



**AXD620
Micromano
Meter**



TSI AXD620 Micromano Meter Instruction Manual

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TSI AXD620 Micromano Meter



Specifications

- Product Name: Micromanometer
- Model Number: P/N 1980588
- Revision: G
- Release Date: December 2024
- Manufacturer: TSI Incorporated
- Website: www.tsi.com

Product Usage Instructions

The Micromanometer is a precision instrument designed for measuring and monitoring pressure levels in various applications. Follow these instructions for proper usage:

Power On/Off

Ensure the device is properly connected to a power source before turning it on. Press the power button to activate the micromanometer.

Calibration

It is recommended to calibrate the micromanometer regularly to ensure accurate readings. Follow the calibration procedures outlined in the user manual.

Pressure Measurement

Select the appropriate pressure range on the device and place the probe in the desired location for pressure measurement. Read and record the displayed pressure value.

Data Logging

If your micromanometer supports data logging, set up the logging parameters as needed to record pressure measurements over time.

Service Policy

If you encounter any issues with the micromanometer, please contact your nearest sales office or representative. Alternatively, you can call the Customer Service department at +44 (0) 149 4 459200 (UK), [800-680-1220](tel:800-680-1220) (USA), or (1) [651-680-2860](tel:651-680-2860) (International) for assistance.

Limitation of Warranty and Liability

Refer to the product warranty information provided in the manual for details on warranty coverage and limitations.

Contact Information

- TSI Incorporated 500 Cardigan Road Shoreview, MN 55126 USA
- Fax No. [651-490-3824](tel:651-490-3824)

Visit our Website

For more information and updates, visit our website at www.tsi.com.

Start Seeing the Benefits of Registering Today!

- Thank you for your TSI® instrument purchase. Occasionally, TSI® releases information on software updates, product enhancements and new products. By registering your instrument, TSI® will be able to send this important information to you.
- <http://register.tsi.com>
- As part of the registration process, you will be asked for your comments on TSI products and services. TSI's customer feedback program gives customers like you a way to tell us how we are doing.

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Address

TSI Incorporated / 500 Cardigan Road / Shoreview, MN 55126 / USA

Fax No.

[651-490-3824](tel:651-490-3824)

Limitation Of Warranty And Liability (effective May 2024)

- (For country-specific terms and conditions outside of the USA, please visit www.tsi.com.)
- Seller warrants the goods, excluding software, sold hereunder, under normal use and service as described in the operator's manual (version published at the time of sale), to be free from defects in workmanship and material for the longer period of either
- 24 months or the length of time specified in the operator's manual/warranty statement provided with the goods or made available electronically (version published at the time of sale), from the date of shipment to the customer. This warranty period is inclusive of any statutory warranty. This limited warranty is subject to the following exclusions and exceptions:
 - Hot-wire or hot-film sensors used with research anemometers, and certain other components when indicated in specifications, are warranted for 90 days from the date of shipment;
 - Pumps are warranted for hours of operation as set forth in product or operator's manuals (versions published at the time of sale);
 - Parts repaired or replaced as a result of repair services are warranted to be free from defects in workmanship and material, under normal use, for 90 days from the date of shipment;
 - Seller does not provide any warranty on finished goods manufactured by others or on any fuses, batteries or other consumable materials. Only the original manufacturer's warranty applies;
 - This warranty does not cover calibration requirements, and Seller warrants only that the goods are properly calibrated at the time of its manufacture. Goods returned for calibration are not covered by this warranty;
 - This warranty is VOID if the goods are opened by anyone other than a factory authorized service center with the one exception where requirements set forth in the operator's manual (version published at the

time of sale) allow an operator to replace consumables or perform recommended cleaning;

