Certifications

CE Conforms to European Standard EN61010-1, EN61326.

Limited Warranty

Each Fluke product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is one year and begins on the date of shipment. Parts, product repairs and services are warranted for 90 days. This warranty extends only to the original buyer or end user customer of a Fluke authorized reseller, and does not apply to fuses, disposable batteries or to any product which, in Fluke's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation or handling. Fluke warrants that software will operate substantially in accordance with its functional specifications for 90 days and that it has been properly recorded on nondefective media. Fluke does not warrant that software will be error free or operate without interruption.

Fluke authorized resellers shall extend this warranty on new and unused products to end user customers only but have no authority to extend a greater or different warranty on behalf of Fluke. Warranty support is available if product is purchased through a Fluke authorized sales outlet or Buyer has paid the applicable international price. Fluke reserves the right to invoice Buyer for importation costs of repair/replacement parts when product purchased in one country is submitted for repair in another country.

Fluke's warranty obligation is limited, at Fluke's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to a Fluke authorized service center within the warranty period.

To obtain warranty service, contact your nearest Fluke authorized service center or send the product, with a description of the difficulty, postage and insurance prepaid (FOB Destination), to the nearest Fluke authorized service center. Fluke assumes no risk for damage in transit. Following warranty repair, the product will be returned to Buyer, transportation prepaid (FOB Destination). If Fluke determines that the failure was caused by misuse, alteration, accident or abnormal condition of operation or handling, Fluke will provide an estimate of repair costs and obtain authorization before commencing the work.

Following repair, the product will be returned to the Buyer transportation prepaid and the Buyer will be billed for the repair and return transportation charges (FOB Shipping Point).

THIS WARRANTY IS BUYER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. FLUKE SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, WHETHER ARISING FROM BREACH OF WARRANTY OR BASED ON CONTRACT, TORT, RELIANCE OR ANY OTHER THEORY.

Since some countries or states do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this Warranty is held invalid or unenforceable by a court of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

In Case of Difficulty

For service or calibration, call your nearest authorized Fluke Service Center. To locate an authorized service center, visit us on the World Wide Web: www.fluke.com or call Fluke using any of the phone numbers listed below.

For application or operation assistance or information on Fluke products, call:

USA: 1-888-99-FLUKE (1-888-993-5853)
Canada: 1-800-36-FLUKE (1-800-363-5853)
Europe: +31 402-678-200
Japan: +81-3-3434-0181
Singapore: +65-738-5655
Anywhere in the world: +1-425-446-5500

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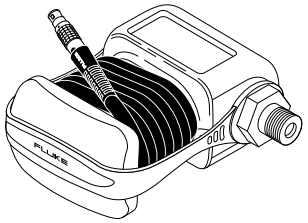
FLUKE®

700PAx Series Absolute Pressure Modules

Instruction Sheet



Introduction

Fluke Models 700PAx Series Pressure Modules allow you to measure absolute pressure with the Fluke 740 Series Documenting Process Calibrators. The modules have one fitting and measure pressure with respect to an absolute vacuum.

Read this sheet before you use the pressure module. This sheet contains specifications and information about how to avoid damaging the pressure module. This instruction sheet assumes that you know how to use the 740 Series Documenting Process Calibrator. (Refer to the Users Manual if necessary.)

Note

These modules are not specified for use with a Model 701 or 702 Calibrator.

The pressure module measures pressure using an internal microprocessor. It receives operating power from and sends digital information to the calibrator.

Box Contents

Pressure module, one 1/4 NPT to 1/4 ISO metric adapter, strap, and instruction sheet.

Protecting Yourself from Pressure Releases

To avoid a violent release of pressure in a pressurized system, shut off the isolation valve and slowly bleed off the pressure before you attach or remove the pressure module from the pressure line.

Avoiding Overpressure Damage

Applying pressure in excess of the BURST PRESSURE specified on the pressure module can destroy the pressure module. Burst pressure is atmosphere plus 3X full scale in absolute units.

Avoiding Mechanical Damage

To avoid damaging the pressure module, never apply more than 10 ft.-lb. of torque between the pressure module fitting and the body of the module. Always apply appropriate torque between the pressure module fitting and connecting fittings or adapters. Figure 1 shows the correct and incorrect ways to use a wrench when applying torque to the pressure module fitting.

