

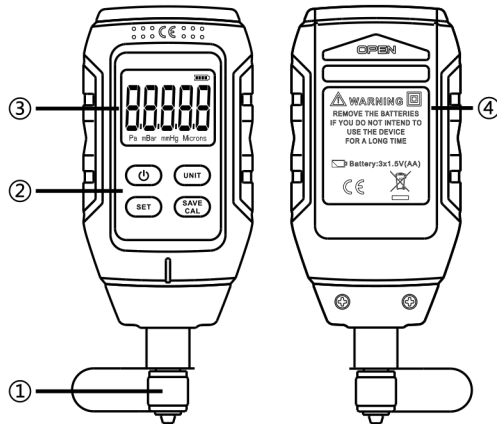
### 1. Description

VMV-1 built with Pirani professional vacuum sensor can precisely measure the vacuum level. From the measurement, you can therefore gather information about humidity and the removal of foreign matter (oil, foreign gases, etc.), and thus know the best status to fill refrigerants. VMV-1 can be used for monitoring vacuum system, leaking detection and distinguish the pump in quality.

### 2. Safety Instruction

- 2.1 Operation should according to this instruction and within the scope of the specified parameters.
- 2.2 Replace the batteries with new ones when the power is low. Do not mix new batteries with old batteries, and different brands of batteries are forbidden. Remove all batteries if it remains unused for a long period.
- 2.3 Do not clean the instrument with corrosive detergents or solvents.
- 2.4 Wear goggles and protective gloves.
- 2.5 Tighten copper cap and stored in a dry place.

### 3. Instrument overview



①	1/4" Flare
②	⏻: Power on/Off/Backlight
	UNIT: Unit selection/Add value in Set Mode
	SET: Long press the button into Alarm Set Mode
	SAVE/CAL: Save alarm value/Full scale calibration/ Zero Calibration in Set Mode
③	Display (Vacuum degree, Units and Battery capacity)
④	Battery cover (3×AA batteries)

### 4. Technical Parameters

Maximum Overload Pressure	14PSI / 0.1Mpa
Range	0~10000 Pa, 0~100.00 mBar, 0~75.000 mmHg, 0~75000 Micron
Resolution	0.01 (<10 Pa), 0.0001 (<10 mBar), 0.0001 (<10 mmHg), 1 (<30000 Microns)
Accuracy	2~100 Pa: ±5% of reading (at 20°C)
Operating Temperature	0~50°C (32~122°F)
Battery Life	45 hours (3×AA batteries)
Unit	Pa, mBar, mmHg, Microns
Refresh Rate	0.5 second
Connections	1×1/4" Flare
Sensor	1× Pirani sensor
Auto Off Time	10 minutes
Backlight Time	20 seconds
Buzzer Alarm	90 db, shut down after 10 seconds
Weight	About 125g (without batteries)
Application	Atmospheric environment (It can not be measured in the presence of refrigerants and other gas environment)

### 5. Operations

- 5.1 Install three "AA" batteries.
- 5.2 Long press and hold the power button ⏻ for 3 seconds to turn LCD light on. The display shows " - - - " when the unit is completely warm-up.
- 5.3 Connected to system directly or via connection accessories.
- 5.4 Start the vacuum pump, the display will show ultimate pressure from high to low. Once reached the target ultimate pressure, the vacuum meter buzzing alarms and the backlight will blink simultaneously for 10 seconds.
- 5.5 Press and hold power button ⏻ for 3 seconds to turn the power off.

### 6. Unit Selection

Press the UNIT button to select the unit of measurement.

### 7. Set the Alarms

- 7.1 Press and hold "SET" button for 3 seconds to enter into Set Mode.
- 7.2 Press "SET" button to select digit position. The digit position will blinking when it is selected.
- 7.3 Press "UNIT" button to modify the blinking value.
- 7.4 Press "SAVE/CAL" button to save the set value.

### 8. Vacuum leak alarm

The vacuum meter will buzzing alarm when the vacuum becomes poorer until to the setting value, and the backlight will blink simultaneously.

### 9. Backlight

Press power button ⏻ to turn the backlight on when the instrument power on. The backlight will automatically turn off after 20 seconds.

### 10. Auto-off

The unit is set to automatically power off without any operation for 10 minutes.

### 11. Full Scale Calibration

If the unit completes warm-up and the display not shows " - - - - ", press and hold button SAVE/CAL at atmospheric pressure for 3 seconds until the display shows " - - - - ".

### 12. Zero Calibration

Connect vacuum meter to vacuum system, when the vacuum level of system reaches 0.1Pa, and then press and hold button "SAVE/CAL" for 3 seconds until the display shows "0.1Pa" to complete the zero calibration.

### 13. Sensor cleaning

During the procedure, it is possible that the sensor is polluted by foreign matter, and then you need to clean the sensor.

Follow these instructions:

- 13.1 Turn off the vacuum gauge, and remove all the batteries.
- 13.2 Shake out the foreign matter.
- 13.3 Using an eye dropper or a syringe, fill the sensor chamber with alcohol or isopropanol. Tighten the copper cap, and then rinse the sensor chamber for 3~4 times with alcohol or isopropanol.
- 13.4 Thoroughly dry the sensor by vacuumization or at least 2 hours of air dry.
- 13.5 Inspect the vacuum meter and make a Zero Calibration.

### 14. Battery installation

Remove battery compartment cover, install three "AA" batteries and make sure it is in the correct polarity. Attention: Remove all batteries from the instrument if it remains unused for a long period.

### 15. Appendix

3×AA Batteries, Connection accessories, Tee fitting, Instructions.

