

PTZ-BOX CV

Manual



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company profile

Vemm tec Messtechnik GmbH as a Germany famous gas meter manufacturer, The main products include turbine meter ,rotary meter , EVC and so on..Exquisite manufacturing process of vemm tec has a long history before entering Chinese market.The turbine meter has been famous in the industry with the DANIEL brand, and it has been recognized by the majority of customers.

In order to provide Chinese users with better quality and timely service, vemm tec Messtechnik GmbH.In April 2005, we registered and set up a sales and maintenance research and development (Shanghai) co., LTD..As the technical support center of vemm tec in the whole asia-pacific region, the attitude of vemm tec excellence, based on the high quality, with advanced technology as the support, with good faith and thoughtful service as the purpose.It has developed into one of the well-known brands in the gas industry.Keep the credit in our heart and well known with action.With the responsibility of the product and responsible to the customers, more and more users have established long-term and stable cooperative relationship with us.We firmly believe that the responsibility and credit are above all,The company must be ushered in a new era of development.

1. Overview

Thank you for buying PTZ-BOX CV. This is a reliable, high - precision and stable device. Converts the actual volume to the standard volume pressure in actual temperature and pressure. It is a compact and mature product. The design of PTZ-BOX CV is based on high precision measurement of low power consumption. The operation is fairly simple and the supporting software can perform more complex operations.

2. Main feature

- one LF Pulse input.
- 2*6 lines 128×64 Pixel backlight LCD, six operation keys, one shortcut key, more humanized and more detailed display.
- high precision temperature sensor and pressure sensor are adopted to ensure the measurement accuracy.
- the temperature ,pressure and flow rate signal of the online detection medium are automatically corrected and compensated automatically.
- with the new microprocessor and high performance integrated chip, the high efficiency and low storage space is superior.
- PTZ-BOX CV is equipped with lp-03 lithium battery, without special requirement, easy to purchase and replace, the battery life can be set up correctly for 4-5 years.
- easy access to internal storage data and device configuration by RS232/485 and infrared terminal.
- the storage capacity can hold more than 1000 daily records and up to 26,000 records per hour. The output signal of the actual volume and the standard volume can ensure stable and reliable operation of the instrument.
- intrinsic safety, Ex ia IIC T4/T3 Ga
- IP65

3. Technical parameters

3.1 Mechanical parameter

- dimension: 156*156*75(mm)
- shell material: ABS+PC (anti-static)
- weight: 1.19Kg

3.2 parameter of power supply

- battery types: lithium battery LP-03, 3.6V/17Ah(size D)
- battery life: 4-5years
- memory battery type: 3.6V lithium battery, 1Ah(size 1/2 AA)
- battery life: 10years
- remaining battery is displayed on the LCD.
- power supply: 6-10VDC

3.3 Operating environment

- protection grade: IP65-according to EN 60529
- explosion-Proof: Ex ia II C T4/T3 Ga
- T4 range of temperature -25°C to 40°C
- T3 range of temperature -25°C to 60°C
- environmental Classes: Class I/Class II
- electronic compatibility: EMC test
- storage temperature: -40 to 85°C
- operation temperature: -25 to 60°C
- dangerous contact protection: cell voltage

3.4 Device accuracy

- standard volume accuracy: $< \pm 0.5\%$
- actual volume accuracy: no error

3.5 Measurement

Gas pressure and temperature can be obtained by pressure sensor and temperature sensor.

3.5.1 Parameters of the pressure sensor

- transmitter: absolute pressure
- range: 0.8-5 bar(abs)
2-10 bar(abs)
- accuracy: $\leq \pm 0.25\%$
- overload limit: 120% Q_{max}
- measure interval: 6-30s(could be set)
- external pressure sensor: G1/4thread

3.5.2 Temperature sensor

- transmitter: Pt1000(connected to the device)
- temperature range: -25 to 60°C
- measurement accuracy: $\leq \pm 0.25^\circ\text{C}$
- measure interval: 6-30s(could be set)
- sensor length: 70mm
- Sensor wire length: 2m

3.6 Pulse output

- operating voltage: <15V
- operating current: <100mA
- hindrance: 10 Ω
- pulse output *2

3.6.1 LF pulse input

- signal type: switch signal
- single-channel input
- non-load voltage: 2.5-3.6V
- short-circuit current: $\cong 3\mu\text{A}$

- maximum frequency: 5Hz
- pulse width: $\cong 40\text{ms}$
- gas meter constant (input) : 10、1.0、0.1 (m³/impuls)
- signal Type: Dry contact signal

3.7 Communication

- types: RS232, RS485, infrared
- protocol: Modbus
- baud rate: 9600Bd
- data format: data bits:8 , stop bit:1 , Parity Check:: none

3.7.1 RS232

- link wire: $\cong 30\text{m}$ (cannot be used in dangerous areas)