- This warranty is VOID if the goods have been misused, neglected, subjected to accidental or intentional damage, or is not properly installed, maintained, or cleaned according to the requirements of the operator's manual (version published at the time of sale). Unless specifically authorized in a separate writing by Seller, Seller makes no warranty with respect to, and shall have no liability in connection with, goods which are incorporated into other products or equipment, or which are modified by any person other than Seller;
- New parts or components purchased are warranted to be free from defects in workmanship and material, under normal use, for 90 days from the date of shipment.
- The foregoing is IN LIEU OF all other warranties and is subject to the LIMITATIONS stated herein. NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR MERCHANTABILITY IS MADE. WITH RESPECT TO SELLER'S BREACH OF THE IMPLIED WARRANTY AGAINST INFRINGEMENT, SAID WARRANTY IS LIMITED TO CLAIMS OF DIRECT INFRINGEMENT AND EXCLUDES CLAIMS OF CONTRIBUTORY OR INDUCED INFRINGEMENTS. BUYER'S EXCLUSIVE REMEDY SHALL BE THE RETURN OF THE PURCHASE PRICE DISCOUNTED FOR REASONABLE WEAR AND TEAR OR AT SELLER'S OPTION REPLACEMENT OF THE GOODS WITH NON-INFRINGEMENT GOODS.
- TO THE EXTENT PERMITTED BY LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE LIMIT OF SELLER'S LIABILITY FOR ANY AND ALL LOSSES, INJURIES, OR DAMAGES CONCERNING THE GOODS (INCLUDING CLAIMS BASED ON CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) SHALL BE THE RETURN OF GOODS TO SELLER AND THE REFUND OF THE PURCHASE PRICE, OR, AT THE OPTION OF SELLER, THE REPAIR OR REPLACEMENT OF THE GOODS. IN THE CASE OF SOFTWARE, SELLER WILL REPAIR OR REPLACE DEFECTIVE SOFTWARE OR IF UNABLE TO DO SO, WILL REFUND THE PURCHASE PRICE OF THE SOFTWARE. IN NO EVENT SHALL SELLER BE LIABLE FOR LOST PROFITS, BUSINESS INTERRUPTION, OR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES. SELLER SHALL NOT BE RESPONSIBLE FOR INSTALLATION, DISMANTLING OR REINSTALLATION COSTS OR CHARGES. No Action, regardless of form, may be brought against Seller more than 12 months after a cause of action has accrued. The goods returned under warranty to Seller's factory shall be at Buyer's risk of loss, and will be returned, if at all, at Seller's risk of loss.
- Buyer and all users are deemed to have accepted this LIMITATION OF WARRANTY AND LIABILITY, which contains the complete and exclusive limited warranty of Seller. This LIMITATION OF WARRANTY AND LIABILITY may not be amended, modified or its terms waived, except by writing signed by an Officer of Seller. Service Policy
- Knowing that inoperative or defective instruments are as detrimental to TSI as they are to our customers, our service policy is designed to give prompt attention to any problems. If any malfunction is discovered, please contact your nearest sales office or representative, or call Customer Service department at +44 (0) 149 4 459200 (UK), [800-680-1220](tel:800-680-1220) (USA), or (1) [651-680-2860](tel:651-680-2860) (International).

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Chapter 1

Unpacking and Parts Identification

Carefully unpack the instrument and accessories from the shipping container. Check the individual parts against the list of components below. If anything is missing or damaged, notify TSI® immediately.

1. Carrying case
2. Instrument
3. Pressure tubing
4. Static pressure tip
5. USB cable

Chapter 2 Setting-up

Supplying Power to the Alnor® Model AXD620/ Airflow™ Instruments PVM620

The Alnor® AXD620/Airflow™ Instruments PVM620 is powered with four size AA batteries.

Installing the Batteries


Insert four AA batteries as indicated by the diagram located on the inside of the battery compartment. The Alnor® AXD620 / Airflow™ Instruments PVM620 is designed to operate with either alkaline or NiMH rechargeable batteries, although it will not recharge NiMH batteries. Battery life will be shorter if NiMH batteries are used. Carbon-zinc batteries are not recommended because of the danger of battery acid leakage.

Using the Optional AC Adapter

When using the AC adapter, the batteries (if installed) will be bypassed. Be sure to provide the correct voltage and frequency, which is marked on the back of the AC adapter. The AC adapter will not recharge the batteries.





