

# UniMano 1000

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## User Manual



- ▶ **Compact**
- ▶ **Lightweight**
- ▶ **Easy to Use**

**Pressure Vacuum Meter**  
(Precision Instrument)



**NETECH**

Innovative Instruments Since 1987

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# Notices

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## Copyright

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## Quality Assurance

Netech is ISO 9001-2015 Registered. This instrument was thoroughly tested and inspected according to Netech's ISO 9001-2015 quality system and test procedures and found to meet those specifications when it was shipped from the factory. Calibration measurement Instruments are traceable to the NIST (National Institute of Standards and Technology).

## Trade Mark

Netech and UniMano 1000 are trademarks of Netech Corporation. Any other trademark names used in this manual are only for editorial purposes and the benefit of the respective trademark owner with no intention of improperly using that trademark

## Unpacking and Inspection of the Unit

Before unpacking the UniMano 1000, inspect the shipping box for any visual damage. If damage is found, do not unpack the unit and immediately notify the shipping carrier. If no damage is found to the shipping box, open the box and perform a visual inspection of the UniMano 1000. If any damage to the unit is observed please contact Netech Customer Service.

## **Technical Support**

For technical support questions, either email

Techsupport@NetechBiomedical.com or Call 1-800-547-6557

or (1-631-531-0100)

## **Refunds and Credits**

A Return Material Authorization (RMA) number must be obtained from our service or customer service dept, before a product is returned for refund or credit. The RMA number should be clearly marked on the package along with a statement indicating the reason for return.

## **Restocking Charges**

Products returned within 30 days after purchase are subject to a restocking charge of 15%. Products must be shipped prepaid in original shipping cartons with all accessories and parts. Additional charges will be applied for any missing parts or accessories.

## **Repair and Recalibration**

Products returned for repair or recalibration must obtain a RMA (Return Material Authorization) from our service department after completing a service request form our website <https://www.NetechBiomedical.com/repair> or contact Netech Customer Service

Department at [CustomerService@NetechBiomedical.com](mailto:CustomerService@NetechBiomedical.com)

## **Calibration**

The UniMano 1000 is factory calibrated, thoroughly tested, and meets Netech's ISO 9001-2015 quality standards.

Any attempt to remove or tamper with the calibration seal will void the warranty.

## General Contact Information

Netech Corporation, 110 Toledo St, Farmingdale, NY 11735.

Phone: 631-531-0100, (or) 1-800-547-6557

Website: [www.NetechBiomedical.com](http://www.NetechBiomedical.com)

Email: [sales@NetechBiomedical.com](mailto:sales@NetechBiomedical.com)

## Warnings

SYMBOL	DESCRIPTION
	Caution: Important Safety Information
	Hazardous Voltage
	Conforms to European Union Directive

# Introduction

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## Description

The UniMano 1000 is an advanced micro-controller based, compact, high performance pressure and vacuum meter designed for very precise measurement and calibration of pressure and vacuum in medical, laboratory and industrial applications. The UniMano 1000 combines such features as fluid compatibility, temperature compensation, linearity correction, leak detection, peak hold, over pressure alarm and user selectable units of measurement. It is menu driven and simple to operate. All the functions are set from a 2 line, 16 character LCD display and a key pad with 8 tactile keys.

Using state of art technology, the UniMano 1000 provides superior accuracy and performance. Many software upgrades will be made available to accommodate additional features and advanced functions.

## UniMano 1000 Features.

- Micro-controller based
- Pressure and Vacuum measurement
- 8 engineering units of measurement
- Fluid and gas compatible
- Auto zero
- Leak detection
- Peak hold
- Two line 16 character LCD display

## Preparation for Use

The UniMano 1000 is shipped with the following items included in the customized hard case:

- UniMano 1000
- User Manual
- Tubing Kit

# Specifications

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## General Specifications

**Display:** 2 Line 16 character LCD.

**Polarity Display:** The negative sign (-) is displayed when there is a vacuum reading.

**Accuracy:** 0.1% full range, +/- 1 count (Pressure Only).

**Operating Temperature:** 0 degree C to 50 degree C

**Media Compatibility:** Non-corrosive fluids and gases

**Maximum Pressure:** Double the rated Pressure.

**Power:** One 9 volt alkaline battery or optional AC adapter (PN:302).

**Low Battery Indicator:** Audio and visual display if battery voltage is  $\leq 6.8$  volts. Unit will go into sleep mode.

