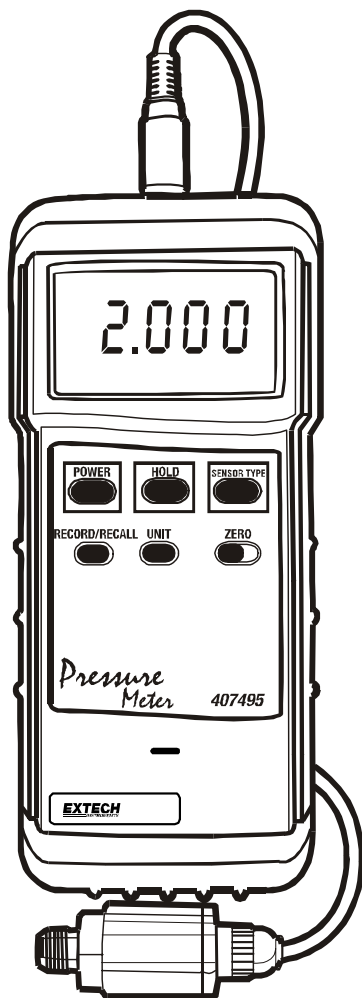


User's Manual



## Heavy Duty Pressure Meter

Model 407495



## ***Introduction***

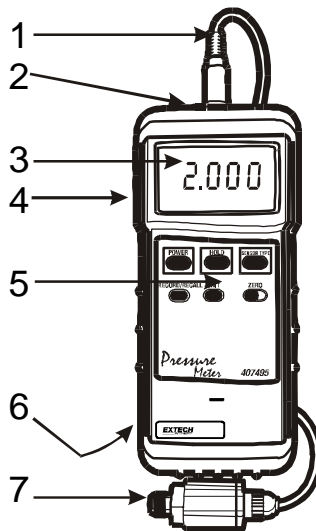
Congratulations on the purchase of the Extech Heavy Duty Pressure Meter, Model 407495. This meter measures and displays pressure in eight (8) measurement units. Up to three (3) interchangeable transducers (sold separately) in varying ranges can be used with this meter. Special features include RS-232 PC Interface, Min/Max Memory, push-button Zero, Data Hold, and Auto Power-Off. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## ***Warranty***

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for three years from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

## ***Meter Description***

1. Transducer cable shown plugged into meter input jack
2. RS-232 Output Jack
3. LCD Display
4. Protective rubber holster
5. Keypad
6. Battery compartment on rear of meter
7. Transducer shown attached to meter cable



## **Preparation for Use**

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### **Measurement Procedure Overview**

The following list provides an overview of pressure measurement steps. Each step is discussed in subsequent paragraphs. Note that the first 4 steps should only be performed the first time the meter is used and each time the transducer is changed.

1. Select a Transducer model that covers the desired range
2. Plug the Transducer into the meter's input jack
3. Program the Transducer range
4. Select the measurement units
5. Zero the meter
6. Connect the Transducer to the process under test
7. Apply pressure to the process under test
8. Read pressure reading on the meter's LCD

### **Selecting Transducer Range**

1. With the meter turned OFF, simultaneously press and hold the HOLD, SENSOR, & RECORD buttons down.
2. While holding the three buttons down, press the POWER key momentarily. Release the 3 buttons when the LCD display switches on.
3. A number will appear on the LCD that represents the Transducer type. Select the Transducer type by pressing the SENSOR TYPE key until the desired transducer number appears. Select the transducer from the list below in step 5.
4. Press the ZERO button to store the new transducer type. The meter will memorize the new type even when the meter is turned OFF.
5. Select the transducer from the following list:
  - Select 2 for the 30 psi (2 bars) transducer
  - Select 10 for the 150 psi (10 bars) transducer
  - Select 20 for the 300 psi (20 bars) transducer

NOTE: The meter does not need to be recalibrated each time the transducer is changed.

### **Connecting the Transducer to the Meter**

1. Press the POWER button to turn the meter OFF.
2. Remove the existing transducer, if necessary, by unplugging it from the meter's input jack (top of meter).
3. Plug the new transducer into the meter's input jack.

### **Selecting the Unit of Measure**

Press the UNIT key to select the desired unit of measure: Bar, psi, Kg/cm<sup>2</sup>, mmHg, inHg, mH<sub>2</sub>O, inch H<sub>2</sub>O, or Atmospheres (ATP).

## **Operation**

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### **Push-button Zero**

1. Attach a transducer to the meter, turn the meter ON, and select the range that matches the attached transducer as described in the 'Preparation for Use' section.
2. With the transducer attached to the meter (but not attached to the process) press the ZERO button. Note that the ZERO button should always be pressed after swapping transducers.
3. If the display reads zero after pressing the ZERO button proceed to the next section. If the display does not zero, the transducer may be defective.

### **Connect Transducer Port to Process**

1. Ensure that the process under test is not pressurized
2. Connect the Transducer's ¼" PS, 19 teeth per inch threaded port to the process under test.
3. Apply pressure to the process.
4. Read the pressure on the meter's LCD.