Connecting to a Computer

- Use the Computer Interface USB Cable to connect the instrument to a computer.
- For information on how to download stored data see Chapter 3 LogDat2™ Downloading Software.

	CAUTION
<p>This symbol is used to indicate that the data port of the Alnor® AXD620/Airflow™ Instrument s PVM620 IS NOT intended for connection to a public telecommunications network. Connect the USB data port only to another USB port.</p>	

Chapter 3 Operation

Keypad Functions

ON/OFF Key	Press to turn the Alnor® Model AXD620 / Airflow Instruments PVM620 on and off. During the power up sequence the display will show the following: Model Number, Serial Number and Software Revision.
Arrow () Keys	Press to scroll through choices while setting a parameter.
(Enter) Key 	Press to accept a value or condition.
Arrow ( or ) and Menu Soft Keys	Press arrow keys to change choices while setting a parameter. Press the Menu soft key to select the Menu selections, which are Display Setup, Pressure Zero, Settings, Flow Setup, Actual/Std Set up, Data Logging, and Calibration.

Common Terms

In this manual there are several terms that are used in different places. The following is a brief explanation of the meanings of those terms.

Sample	Consists of all of the measurement parameters stored at the same time.
Test ID	A group of samples. The statistics (average, minimum, maximum, and count) are calculated for each test ID. The maximum number of test IDs is 100.

Time Constant	<p>The time constant is an averaging period. It is used to dampen the display. If you are experiencing fluctuating flows, a longer time constant will slow down those fluctuations.</p> <p>The display will update every second, but the displayed reading will be the average over the last time constant period. For example, if the time constant is 10 seconds, the display will update every second, but the displayed reading will be the average from the last 10 seconds. This is also referred to as a “moving average”.</p>
Log Interval	The logging interval is a frequency period that the instrument will log readings. For example, if the logging interval is set to 30 minutes, each sample will be the average of the last 30 minutes.

Menus

DISPLAY SETUP




Display setup menu is where you will setup the desired parameters to be displayed on the running screen. With a parameter highlighted you can then use the ON soft key to have it show up on the running screen or select the OFF soft key to turn off the parameter. Use PRIMARY soft key to have a parameter show up on the running screen in a larger display. Only one parameter can be selected as a primary, and up to 2 secondary parameters can be selected at one time.

PRESSURE ZERO




Turn the instrument on for a minimum of five minutes to let it warm up before zeroing the pressure sensor. To zero the pressure reading, select the Pressure Zero menu. The instrument will indicate if the pressure zero was successful.

SETTINGS

Settings menu is where you can set the general settings. These include Language, Beeper, Select Units, Time Constant, Contrast, Set Time, Set Date, Time Format, Date Format, Number Format, Backlight and Auto Off. Use






the  or  soft keys to scroll through the settings for each option and use the  key to accept settings.

FLOW SET UP

In Flow Setup mode, there are four types: Round Duct, Rectangle Duct, Duct Area, and K-Factor. Use the  or  soft keys to scroll through the types and then press the  key to accept the desired type. To change the setting, highlight the Enter Settings option and press the key.

Press/Kfact allows for calculating flow rate from diffusers or flow stations with pressure taps using the instruments pressure ports and K-factors. The K-factors are obtained from the diffuser or flow station manufacturer. For more information, refer to Application Note TSI-114.

- Up to 5 K-factors can be pre-programmed for quick use.
- When Flow is set as the Primary measurement in the Display Setup menu, the K-factor will also be displayed.

When measuring Flow as the Primary measurement, the parameters can be quickly changed by pressing the  or  key while on the main measurement screen. Make adjustments with the  or  arrow keys and press  to accept, or enter the Select Kfactor menu to choose a different pre-programmed flow value.

ACTUAL/STANDARD SETUP

Choose Actual/Standard measurements and parameters in the Act/Std Setup menu. Within this menu, you can also select Standard Temperature, Standard Pressure and a source for the actual temperature. The actual barometric pressure must be entered to convert air velocity and volume measurements to actual conditions. The Entered Temp range is from -40 to 1832°F (-40 to 1000°C).