**Physical Dimensions:** Size: 5.5 x 3.5 x 1.5 in (13.75 x 8.75 x 3.75 cm)  
Weight: 10 oz (.28 kg)



# Range and Resolution for UniMano 1000 Standard Models:

## 800-2000

Unit	Pressure	Vacuum	Resolutions
mmHG	1500	517	0.5
inH <sub>2</sub> O	800	276.9	0.3
MBar	2000	689.7	0.7
cmH <sub>2</sub> O	2100	703	0.7
KPa	200	68.97	0.07
InHg	60	20.36	0.02
Psi	30	10	0.1
kg/cm <sup>2</sup>	2	0.073	0.0007

## 800-4000

Unit	Pressure	Vacuum	Resolutions
mmHG	3000	517	1
inH <sub>2</sub> O	1600	277	1
MBar	4100	690	1
cmH <sub>2</sub> O	4200	703	1
KPa	400	69	0.2
InHg	120	20.4	0.1
Psi	60	10	0.02
kg/cm <sup>2</sup>	4	0.704	0.002

## 800-5000

<b>Unit</b>	<b>Pressure</b>	<b>Vacuum</b>	<b>Resolutions</b>
mmHG	5000	517	1
inH <sub>2</sub> O	2700	277	1
MBar	6800	690	1
cmH <sub>2</sub> O	7000	703	1
KPa	690	68.9	0.1
InHg	200	20.4	0.1
Psi	100	10	0.1
kg/cm <sup>2</sup>	7	0.703	0.001

# Instrument Familiarization

Before getting started, it is important to get familiar with the control and operation of the unit.

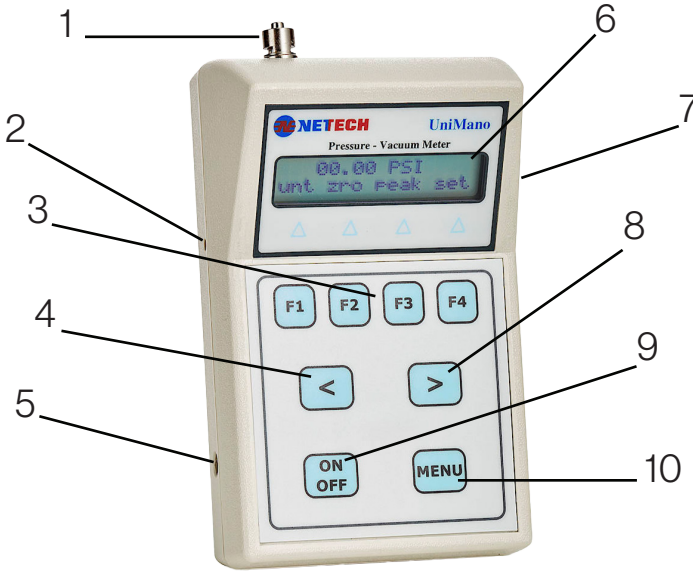


Figure 1. UniMano 1000 Controls

Number	Description
1	Luer Lock Fitting (Female)
2	Zero Adjustment
3	Function Keys, F1, F2, F3, F4
4	Arrow Key < (Left)
5	AC Adapter Input
6	Graphics LCD Window
7	Fine Gain Adjustment
8	Arrow Key > (Right)
9	On/Off Switch
10	Menu Key

## Precautions

Because the UniMano 1000 is both a Pressure and a Vacuum Meter it will read below zero identifiable by the negative sign in front of reading.

Do not exceed the rated maximum pressure of the instrument, although a transient pressure of two times the rating will generally be tolerated.

Do not connect the instrument to corrosive gases or highly ionic fluids.

Do not continue to use if the instrument is wet.

If the battery voltage is lower than 6.8 Volts “Battery Low” warning will be displayed. The UniMano 1000 will beep twice, to warn the user to turn the unit off.

The micro-controller will go into a sleep mode thereby disabling any pressure measurements.

