                                         | -12 PSI or -850 mbar to full scale, Supported Pressure Units; psi, in H <sub>2</sub> O (4 °C), in H <sub>2</sub> O (20 °C), cm H <sub>2</sub> O (4 °C), cm H <sub>2</sub> O (20 °C), bar, mbar, kPa, inHg, mmHg, kg/cm |                   |
| Loop Power:                                                                    | Range:                                                                                                                                                                                                                 | 24 V dc           |
|                                                                                | Accuracy:                                                                                                                                                                                                              | +/- 10 %          |
|                                                                                | Note: Drive; 20 mA into 1000 Ω for battery > 6.8V; 700 Ω for battery 5.8 to 6.8 V                                                                                                                                      |                   |
| Measure Accuracy:                                                              | Range:                                                                                                                                                                                                                 | 0 mA to 24 mA     |
|                                                                                | Resolution:                                                                                                                                                                                                            | 0.001 mA          |
|                                                                                | Accuracy:                                                                                                                                                                                                              | 0.015 % + 1 count |
|                                                                                |                                                                                                                                                                                                                        |                   |
| Fluke 717 Series via pressure module connector using optional Pressure Modules |                                                                                                                                                                                                                        |                   |
| Range:                                                                         | 29 pressure modules, 0 – 1 in H <sub>2</sub> O to 10,000 PSI, 2.5 mbar to 700 bar ranges over pressure per pressure module specs                                                                                       |                   |
| Resolution:                                                                    | Per pressure module specs                                                                                                                                                                                              |                   |
| Accuracy:                                                                      | 0.025 % of full span, per pressure module specs                                                                                                                                                                        |                   |
| Functions:                                                                     | Zero, Min, Max, Hold, Damp, error calculation                                                                                                                                                                          |                   |
|                                                                                | Note: Media compatibility per pressure module specs                                                                                                                                                                    |                   |

For additional detail on the 718, see the application note "Pressure calibration with the 718."  
Literature code: 2577485 at [www.fluke.com/library](http://www.fluke.com/library)



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