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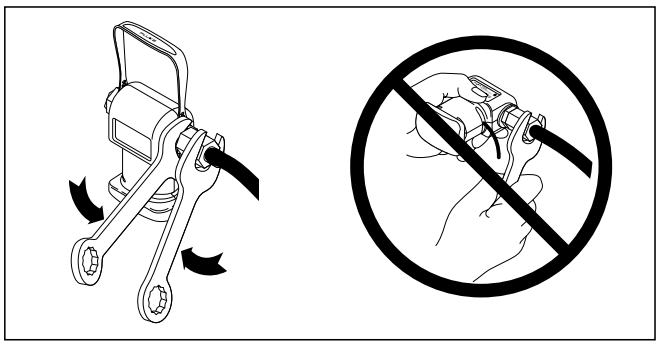

Figure 1.

Avoiding Corrosion Damage

To avoid damaging the pressure module from corrosion, use it only with media that are compatible with type 316 stainless steel.

Recommended Measurement Technique

For best results, it is recommended that the module be pressurized to full scale and then vented to atmospheric pressure prior to zeroing and making measurements with the 740 Series calibrator.

Note

Low range pressure modules may be sensitive to gravity. For best results, pressure modules 30 psi and below should be held at the same physical orientation from the time they are zeroed until the measurement is complete.

Zeroing

Recommended procedure:

1. Connect the pressure module to the 740 Series calibrator and select the measure pressure function.
2. Apply a vacuum to achieve a pressure below the rated resolution of the pressure module being zeroed.
3. Press the [ZERO] key, and enter 0.0 as the applied pressure.

Alternative procedure if a local precision barometer is available. Do not use the weather service or airport reports.

1. Connect the pressure module to the 740 Series calibrator and select the measure pressure function.
2. Press the [ZERO] key.
3. Enter the value from the precision barometer.

Pressure Calibration Kit

The Fluke 700PCK Pressure Calibration Kit makes it possible to calibrate pressure modules at ambient temperature with a precision pressure calibrator or dead weight tester. A vacuum source is required. The accuracy of the dead weight tester or pressure calibrator must be significantly better than the pressure module specification. A 386 or better PC and Windows® 3.1 or later are required. The kit is an optional accessory available from your distributor or from Fluke.

Performance Test

If you need to check that the pressure module meets its accuracy specification, use a dead weight tester. The accuracy of the dead weight tester should be significantly better than the pressure module specification. Proceed as follows to verify that a pressure module is operating within specification:

1. Connect the pressure module to a dead weight tester.
2. Apply a vacuum and zero as described earlier under “Zeroing.”
3. Choose pressure test values that give approximately 20% of full span steps. Set the dead weight tester to each of these pressures and verify that the reading is within the specification in Table 1. Percent of full span is calculated as follows:

   100% x (reading - dead weight tester setting) / top of span.
4. If temperature sensitivity is of concern, repeat steps 1 through 3 at various controlled temperatures.

Table 1. Specifications [1] (% of full span)

Model [4]	Range[2]	Reference Uncertainty (23 ° ± 3 °C)	Stability (1 Year)	Temp (0 to 50 °C)	Total Uncertainty[3]
700PA3	0 to 5.0000 psi 0 to 34.000 kPa 0 to 340.00 mbar	0.050%	0.010%	0.010%	0.070%
700PA4	0 to 15.000 psi 0 to 100.00 kPa 0 to 1000.0 mbar	0.050%	0.010%	0.010%	0.070%
700PA5	0 to 30.000 psi 0 to 200.00 kPa 0 to 2000.0 mbar	0.050%	0.010%	0.010%	0.070%
700PA6	0 to 100.00 psi 0 to 700.00 kPa 0 to 7000.0 mbar	0.050%	0.010%	0.010%	0.070%

1. Use of pressure zero function is required. Not compatible with the 701 or 702 Calibrators.
2. Select pressure units in the calibration setup menu. All units are absolute pressure units.
3. Accuracy specifications apply for 1 year for 0 to 100% of full span from 0 °C to 50 °C. Typical uncertainty of 1% of full span from -10 °C to 0 °C.
4. Maximum non-destructive pressure: atmosphere plus 3X maximum rated absolute pressure.
5. Specifications reflect a confidence interval of 95%.

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