Do not use any other AC adapters as this will damage the unit.

## Normal Operations

Press the ON/OFF to activate the UniMano 1000. On startup the micro-controller will initiate a self check, beep and briefly display the Model and Version of software.

<b>UniMano</b>	<b>UM5000</b>
<b>100PSI</b>	<b>Ver2.0</b>

The display will then revert to:

<b>UniMano</b>	<b>UM5000</b>		
<b>unt</b>	<b>zro</b>	<b>peak</b>	<b>set</b>

Allow two minutes for the transducer to warm up and stabilize.

The top line is your measurement line and the second line is your select function line.

Press an [F] key to select which function you wish.

**unt: Different Units of Measurements**

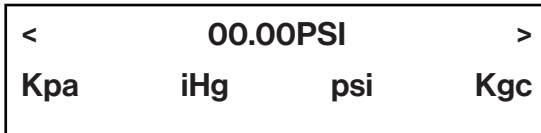
**zro: Zeroing the display**

**peak: Peak value capture**

**set: Alarm and Leak Detection**

The 800-2000 will turn on in the mmHG unit of measurement, while both the 800-4000 and 800-5000 default to the PSI unit of measurement.

To select another engineering unit to be displayed simply press [F1] and the display will show the various units of measurements available.



**Kpa: KiloPascal**

**iHg: Inches of Mercury**

**psi: Pounds per Square Inch**

**Kgc: kilogram-force/square centimeter**

**mmHg: millimeters of Mercury**

**iHo: inches of Water**

**mBr: milliBars**

**cHo: centimeters of Water**

Use the [←] or [→] keys to bring your choice to the display and then press the appropriate [F] Key to select your choice. For example pressing [F1] for kilopascal.

Once your unit of measurement is selected you can press [MENU].

<b>000.1 KPA</b>			
<b>unt</b>	<b>zro</b>	<b>peak</b>	<b>set</b>

Your display should revert back to your basic functions

With no pressure applied, the display should read zero, if not, press [F2] to automatically adjust the zero.

<b>000.0 KPA</b>			
<b>unt</b>	<b>zro</b>	<b>peak</b>	<b>set</b>

Once the UniMano is zeroed you may apply pressure and the display will accurately show the actual pressure applied in your selected unit of measurement.

## Peak Operation

If your input pressure is variable and you wish to see the highest value obtained over a period of time simply press [F3] or peak. On the display the function “peak” will continually flash while in peak mode.

While in “peak mode” the display will only display the highest value seen, lower value will not be displayed.

Simply press [F3] again and the flashing will stop and the display will return to real time measurements.

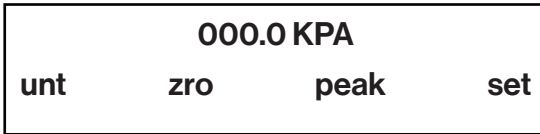
## Warning



Reverting to real time from peak will result in loss of peak pressure reading. Record the peak value prior to returning to normal real time reading.

## Set Operation

Press set from main menu



The following display will appear:



## Leak Detection

The UniMano 1000 is capable of calculating the change in pressure over a selected period of time.

Press [F1] Leak to select Leak Detection and the following menu appears:



Use the [F] keys to determine the time span for the period of time you wish to measurement to occur. Time intervals are in 15 second durations up to a minute.

Once selected the display will revert back to the main display.

At the end of the selected measuring period the UniMano will beep and flash the change in pressure value (5) five times and then the value freezes on the display.

	<b>1.00 PSI</b>	
<b>15</b>	<b>Seconds</b>	<b>leak</b>

In the above example the UniMano detected a 1 PSI leak over 15 second period, on negative sign in front would indicate a increase in pressure of 1 PSI over the same 15 Second interval, see below.

	<b>-1.00 PSI</b>	
<b>15</b>	<b>Seconds</b>	<b>leak</b>

## Alarm Mode

The UniMano has an audio beeper that always activate during a overpressure situation, for low battery situation and after Leak Detection. If you press [F2] in the Setup Menu and select 'ON' [F1] the UniMano will also beep when zeroing the unit and if Peak Function is selected. Pressing 'OFF' [F2] will deactivate these two alarms. The UniMano will default on initiation to the 'OFF' position.