3.7.2 RS485

- link wire: $\cong 100\text{m}$
- input voltage: $\cong 10\text{V}$ (Maximum 5.5V in danger zone)

4. Installation

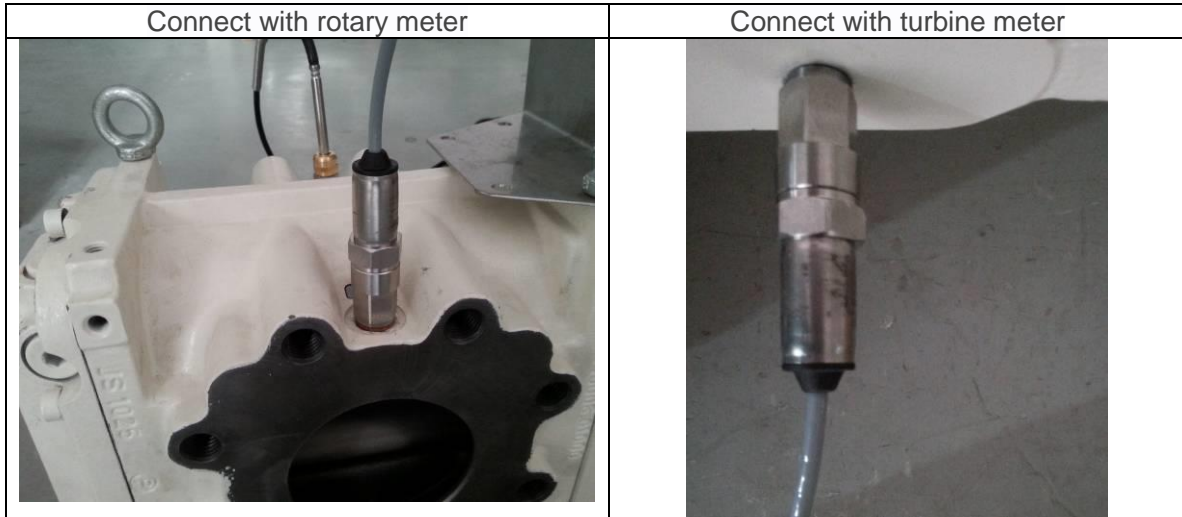
PTZ-BOX CV is suitable for installation in hazardous area, And it conforms to the explosion-proof grade :Ex ia II T4/T3 Ga(intrinsic safety)

4.1 PTZ-BOX CV is connected with rotary meter and turbine meter



4.2 External connection of the device

1) Pressure connection: The external G1/4 pressure sensor is directly connected to the outlet of the pressure outlet of the gas gauge. The sealed gasket on the pressure sensor is sealed.



2) Temperature connection: The temperature sleeve of the turbine meter must be installed in body or meter with a diameter of 1-2 times the downstream. For the rotary meter, the temperature sensor should be installed upstream or downstream of the gas meter. The temperature sensor can be inserted into the temperature sleeve, must be inserted into the bottom, and then tightened. The wires at the top of the sensor should prevent the oil. The insertion depth of the temperature sleeve should be on the 2/3 depth of the meter.



3) External power supply connection: Connect 6-10v direct current (if you do remote communication, you must connect to external power supply)

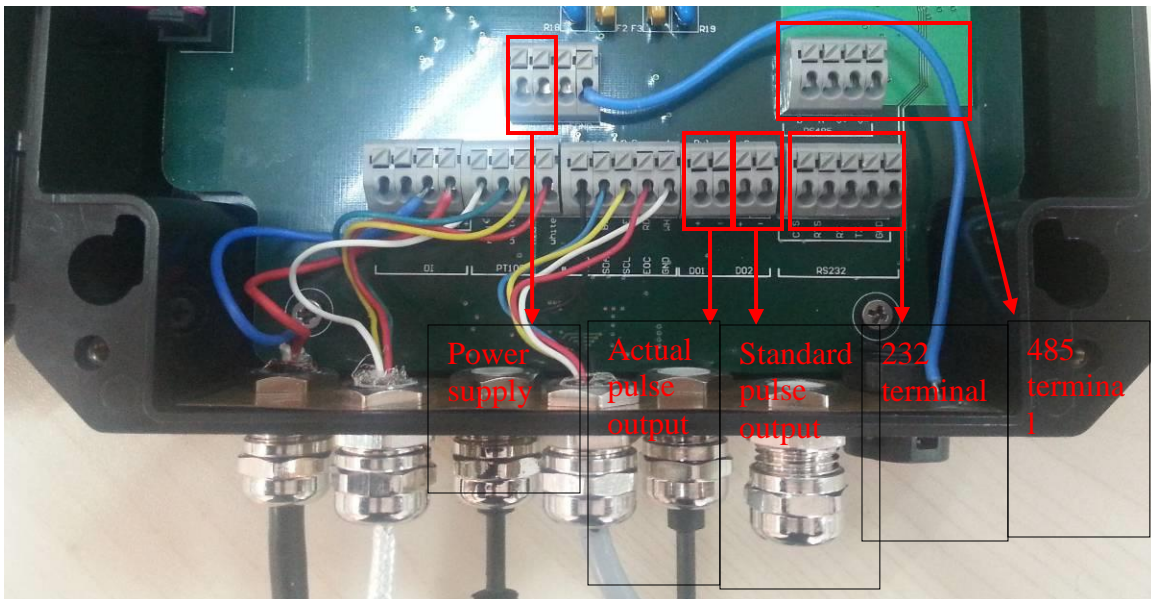
4) Communication connection: RS232/RS485

