

# OPERATION MANUAL

## DIGITAL MANOMETER



Model: ■ 82681 (0~ ± 1 psi)  
■ 82682 (0~ ± 6 psi)  
■ 82683 (0~ ± 15 psi)

Congratulations on your purchase of the Manometer ! This instrument is portable, battery operated device for measuring differential pressure. The Manometer is ideal for HVAC/R technicians measuring pressure level , Medical equipment , Computer peripherals , Pneumatic Controls.

## INTRODUCTION

- ✓ The meter will display all LCD segments when it is first turned on for approx. 3 seconds.
- ✓ The LCD is divided into two distinct sections : One large (Primary) screen and one smaller bottom screens (Relative Clock). The primary screen keep you constantly updated of the pressure measurements.
- ✓ The Meter measures **Gauge pressure** -a measure of pressure with reference to ambient pressure, and **Differential pressure** -a measure of the difference between two pressures .
- ✓ 10 pressure units are selectable for Imperial and Metric in the different area .: inHg, psi, ftH<sub>2</sub>O, inH<sub>2</sub>O, Ozin<sup>2</sup>, bar, kPa, mbar, Kgcm<sup>2</sup>, mmHg.
- ✓ 3 models of Manometer for choice:  
Pressure range : 0~ ± 1psi (#82681)  
                          "                          : 0~ ± 6psi (#82682)  
                          "                          : 0~ ± 15psi (#82683)
- ✓ Please check the tubing is not leaking or damaged before using.

## MATERIAL SUPPLIED

### This package contains:

- ✓ The meter x 1
- ✓ Battery x 3 (AAA)
- ✓ Connection hose 4mm(ID)x6mm (OD) x 500mm length x 2 pcs
- ✓ Operation manual
- ✓ Soft carry pouch

## POWER SUPPLY

The meter is powered by battery only. Unscrew the battery cover and insert 3pcs AAA batteries in correct polarity and it can start measuring.

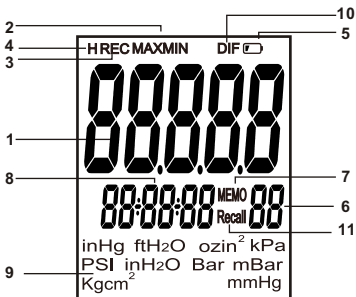
**Note:** Always remove battery from instruments when you do not plan to use it for a month or longer time.



## MODEL SELECTION

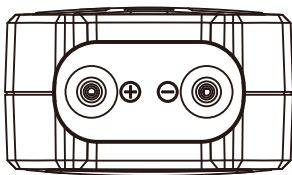
### *Models and measuring range: ±*

<small>unit model</small>	psi	inH <sub>2</sub> O	mbar	kg/cm <sup>2</sup>
<b>82681</b>	1.000	27.68	68.9	0.070
<b>82682</b>	6.000	166.08	413.7	0.422
<b>82683</b>	15.000	415.20	1034.2	1.055

## INDICATORS



1. **Primary screen** displays pressure value ("-" : Minus pressure).
2. **MAXMIN** displays Max/Min pressure in recording status.
3. **REC** starts data recording.
4.  Freezes reading on the display
5.  Low battery voltage
6. **88** Number of the saved reading
7. **MEMO** saves single reading in meter
8. **88:88:88** Displays duration time in the order of Hour / Minute / Second.
9. Pressure unit indication.
10. **DIF**. Pressure change mode.
11. **Recall** review the saved data

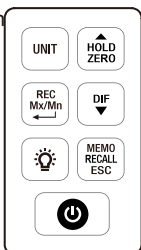


"+" Positive



"-" Negative

## OPERATION



There are seven function keys for mode selection and measure operation. For your convenience, the meter reserves the setting used in the last operation. The following lists the operation for each function key.




 Turns instrument on and off.

 Press momentarily to save reading into meter memory (Total storage is 99 points). **MEMO** icon and a number displayed at the upper left screen with a blinking reading to indicate readings saved. Press and hold  for 3 seconds, it enters **RECALL** mode(See Fig. A).

To view each recorded data by pressing

 or .

Short press  and it escapes from recall mode.



To delete all records in **MEMO**, press and hold  for 3 seconds in recall mode.



Fig. A

 Press momentarily and the back-light illuminates for approx. 10 seconds then turns off automatically.



Press momentarily to enter Record mode. **REC** icon shows at the left lower screen and the timer starts (Fig. B).



Press again and the display cycles through **MAX** (Fig. C) and **MIN** (Fig. D) and back to current recording.



Other button functions are locked out in this mode except for  and .



Fig. B




Fig. C



Fig. D

**Note:**

Max/Min function is only available in Record mode. It shows the Max/Min reading since  is pressed.

Press and hold  for 3 seconds to turn off the record function and return to the normal mode.



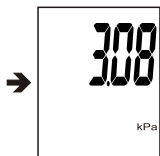
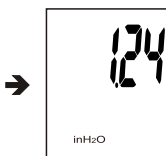
Press this button to freeze the current reading (Fig. E) and press it again to return to normal mode.



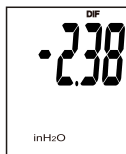
Fig. E

**UNIT**

Press momentarily and the unit cycles through "inHg", "psi", "ftH<sub>2</sub>O", "inH<sub>2</sub>O", "Ozin<sup>2</sup>", "bar", "kPa", "mbar", "Kgcm<sup>2</sup>" and "mmHg". (See Fig.F &G).

