FLUKE®

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**
718 1G	-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
718 30G	-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
718 100G	-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
718 300G	-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
717 1G	-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
717 30G	-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
717 100G	-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
717 300G	-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
717 500G	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
717 1000G	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
717 1500G	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
717 3000G	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
717 5000G	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_2O 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_2O (4 °C), in H_2O (20 °C), cm H_2O (4 °C), cm H_2O (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_2O 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

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Fluke Corporation
PO Box 9090, Everett, WA USA 98206

Fluke Europe B.V.
PO Box 1186, 5602 BD
Eindhoven, The Netherlands

For more information call:
In the U.S.A. (800) 443-5853 or
Fax (425) 446-5116
In Europe/M-East/Africa (31 40) 2 675 200 or
Fax (31 40) 2 675 222
In Canada (800) 36-FLUKE or
Fax (905) 890-6866
From other countries +1 (425) 446-5500 or
Fax +1 (425) 446-5116
Web access: http://www.fluke.com

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