5) The connection of the pulse line: connected with the index head



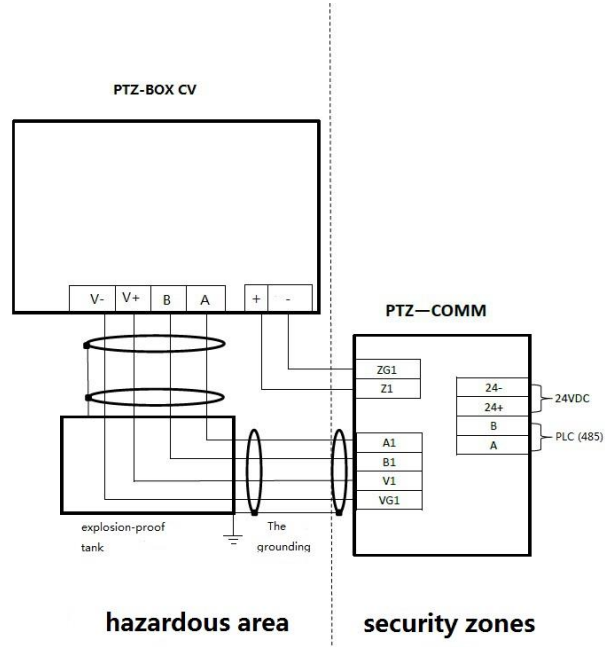
Pulse output connection: External power supply is recommended.

4.3 The internal connection of the device

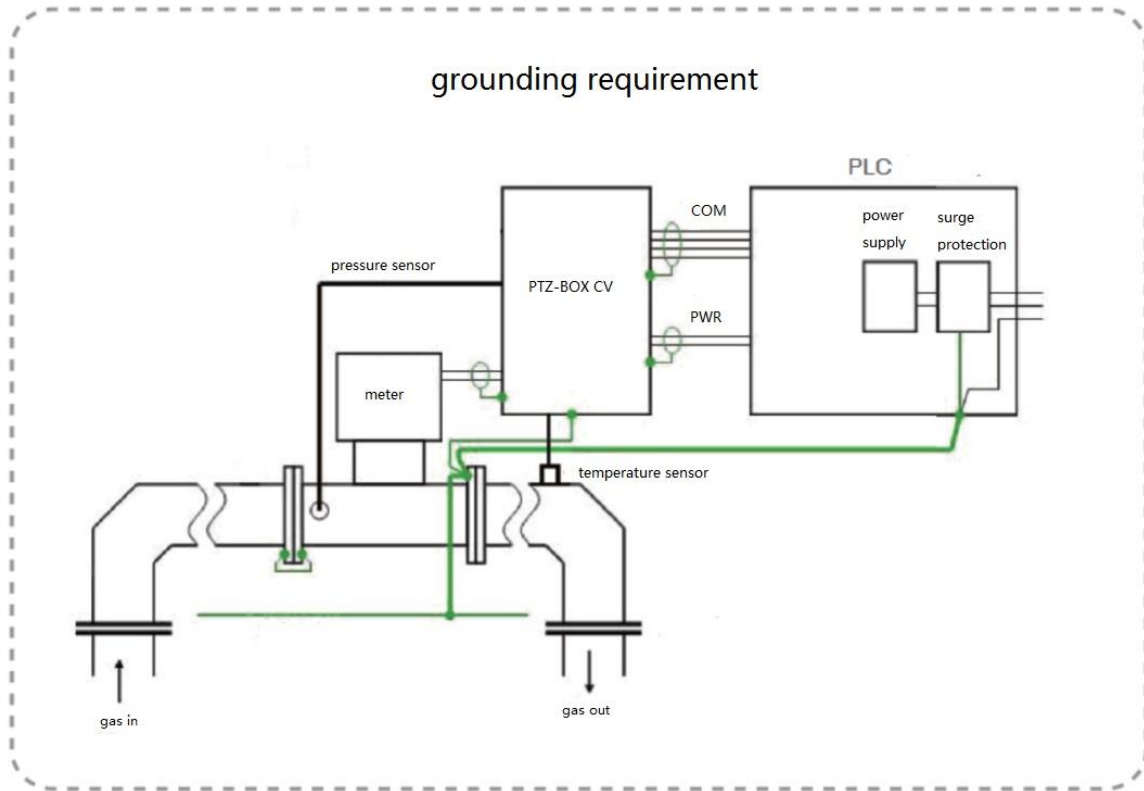


4.4 Connect to the ptz-comm communication module

PTZ-BOX CV should be installed and maintained according to the application standard installed in hazardous area.



