CFV106 Pirani/Cold cathode compound vacuum gauge

Manual（Quick Version）

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Infitech, Makes Vacuum Measurement ***Easy and Simple.***

1 Safety Issues

PRG500 is a precision instrument for vacuum measurement, and its internal sensors are susceptible to damage under the following conditions

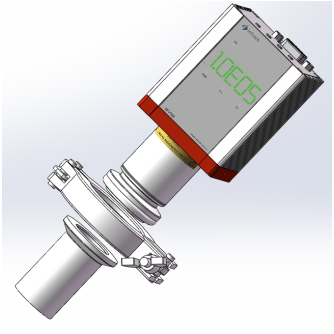
1）Withstand shock vibrations, such as accidental falls, if the drop height exceeds 0.8 meters, then the probability of sensor damage is greater than 80% when the;

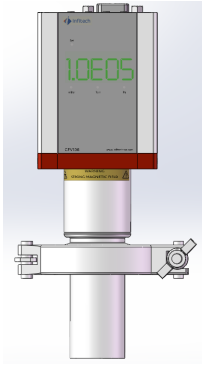
2) The tested medium gas contains strong oxidizing or corrosive components, making the sensor vulnerable to damage；

Therefore, it is necessary to check and avoid the occurrence of the above three situations before installing and using the vacuum gauge. The product damage caused by the above situations is not covered by the warranty.

2 Installation method

1）Standard KF25 flange installation

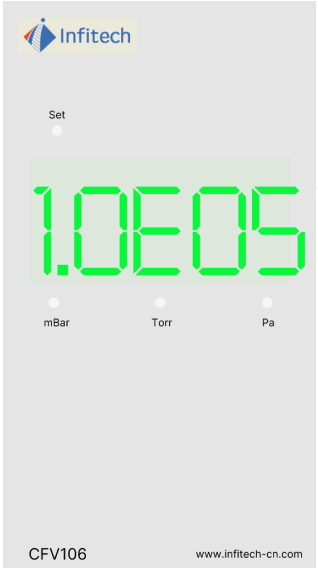




2）Please consult the manufacturer for other connection methods

3 Panel Layout Description

Front Panel



SET——Set Mode Light, always on during the set mode.
mbar,Tor,Pa——Indicator light for unit

Vacuum data reading method

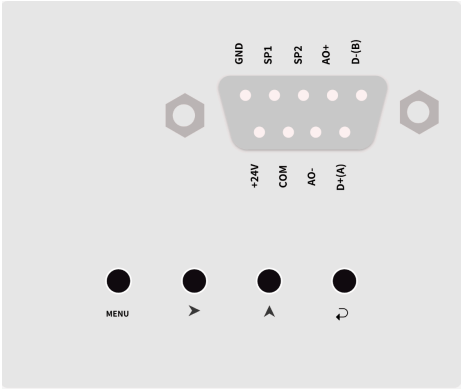
The vacuum data is displayed by Scientific Notation by default，The values shown in the above figure represent 1.0E+5Pa. Convert the Scientific Notation vacuum data to normal data as follows：

Vacuum =coefficient × The exponential power of 10

For example：

1.0E05=1.0*10^5=1.0*100000=100000Pa
3.2E03=3.2*10^3=3.2*1000=3200Pa
2.5E00=2.5*10^0=2.5*1=2.5Pa
1.8E-1=1.8*10^-1=1.8*0.1=0.18Pa

Top panel



The top of CFV106 consists of a DB9 female socket and 4 touch buttons. Power supply, data communication, analog output, and control point switches are all integrated into the DB9 data interface, as defined in Part 5.

Four touch buttons can complete all functional operations, including calibration,

display unit modification, communication address modification, control point setting, etc. For detailed operations, please refer to Part 4.

4 Button operation

MENU —— Activate the menu and switch between options in the menu or submenu

➤ ——Switch data activation position when modifying data or switch units when modifying display units

▲ ——Modify the value of the current activation location data and switch between 0 and 9

⮌ —— Confirm button, confirm the selected option or operation, and exit the setting mode

Long press the MENU button until the SET light is on, and the vacuum gauge enters the setting mode. The LED digital display switches from displaying real-time vacuum data to displaying menu function codes. Different function codes correspond to different function settings, and the meaning represented by each function code is shown in the table below

Function Code Description

Function Code	Description
ATP	atm calibration
HUC	vacuum calibration
SP1H	1 # Set point upper limit
SP1L	1 # Set point lower limit
SP2H	2 # Set point upper limit
SP2L	2 # Set point lower limit
U	Exchange display unit
d	Exchange data display mode
Ad	Modify 485 slave address
dFL	Restore factory settings

The operation process of each function is similar. After calling the corresponding function code, press the confirm button ⮌ to enter the function setting. Then, use the second button ➤ to switch between the submenu options for selection, or use the third button ▲ to modify numerical values. Then press the confirm button again to complete the setting operation. The system will automatically exit the setting mode and enter the vacuum degree display interface.