	<b>Beeper OFF</b>	
<b>ON</b>		<b>OFF</b>

# Troubleshooting

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## Simple Troubleshooting Guide

When inaccurate pressure vacuum readings are suspected, check the following items:

Install a fresh 9 Volt battery.

Insure the display reads zero with no pressure applied to the instrument.

Auto zero if necessary.

Apply a known pressure, and verify the reading within the specifications of the UniMano 1000 model, 0.1% Full Scale.

## Typical Application Setup

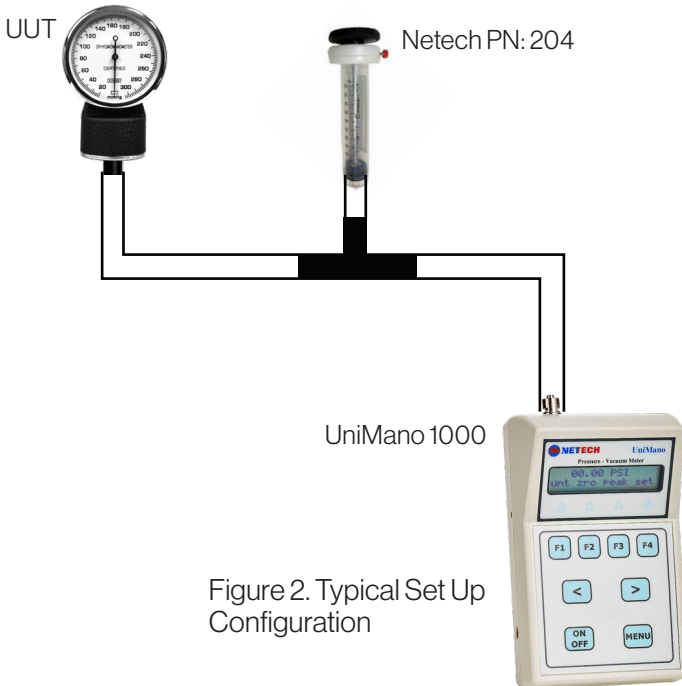


Figure 2. Typical Set Up Configuration

# Warranty

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*Netech warrants this instrument to the original purchaser, as purchased from a Netech distributor or dealer, will conform to the written specification as of the date of its manufacture, for two years from the date of purchase. The second-year warranty is contingent upon returning the unit to the factory for the annual recalibration at the end of the first year warranty. Netech warrants this instrument against defects in materials and workmanship. If the instrument fails to conform to these warranties, Netech will repair or replace the unit and/or its components within a reasonable period; if the UNIMANO 1000 is returned, shipping prepaid, to Netech's facility at Farmingdale, NY, USA within the warranty period as expressed above.*

*These warranties are made upon the expressed condition that:*

- 1. The purchaser promptly notifies Netech in writing of any nonconformity with the above warranty including a detailed explanation of the alleged deficiencies.*
- 2. The UniMano 1000 is returned to Netech at the buyer's expenses only after obtaining the proper RMA authorization from Netech.*
- 3. Netech will not be liable for any incidental or consequential damages.*
- 4. In the opinion of Netech upon inspection, the UniMano 1000 has not been misused, altered, or damaged due to the abnormal handling and/or operation.*
- 5. Repairs to the UniMano 1000 and/or its components have not been made by anyone other than Netech or one of its authorized repair agents.*
- 6. The UniMano 1000 has not been modified, altered, or changed in any manner by anyone other than Netech or one of its authorized repair agents.*
- 7. All shipping and handling charges will be billed to the purchaser.*

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*To receive free software and firmware updates, please fill out and send the warranty registration card or fill out online warranty registration: - <http://www.NetechBiomedical.com/warranties>*

## **Appendix: A**

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*Current Revision: R3 09/16/25*

*Pages revised from the previous Revision (R2).*



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Patient Simulator



**DELTA 1600**  
AED Tester



**LKG 601**  
Electrical Safety Tester



**DIGIMANO 1000**  
Pressure Vacuum Meter



**DIGIFLOW 2000**  
Digital Gas Flow Meter



**DIGIMANO 2000**  
Precision Pressure  
Vacuum Meter

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