

# Vacuum Gauge

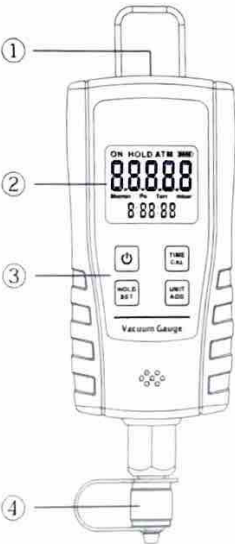
## Operation Manual

This product, built with Pirani professional vacuum sensor, can precisely measure the vacuum level for getting the information of best dehumidification and removal of foreign matter (Such as oil,impurities etc.),obtaining the best status for charging refrigerants,real-time monitoring and measuring the leakage to vacuum system,distinguishing the vacuum pump quality.

### Operation Instructions

- 1.Measure the vacuum according to instruction and within the scope of the parameters specified in manual.
- 2.Do not clean the instrument with corrosive detergent or solvent.
- 3.Wear goggles and protective gloves.
- 4.Tighten the copper cap and store it in a dry place.
- 5.Can not be used for measurement in non-atmospheric environment (the reading is inaccurate in refrigerant or other gas environment, If measure in non-atmospheric,the accuracy will resume normal after place it in atmospheric environment for 24 hours at rest).
- 6.Do not operate in high-concentration flammable and explosive gas environment,because the sensor needs preheating.

### Product Description



①	Micro-USB Charging Port
②	Display screen (vacuum, unit, electricity, time)
③	Power Button: Power on and off
	Timing Button TIME/CAL: Time, calibration and save the values when setting modes
	Setting Button HOLD/SET: data retention, setting mode
	Unit Button UNIT/ADD: Unit,mode of Non-automatic Power off, modify the value when setting mode
④	7/16"-20UNF (1/4" SAE)

Technical Parameter

Maximum overload pressure	14PSI/0.1Mpa
Range	0~10000 Pa、0~100.00 mBar、0~75.000Torr、0~75000 Micron
Resolution	0.01 (<10Pa)、0.0001 (<10mbar)、0.0001 (<10Torr)、1 (<30000Micron)
Accuracy	2-100Pa: ±5% of reading (at 20℃)
Operating temperature	0-50℃ (32-122°F)
Unit	Pa、mbar、Torr、Micron (Remark: Micron=mTorr, Torr=mmHg)
Refresh rate	0.5S
Connections	7/16"-20UNF (1/4" SAE)
Sensor	Pirani sensor
Lithium battery	1800mAh (standby time:about 40 hours)
Charging parameters	5V 1A, charging time about 3-4 hours, Micro-USB interface
Automatic power off	10 minutes
Applicable environment	atmospheric environment
Other functions	Acousto-optic alarm, leakage alarm, anti-pollution connection accessories, time

Basic Operations

1. Press the power button for 1 second. When the display screen shows "- - - -", the vacuum gauge finish preheating and booting.
2. Connect with vacuum system directly or through Connecting accessories (it is recommended to connect through connecting accessories with built-in anti-pollution filter element).
3. Turn on the vacuum pump, The display screen will show the corresponding vacuum degree from largest to smallest. After the vacuum degree is reduced to the set point of alarm value, the Acousto-optic alarm will work for 10S.
4. Press the power button for 1 second to power off.

Unit Selection

Press UNIT/ADD to switch units.

Set The Alarm Value

1. Press the HOLD/SET button for 1 second to enter into the setting interface.
2. Press the HOLD/SET button to select the digital to be set, and the selected digital will flicker.
3. Press the UNIT/ADD button to modify the flickering digital.
4. Press the TIME/CAL button to save the value after setting.

Vacuum Leakage Alarm

The vacuum gauge will beep and alarm, what's more, the backlight will flicker when the vacuum degree reverses to the set point from smallest to largest.

Backlight

Press power button momentarily to turn the backlight on, Press again, then the backlight will be turned off.

## **Mode of Automatic Power Off**

Automatically power off without any operation for 10 minutes.

## **Mode of Non-automatic Power off**

Long press UNIT/ADD button for 1 second, the screen displays ON ,enter into the mode of Non-automatic Power off.,it will not automatically power off.

## **Data Retention**

Press the HOLD/SET button to fix the displayed reading,then press again,the fixation can be relieved,vacuum measurement resume.

## **Timing function**

Once turn on,it will start timing automatically,Press TIME/CAL button,zero out and restart timing.

## **Charging mode**

No matter power on or off, When the vacuum gauge is connected with micro-USB for charging, the battery icon flicker,which means it's charging,After a full charge,the battery icon does not flicker any more.

### **Caution:**

- 1.Don't wait for the battery to be recharged at low power level, try your best to recharge as often as possible in order to prolong the service life of the battery.
- 2.When the battery is fully charged, please remove the charger in time to avoid charging too long time,otherwise,there may be some damages to battery.
- 3.Do not charge at ambient temperature above 40℃ or under direct sunlight, otherwise the battery may be damaged.
- 4.Kindly suggest to recharge after power off,because recharge in a power-on state will make the battery icon not flicker Because of environmental interference.

## **Full-scale calibration**

When the vacuum gauge finishes preheating, the screen does not display " - - - - -", and at standard atmospheric pressure, long press the TIME/CAL button until the screen displays ATM,which means full-scale calibration is finished.

## **Zero setting calibration**

Connect the vacuum gauge with vacuum system,Once the vacuum degree of the vacuum system reaches 0.1Pa,after power off and recharge, long press the TIME/CAL key until the screen shows "0.1Pa" to complete the zero setting calibration.

Note: non-professionals are not allowed to operate this function,a vacuum chamber and a 0.1Pa standard diaphragm vacuum gauge are required to complete the zero setting calibration.

The Zero setting calibration will be completed before shipment,so as to ensure the accuracy of every vacuum gauge.

Sensor Cleaning

In the process of using, the sensor may be contaminated by impurities, so it is necessary to clean the sensor. The specific steps are as follows:

- 1. Turn off the vacuum gauge.
- 2. Remove excess impurities.
- 3. Inject isopropanol or alcohol into the sensor chamber with a dropper or syringe,tighten the copper cap, and wash repeatedly for 3 to 4 times.
- 4. We could vacuumize or leave it in a dry place for more than 2 hours until the sensor gets dry.
- 5. Inspect the vacuum gauge and arrange zero setting calibration.

Attachment

Micro-USB cable, anti-pollution connection accessories ( Extension junction, T-junction ), instructions.

Possible Faults And Troubleshooting

fault	Troubleshooting
Failed to power on	Battery is exhausted, please connect with Micro-USB for charging.
Inaccurate ultimate vacuum	Check whether the joint is tightly connected to ensure no leakage, Zero setting calibration, Clean Sensor.
There is a ultimate vacuum value on screen after power on	Please arrange Full-scale calibration in atmospheric environment. If the inaccurate full-scale are caused by Operation in the refrigerant environment,please place it in atmospheric environment for 24 hours at rest.