Using Switching Vacuum Units as an Example to Explain Menu Operation

Step1 : Long press MENU until the SET light is on to enter the setting mode.

Step2 : Short press the MENU key to switch between various menu function codes until U appears.

Step3 : Press the OK button to confirm the unit switching operation.

Step4 : Press the right key (second key) to switch between different units, and the corresponding unit's LED light will light up when switching.

Step5 :When the desired unit appears, press the OK key to confirm the selection, and the screen will automatically exit the setting mode. The new vacuum value will be displayed in the previously selected unit

Explanation on Setpoint:

VCT160N can adopt single point control or interval control. When using single point control, the upper or lower limits of the interval can be set to 0, which defaults to single point control. If both the upper and lower limits of the interval have values, it is interval control.

The delay feedback of single point control is 10%, for example, setting the control point to 100Pa. The control point is triggered when the vacuum drops to 100Pa. When the vacuum degree returns to 110Pa (100Pa * 10%), the control point is restored.

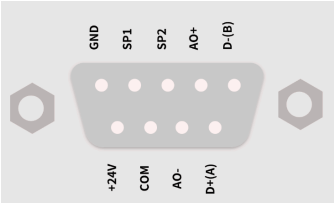
Regarding the setting of the upper and lower limits of the interval, theoretically, the higher the vacuum degree, the smaller the pressure value, so the value set

at point H will be smaller than that at point L. In fact, the program will automatically determine. Take a larger value as the lower limit of vacuum degree and a smaller value as the upper limit of vacuum degree, forming an interval.

Explanation on 485 address

The default 485 address is set to 1 when leaving the factory.

5 Wiring diagram



GND	-Power GND
SP1	-1# setpoint
SP2	-2# setpoint
AO+	-Analog output+
D-(B)	-RS485B
+24V	-24V power supply
COM	- Common for setpoint
AO-	- Analog output-
D-(A)	-RS485A

6 Formula for Analog Output

$$P = 10^{1.222(V-5.909)}$$

here：

P—Vacuum， unit Pa

V—Analog voltage，unit V

7 Calibration Method

Calibration for atmosphere:

1）Ensure that the vacuum gauge sensor is at atmospheric pressure (if the vacuum gauge is already installed on the flange, it is necessary to ensure that the connected pipeline or chamber is depressurized to atmospheric pressure)，

2）Long press the MENU button until the SET light is on, call up the function code ATP, and press the OK button to select,

3）Atmospheric calibration begins, and the LED flashes with ATP, indicating that calibration is in progress.

4）After calibration is completed, the interface will automatically exit the setting mode and display real-time vacuum degree.

Calibration for high-vacuum:

1) Ensure that the vacuum gauge sensor is in a vacuum environment below 0.01Pa，

2）Long press the MENU button until the SET light is on, call up the function code HUC, and press the OK button to select,

3）High-Vacuum calibration begins, and the LED flashes with HUC, indicating that calibration is in progress.

4）After calibration is completed, the interface will automatically exit the setting mode and display real-time vacuum degree.

Notes：

（1）The vacuum gauge needs to be powered on for 5-10 minutes to ensure that the vacuum gauge sensor is in a stable state;

（2）Before calibration, it is necessary to confirm the vacuum status to ensure that the vacuum is either below 0.01Pa or in the atmosphere. When the button is pressed, the vacuum gauge will automatically recognize and perform

corresponding hig-vacuum or atmospheric calibration。If the vacuum state is incorrect, it will cause the calibration of the vacuum gauge to be incorrect。

8 GaugeReader Software

Install GaugeReader software (free) on the computer, and then connect to the vacuum gauge with InfiGuageCon data acquisition module (paid, optional) . You can read the vacuum degree value through data communication, set control points, modify the 485 communication address, etc., The GaugeReader software can be downloaded through the official website www.infitech cn.com。

9 To get more support

Log in to the official website or scan the WeChat public account at below (recommended), reply "CFV106" you can get the detailed version of the CFV106 manual and other related information about the product. All the latest updated information will be published on the WeChat public account and the company's official website as well.

10 Warranty

The product is guaranteed for 12 months from the date of receipt, and the components directly in contact with the vacuum are not covered by the warranty. In addition, tearing off the warranty seal is invalid and may result in automatic loss of warranty eligibility.

11 Contact information

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