DATA LOGGING

Measurements



Measurements to be logged are independent of measurements on the display, and must; therefore, be selected under DATA LOGGING → Measurements.

- When set to ON, measurement will be logged to memory.
- When set to DISPLAY, measurement will be logged to memory if it is visible on the main running screen.
- When set to OFF, measurement will not be logged to memory.

Log Mode/Log Settings





You can set Log Mode to Manual, Auto-save, or Cont-key.

- Manual mode does not automatically save data, but instead prompts you to save a sample.

- In Auto-save mode, you manually take samples that are automatically logged.
- In Cont-key mode, you start taking readings and logging by pressing the  key. The instrument will continue taking measurements until the  key is pressed again.
- Auto-save and Cont-Key modes have the following additional Log Settings:

Mode

Log Settings

- Auto-save
 - Log Interval
- Cont-key
 - Log Interval
- Pressing the   keys simultaneously will lock the keypad to prevent unauthorized adjustments to the instruments. To unlock the keypad, press the   keys simultaneously.

Delete Data

Use this to delete all data, delete test or delete sample.

% Memory

This option displays the memory available. Delete All, under Delete Data, will clear memory and reset the memory available.

LogDat2™ Downloading Software

- LogDat2™ software can be downloaded from the TSI Software and Firmware Wizard | TSI page. Once downloaded onto your PC, click the application file to begin installation. Follow the on-screen instructions to install the software.
- To download data from the Alnor® AXD620/Airflow TM Instruments PVM620, connect the supplied computer interface USB cable to the Alnor® AXD620/Airflow TM Instruments PVM620 and to a computer USB port. Then run the
- LogDat2 downloading software. Within the LogDat2 software, either select the tests to be downloaded or double-click on a test to open it.

Chapter 4 Maintenance

The Alnor® Model AXD620/Airflow TM Instruments PVM620 requires very little maintenance to keep it performing well.

Recalibration

To maintain a high degree of accuracy in your measurements, we recommend that you return your Alnor® Model AXD620 / Airflow™ Instruments PVM620 to TSI® for annual recalibration. Please contact one of TSI® Incorporated's offices or your local distributor to make service arrangements and to receive a Service Request number. To fill out an online "Service Request" form, visit TSI®'s website at tsi.com/service.

U.S. & International	UK
TSI Incorporated	TSI Instruments Ltd.
Alnor Products	Stirling Road
500 Cardigan Road	Cressex Business Park
Shoreview MN 55126-3996	High Wycombe
Tel: (800) 680-1220/680-1220	Buckinghamshire
(651) 680-2860/2860	HP12 3ST United Kingdom
Fax: 651-490-3824	Tel: +44 (0) 149 4 459200

The Alnor® Model AXD620/Airflow TM Instruments PVM620 can also be recalibrated in the field using the CALIBRATION menu. These field adjustments are intended to make minor changes in calibration to match a user's calibration standards. The field adjustment IS NOT intended as a complete calibration capability. For complete, multiple-point calibration and certification, the instrument must be returned to the factory.

Cases

- If the instrument case or storage case needs cleaning, wipe it off with a soft cloth and isopropyl alcohol or a mild detergent. Never immerse the Alnor Model AXD620/Airflow Instruments PVM620. If the enclosure of the Alnor Model AXD620/Airflow Instruments PVM620 or the AC adapter becomes broken, it must be replaced immediately to prevent access to hazardous voltage.



Storage

Remove the batteries when storing the unit for more than one month to prevent damage due to battery leakage.

Chapter 5 Troubleshooting

Table 5-1 lists the symptoms, possible causes, and recommended solutions for common problems encountered with the Alnor® Model AXD620 / Airflow TM Instruments PVM620. If your symptom is not listed, or if none of the solutions solves your problem, please contact TSI®.

