



# VACUOMETER INSTRUCTIONS



**FD-VG90**

For safe and correct usage, please read this user instruction manual carefully before using the product.

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## FUNCTION MANUAL OF DIGITAL VACUUM GAUGE

The **Freddox FD-VG90** is your solution for precise vacuum measurement within your circuits, ensuring moisture-free and optimal conditions before charging. This tool offers a high-quality sensor that guarantees accurate results.

The Freddox Vacuumeter achieves measurements with remarkable precision, accurate to 0.1 microns. Its built-in target alert function notifies you promptly once the desired vacuum level has been achieved.

Designed with portability in mind, the FD-VG90 features a compact form and offers an extended battery life. It includes an automatic power-off function, making it an indispensable companion for your day-to-day operations.



## FEATURES

- Measurement mode: Absolute pressure (ATM~0.1Pa)
- Vacuum Unit: Pa, mBar, mmHg, Micron
- Resolution: 0.1 Pa (maximum pressure)
- Target vacuum alert function available
- Portable design, battery power display
- In atmosphere condition, shown "-----" on LCD



## TECHNICAL PARAMETER

Project	Description
Range	99999Pa~0.1Pa, 740000~0.75 Micron
Accuracy	0.1Pa~1000Pa; Reading $\pm 5\%$ (at 20°C)
Resolution	0.1Pa(<10Pa); 1Pa(<100Pa); 10Pa(<1000Pa)
Unit	Pa, mBar, mmHg, mTorr, InHg, Microns
Battery Life	40 Hours (3 x AA Battery)
Maximum Overload Pressure	0.5 Mpa / 72 Psi
Operating Temperature	-5~50°C (-23~122°F)
Buzzer Alarm	90 db, shutdown after 10 seconds
Inlet Port	7 / 16" ~ 20UNF (1 / 4" SAE)

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## OPERATING INSTRUCTIONS

### TURN ON / OFF

Press "ON" to turn on. Press and hold to turn off.

### UNIT SWITCH

Press "UNIT" to switch unit.

### BACKLIGHT ON / OFF

Press "ON" to turn ON/OFF. To save battery power, backlight will turn off automatically after 15 seconds.

### ALERT SETTINGS

When vacuum pressure reached set pressure, alert will be activated (screen flicker, buzzer beeps). Press any key to quit alert or wait 35 seconds, alert will automatically stop.

### TARGET VACUUM SETTING:

1. Press "SET" to activate target vacuum set mode, the LCD will flicker.
2. Press "UNIT" to set target vacuum. The chosen digit will flicker.
3. Press "SET" to choose "0-9".
4. After target vacuum is set, press "SAVE CAL" to save and activate monitor mode.
5. After monitor mode is activated, buzzer beeps periodically.
6. In monitoring mode, if vacuum pressure is lower than set pressure, an alert will be activated.
7. Press and hold "SET" to quit monitor mode.

### VACUUM GAUGE CALIBRATION

- When the vacuum measured by the vacuum meter is deviated, calibration is needed.
- There are three kinds of calibration: Atmosphere calibration, Ultimate calibration and custom Calibration.
- When vacuum gauge is in atmosphere condition and if LCD doesn't show the following "- - - -", atmosphere calibration is needed.
- When ultimate vacuum data is different from standard vacuum gauge data, ultimate calibration is needed.

### ATMOSPHERE CALIBRATION:

Press and hold "SAVE CAL" to activate atmosphere calibration. LCD shown "-CALI-" means calibration succeed.

CAL 1

### ULTIMATE CALIBRATION:

Note: use this calibration only when vacuum is around 0.5 Pa. Otherwise it may affect accuracy of measurement.

Press and old "SAVE CAL" + "SET" to activate ultimate calibration. If calibration succeeds, the LCD screen will show "CAL 1" otherwise a "ERROR" will be shown.

Error

## CUSTOM CALIBRATION

Note: In order to achieve a better measurement result, calibrate at high vacuum conditions are recommended,

### 1. ENTERING CONFIGURATION MODE

Press and hold "UNIT" + "SET" when vacuum gauge just been turned on. Configuration mode will be activated (LCD will show 1-HI)

The LCD display shows the text "1-HI" in a large, black, digital font. The "1" is on the left, followed by a hyphen, then "HI" on the right.

### 2. ENTERING CUSTOM CALIBRATION MODE

Press "SET" and shift to configuration function "2-LO". Then press "SAVE CAL" to confirm. Custom calibration mode will be activated. (LCD digit will flicker).

The LCD display shows the text "2-LO" in a large, black, digital font. The "2" is on the left, followed by a hyphen, then "LO" on the right.

### 3. CONNECT VACUUM GAUGE TO VACUUM PUP AND START VACUUM PUMP

Ensure vacuum gauge is connected to vacuum pump tightly, start vacuum pump.

### 4. VACUUM DISPLAY ADJUST

Compare vacuum display on standard vacuum gauge and vacuum pump and adjust display data. Press "SET" to increase (press and hold to accelerate increase), pres "UNIT" to decrease (press and hold to accelerate decrease).

### 5. SAVE DATE

When the display on the vacuum pump is consistent with the standard gauge, save the calibration data and exit (press "ON" to end adjustment, now vacuum gauge return to configuration mode, LCD shows "2-LO").

The LCD display shows the text "2-LO" in a large, black, digital font. The "2" is on the left, followed by a hyphen, then "LO" on the right.

### 6. RETURN TO WORKING MODE

Pres "ON" to save and return to working mode, calibration is finished.





BEIJER REF AB  
Stortorget 8 • a215 37 Malmö • Sweden • Tel. +46 (0)40 611 21 50  
For more information, please visit : [www.beijerref.com](http://www.beijerref.com)