### **Data Hold**

1. When a reading is on the display that you wish to hold, press the Data Hold button.
2. The reading will freeze and the HOLD icon will appear on the display.
3. Press the Data Hold button again to release the reading and return the meter to normal operation.

### **Minimum/Maximum Reading Memory**

1. Press the RECORD/RECALL button to start tracking the highest (MAX) and lowest (MIN) readings. The REC indicator will appear on the LCD.
2. Take pressure measurements.
3. When pressure measurements are complete, press the RECORD/RECALL button to recall the Maximum reading recorded (the MAX indicator will appear on the LCD).
4. Press the RECORD/RECALL button again to recall the Minimum reading recorded (the MIN indicator will appear on the LCD).
5. To exit this mode and return the meter to normal operation, press and hold the RECORD/RECALL button until the REC indicator goes out.

### **Auto Power-Off**

In order to conserve battery life, the meter automatically shuts off after 10 minutes. To defeat this feature put the meter in the Record mode by pressing the RECORD/RECALL button; the REC indicator will appear. As long as the REC icon is displayed, the meter will stay on indefinitely.

## **RS-232 PC Interface**

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This meter is equipped with an RS-232 PC Interface output port (meter top). A Data Acquisition kit that includes Windows™ 95 / 98 / ME / NT / 2000 compatible software and a meter-to-PC interface cable can be obtained from Extech for use with this meter. The Part Number for the kit is 407001A. Instructions for use are supplied with the kit.

## Specifications

### General Specifications

Display	Multi-function LCD
Transducers	30, 150 and 300 max. psi (sold separately)
Transducer signal	Full scale: 100mVDC
Display units	Bar, psi, Kg/cm <sup>2</sup> , mmHg, inches Hg, meters H <sub>2</sub> O, inches H <sub>2</sub> O, Atmosphere
Zero adjust	Front panel push-button
Data Hold	Displayed reading can be held by front panel push-button
Min/Max Memory	Lowest/Highest readings can be stored for later recall
PC Interface kit	Built-in RS-232 port for use with optional Windows™ data acquisition software
Auto Power-Off	To conserve battery life, the meter turns OFF automatically after approx. 10 minutes (programmable over-ride).
Sampling time	0.8 seconds approx.
Power supply	9V Battery
Low battery indication	Rectangular battery-life box appears on the left side of LCD.
Power consumption	Approx. 7mA
Operating Temperature	32 to 122°F (0 to 50°C)
Operating Humidity	Less than 80% RH
Dimensions	7.1 x 2.8 x 1.3" (180 x 72 x 32mm)
Weight	Approx. 0.76 lbs. (345g)
Accessories	Protective rubber holster and 9V battery

### Transducer Range, Resolution, and Accuracy Specifications

	psi	bar	Kg/cm <sup>2</sup>	mm Hg	in Hg	m H <sub>2</sub> O	in H <sub>2</sub> O	atm
Range	30	2	2.040	1500	59.05	20.4	802	1.974
Resolution	0.02	0.002	0.002	2	0.05	0.02	1	0.002
Range	150	10	10.19	7500	295.2	101.9	4010	9.87
Resolution	0.2	0.01	0.01	10	0.2	0.1	5	0.01
Range	300	20	20.40	15000	590.5	204.0	8020	19.74
Resolution	0.2	0.02	0.02	20	0.5	0.2	10	0.02

Accuracy: Meter only: ± (0.5% reading + 1 digit)  
 Transducer only: ± 2% full scale  
 Combined: ± (2.5% full scale + 1 digit)

Accuracy note: Specified accuracy applies to meter at 23°C (±5°C)

Calibration note: Re-calibration is not required each time a new transducer is attached.

## Transducer Specifications

Model	Maximum Capacity
PT30	30psi (2 BAR)
PT150	150psi (10BAR)
PT300	300psi (20 BAR)

Overload protection	150% of max capacity
Diaphragm	Ceramic
Supply voltage	5V
Thread	¼" PS, 19 teeth per inch
Span (full scale)	± 1% (10 to 40°C) includes linearity, hysteresis & repeatability
Zero	± 2% Full Scale (10°C to 40°C)
Operating Temperature	32°F to 140°F (0°C to 40°C)
Operating Humidity	Max 80% RH
Output	Full capacity output = 100 mV DC
Size	30 mm diameter x 85mm
Weight	5.65oz. (160g)
Cable length	39" (1m)

## Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.



### Support line (781) 890-7440

Technical Support: Extension 200; E-mail: [support@extech.com](mailto:support@extech.com)

Repair & Returns: Extension 210; E-mail: [repair@extech.com](mailto:repair@extech.com)

#### Product specifications subject to change without notice

For the latest version of this User Guide, Software updates, and other up-to-the-minute product information, visit our website: [www.extech.com](http://www.extech.com)  
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