Table 5-1: Troubleshooting the Alnor® Model AXD620/ Airflow TM Instruments PVM620

Symptom	Possible Causes	Corrective Action
No Display	Unit not turned on	Switch unit on.
	Low or dead batteries	Replace batteries or plug in AC adapter.
	Dirty battery contacts	Clean the battery contacts.
Reading fluctuates / unstable	Fluctuating flow	Reposition probe in less-turbulent flow or use longer time constant.
No response to keypad	Keypad locked out	Unlock keypad by pressing   keys simultaneously.
Instrument Error message appears	Memory is full	Download data if desired, then DELETE ALL memory.
	Fault in instrument	Factory service required on instrument.

WARNING !

The pressure sensor is protected from damage up to 7 psi (48 kPa or 360 mmHg). At higher pressure it can burst!

Appendix A

Specifications

Static / Differential Pressure:

- Range¹: -15 to +15 in. H₂O (-28.0 to +28.0 mm Hg, -3735 to +3735 Pa)
- Accuracy: ±1% of reading ±0.005 in. H₂O (±0.01 mm Hg, ±1 Pa)
- Resolution: 0.001 in. H₂O (0.1 Pa, 0.01 mm Hg)

Velocity From a Pitot Tube:

- Range²: 250 to 15500 ft/min (1.27 to 78.7 m/s)
- Accuracy³: ±1.5% at 2000 ft/min (10.16 m/s)
- Resolution: 1 ft/min (0.1 m/s)

Duct Size:

- Range: 1 to 500 inches in increments of 0.1 in. (2.5 to 1270 cm in increments of 0.1 cm)

Volumetric Flow Rate:

- Range: Actual range is a function of actual velocity, pressure, duct size, and K factor

Instrument Temperature Range:

- Operating: 40 to 113°F (5 to 45°C)
- Storage: -4 to 140°F (-20 to 60°C)

Instrument Operating Conditions:

- Altitude up to 4000 meters
- Relative humidity up to 80% RH, non-condensing Pollution degree 1 in accordance with IEC 664 Transient over voltage category II

Data Storage Capabilities:

- Range: 12,700+ samples and 100 test IDs

Logging Interval:

- Intervals: 1 second to 1 hour

Time Constant:

- Intervals: User selectable

External Meter Dimensions:

- 3.3 in. ´ 7.0 in. ´ 1.8 in. (8.4 cm ´ 17.8 cm ´ 4.4 cm)

Meter Weight:

- Weight with batteries: 0.6 lbs (0.27 kg)

Power Requirements:

Four AA-size batteries (included) or AC adapter (optional) 9 VDC, 300 mA, 4-18 watts (input voltage and frequency vary depending on which adapter is used)

1. Overpressure range = 7 psi (190 in. H₂O, 360 mmHg, 48 kPa).
2. Pressure velocity measurements are not recommended below 1,000 ft/min (5 m/s) and are best suited to velocities over 2000 ft/min. Range can vary depending on barometric pressure.
3. Accuracy is a function of converting pressure to velocity. Conversion accuracy improves when actual pressure values increase.

TSI Incorporated – Visit our website www.tsi.com for more information.

- TSI Incorporated – Visit our website www.tsi.com for more information.
- USA Tel: +1 800 680 1220
- UK Tel: +44 149 4 459200
- France Tel: +33 1 41 19 21 99

- Germany Tel: +49 241 523030
- India Tel: +91 80 67877200
- China Tel: +86 10 8219 7688
- Singapore Tel: +65 6595 6388
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FAQS

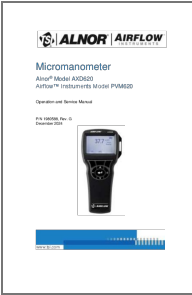
Q: How often should I calibrate the micromanometer?

A: It is recommended to calibrate the micromanometer regularly, ideally before each critical measurement task and at least once a month for general use.

Q: Can I replace consumables or perform cleaning myself without voiding the warranty?

A: Refer to the operator’s manual for specific guidelines on replacing consumables or performing cleaning tasks. In most cases, following the provided instructions will not void the warranty.

Documents / Resources

	<p>TSI AXD620 Micromano Meter [pdf] Instruction Manual AXD620, PVM620, AXD620 Micro Mano Meter, AXD620, Micro Mano Meter, Mano Meter</p>
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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