### 16. Troubleshooting

Cannot Power On	Check the battery and the polarity
Inaccurate ultimate vacuum	Check the connection if is tight. Zero Calibration /Clean the sensor
There is vacuum degree in start-up while inaccuracy of full scale	Please full scale calibration under atmospheric environment. If the degree of fullness caused by the refrigerant is not allowed, please hold for 24 hours and then calibrate the full scale.



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Making Your Job More Enjoyable

# Vacuum Gauge Operation Manual VMV-1



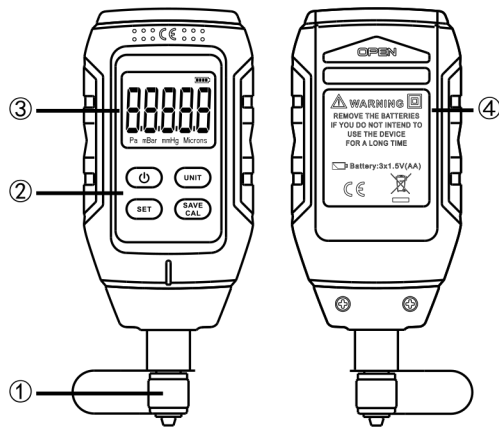
概述

VMV-1采用Pirani专业真空传感器,可以精准测量真空度,从而获取真空系统最佳除湿及清除异物(油、杂质气体等)信息,获取最佳加注冷媒状态,实时监控真空系统,测量真空系统是否泄漏,辨别真空泵优劣等用途。

安全操作说明

- 1、在进行测量时,应遵循使用操作说明,在说明书参数范围内使用本仪器。
- 2、当电量不足时,应及时更换新电池,新旧电池、不同品牌电池不能混合使用,长时间不用时,应取出电池。
- 3、不要使用腐蚀性清洁剂或溶剂清洁本仪器。
- 4、戴好护目镜和防护手套。
- 5、旋紧铜帽,干燥处存放。

产品描述



①	7/16"-20UNF
②	按键心: 开机/关机/开机时开启背光
	按键UNIT: 单位选择/设置模式时增加数值
	按键SET: 长按进入设定警报值模式
③	按键SAVE/CAL: 设置模式时保存警报值/满度校准/置零校准
	显示屏(真空度、单位和电量显示)
④	电池盖(3节AA电池)

技术参数

最大过载压力	14PSI / 0.1Mpa
量程	0~10000 Pa、0~100.00 mBar、0~75.000 mmHg、0~75000 Micron
分辨率	0.01 (<10 Pa)、0.0001 (<10 mBar)、0.0001 (<10 mmHg)、1 (<30000 Microns)
测量精度	2~100 Pa: 读数±5% (在20°C时)
操作温度	0~50°C (32~122°F)
电池寿命	45小时(3节AA电池)
单位	Pa、mBar、mmHg、Microns
刷新率	0.5 秒
接口	1个 7/16"-20UNF
传感器	1个皮拉尼传感器
自动关机时间	10 分钟
背光时间	20 秒
蜂鸣喇叭	90分贝音量, 响10S后关闭
重量	约125克(不含电池)
适用范围	大气环境(不能用于含冷媒等其他气体环境下测量)

基本操作

- 1、安装3节AA电池。
- 2、长按电源键心3秒钟直到“嘀”的一声后放开,屏幕显示“----”,真空计预热开机完成。
- 3、使用连接辅件或直接接在真空系统上。
- 4、开启真空泵,显示屏从大到小显示相应真空度,真空度降到设定警报值,喇叭开始蜂鸣,同时背光闪烁持续10S后停止。
- 5、长按电源键心3秒钟关机。

单位选择

按UNIT键切换单位。

设定警报值

- 1、长按SET键3秒钟进入设置界面。
- 2、再按SET键选择要设置的数位,选中的该位会闪烁。
- 3、按UNIT键修改闪烁的数字。
- 4、设定好数值后,按SAVE/CAL键保存。

真空泄漏警报

设定好警报值,当真空度数值从小到大倒退到设定值后,喇叭开始蜂鸣,同时背光闪烁。

背光显示

在开机状态下,按一下电源键心,背光开启,20秒后自动关闭。

自动关机

无任何按键操作10分钟后自动关机。

满度校准

当真空计开机预热完毕后,显示屏没有显示“----”,在大气压力下长按SAVE/CAL键3秒直到屏幕显示“----”,完成满度校准。

置零校准

真空计连接到真空系统,待真空系统真空度达到0.1Pa时,开机状态下长按SAVE/CAL键3秒直到屏幕显示“0.1Pa”,完成置零校准。

传感器清理

在使用过程中,传感器可能被杂质污染,此时需要清洁传感器,具体步骤如下:

- 1、使真空计关机,并取出电池。
- 2、甩出多余的杂质。
- 3、用滴管或针筒把异丙醇或酒精注入到传感器室内,旋紧铜帽,反复清洗3-4次。
- 4、通过抽真空或者放置2小时以上直到传感器干燥。
- 5、检测真空计并进行置零校准。

电池安装

按电池盖箭头方向推开电池盖,安装3节AA电池,注意电池极性安装正确。注意:长时间不用时,应取出电池。

附件

3节AA电池、连接辅件、三通接头、说明书。

可能发生的故障及排除方法

故障	排除方法
开不了机	检查电池及正负极
真空度不准	检查连接是否紧密置零校准/清理传感器
满度不准, 开机就有真空度数值	请在大气环境下进行满度校准。如在冷媒环境下导致的满度不准,请静置24小时后再进行满度校准。

合格证			
产品名称	真空计	型号规格	VMV-1
出厂编号		出厂日期	
检验依据		检验结论	
检验员		检验员	
检验日期		有效日期	

# 让工作更轻松!

## 真空计使用说明书

### VMV-1