**Fig. F****Fig. G****DIF**


Press to enter Difference mode to monitor pressure change. **DIF** icon appears on the right side of the LCD and the meter will take the current reading as the baseline and set it as relative zero (see Fig.H). In this mode, readings on the main display indicates the pressure change comparing to the baseline.

**Fig. H** →

**(Note: The displayed readings here is not the differential pressure between two ports, but pressure change from a certain differential pressure)**

Press this button again and it returns to normal mode.

## MANUAL ZERO SETTING

Conduct zero setting to make sure the meter is ready for a new measurement. While the meter is on and no pressure applied to the connector, press  for 5 seconds, it displays "0.0.0.0" from right side of the LCD to the left (See Fig.I) and returns to normal mode (See Fig.J). The zero setting is completed.

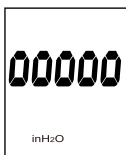


Fig. I



Fig. J

## AUTO POWER OFF (SLEEP FUNCTION)




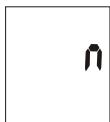
This instrument shuts off automatically in approx. 20 minutes of inactivity. For recording or operating over longer periods of time, you can disable the sleep mode by pressing  and  simultaneously before power on. An "n" will appear in the middle of the screen at which time you can release the  button (See Fig. K). The disabled setting will be invalid after power off.

Fig. K →





## SPECIFICATION

	<b>Pressure</b>
<b>Range</b>	0~±1psi(82681); 0~±6psi(82682) 0~±15psi(82683)
<b>Resolution</b>	See data sheet below
<b>Accuracy</b>	Combined accuracy +/- 1.0%FS
<b>Response time</b>	0.5 seconds
<b>Lug&amp;Tubing</b>	4mm lug- orange tube 500mm long
<b>Operation Condition</b>	0~50°C <80% RH
<b>Storage Condition</b>	-20~50°C <90% RH
<b>Dimension</b>	139 x 48 x 26 mm(meter)
<b>Unit Weight</b>	Approx. 160 gram
<b>Max. Pressure</b>	82681- 2psi; 82682- 12psi 82683- 30psi

### **Range&resolution**

	<b>Model</b>	<b>82681</b>	<b>82682</b>	<b>82683</b>
<small>RANGE &amp; RESOLUTION</small>				
psi	±	1.000 <sub>(0.001)</sub>	6.000 <sub>(0.001)</sub>	15.000 <sub>(0.001)</sub>
KPa	±	6.89 <sub>(0.01)</sub>	41.36 <sub>(0.01)</sub>	103.42 <sub>(0.01)</sub>
mmHg	±	51.7 <sub>(0.1)</sub>	310.3 <sub>(0.1)</sub>	775.7 <sub>(0.1)</sub>
Kgcm <sup>2</sup>	±	0.070 <sub>(0.001)</sub>	0.422 <sub>(0.001)</sub>	1.055 <sub>(0.001)</sub>
mBar (hpa)	±	68.9 <sub>(0.1)</sub>	413.7 <sub>(0.1)</sub>	1034.2 <sub>(0.1)</sub>
bar	±	0.069 <sub>(0.001)</sub>	0.414 <sub>(0.001)</sub>	1.034 <sub>(0.001)</sub>
inH <sub>2</sub> O	±	27.68 <sub>(0.01)</sub>	166.08 <sub>(0.01)</sub>	415.20 <sub>(0.01)</sub>
inHg	±	2.036 <sub>(0.001)</sub>	12.216 <sub>(0.001)</sub>	30.540 <sub>(0.001)</sub>
ftH <sub>2</sub> O	±	2.307 <sub>(0.001)</sub>	13.840 <sub>(0.001)</sub>	34.600 <sub>(0.001)</sub>
Oz/inch <sup>2</sup>	±	16.00 <sub>(0.01)</sub>	96.00 <sub>(0.01)</sub>	240.00 <sub>(0.01)</sub>

## TROUBLESHOOTING

### **?Power on but no display.**

Check if the batteries are in good contact and correct polarity.

?  **indication.**

The battery voltage is running out.

? **E02.** The value is under range.

? **E03.** The value is over range.

**Note:** Over ranged measurement will damage the sensor.

? **E04.** Data source error. The error is caused by original data problem. For example, the Min/Max display in record mode. Or the reading in DIF mode.

## WARRANTY

The meter is warranted to be free from defects in material and workmanship for one year from the date of purchase. This warranty covers normal operation and does not cover battery, misuse, abuse, alteration, tampering, neglect, improper maintenance, or damage resulting from leaking batteries. Proof of purchase is required for warranty repairs. Warranty is void if the meter has been opened .

## RETURN AUTHORIZATION

Authorization must be obtained from the supplier before returning items for any reason. When requiring a RA (Return Authorization), please include data regarding the defective reason, the meters are to be returned along with good packing to prevent any damage in shipment and insured against possible damage or loss .

## **Accuracy, the Zenith of Measuring / Testing Instruments !**

- ▲ Hygrometer/Psychrometer
- ▲ Thermometer
- ▲ Anemometer
- ▲ Sound Level Meter
- ▲ Air Flow meter
- ▲ Infrared Thermometer
- ▲ K type Thermometer
- ▲ K.J.T. type Thermometer
- ▲ K.J.T.R.S.E. type Thermometer
- ▲ pH Meter
- ▲ Conductivity Meter
- ▲ T.D.S. Meter
- ▲ D.O. Meter
- ▲ Saccharimeter
- ▲ Manometer
- ▲ Tacho Meter
- ▲ Lux / Light Meter
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- ▲ Data logger
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