4.5 Grounding requirement

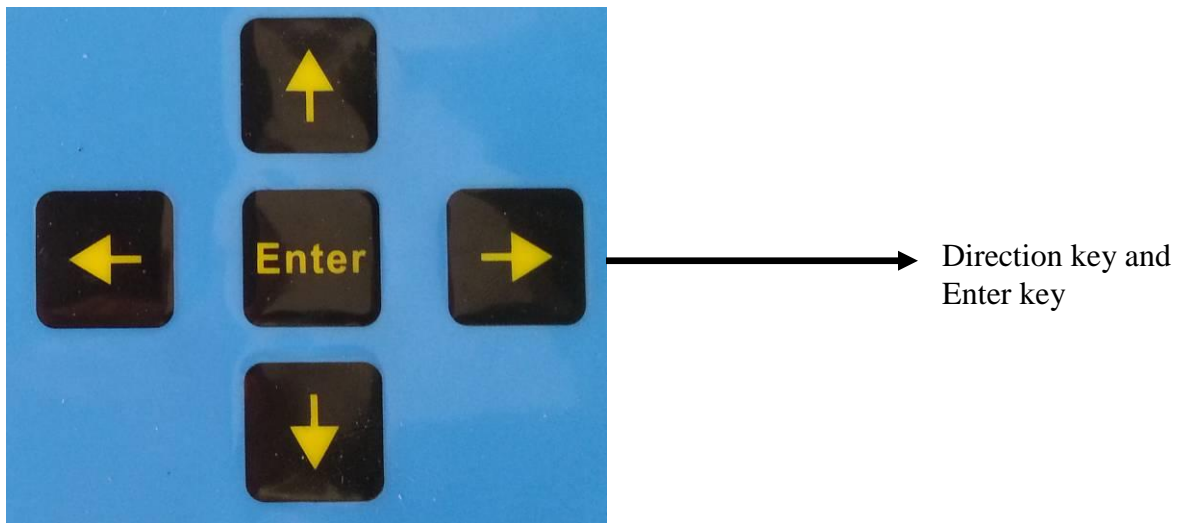
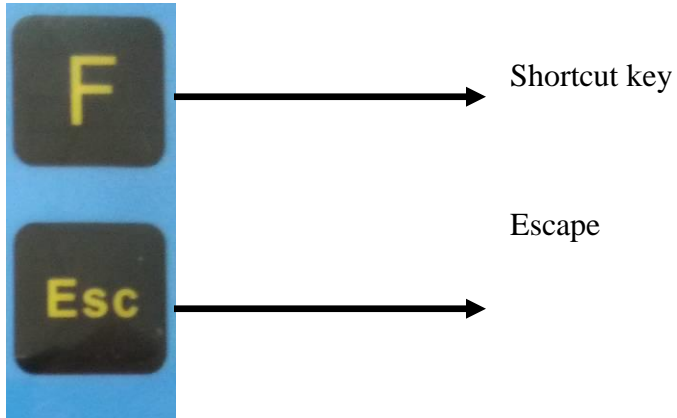


4.6 Fixed installation

In the standard configuration, there is a mounting bracket that is sent along with the PTZ-BOX CV. The mounting bracket can be fixed in the turbine meter or the flange joint of the rotary, there are four holes in the PTZ-BOX CV interior for fixing on the mounting plate.

5. Display and operation

keys operation:

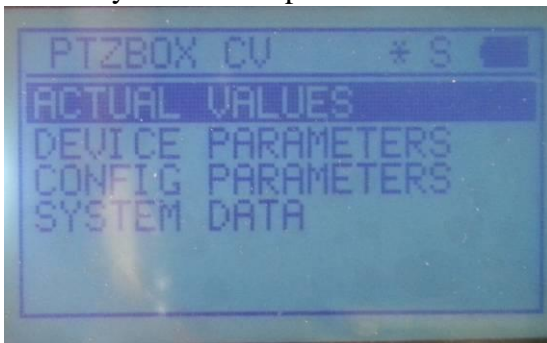


F shortcut key to view the parameters:

Standard Flow
Flow
K
Pulse Weight
Actual Volume
Standard Volume

Battery Capacity
Err Actual Volume
Err Standard Volume
Temperature
Pressure
Com.ratio Z_s/Z_a
Convers.factor

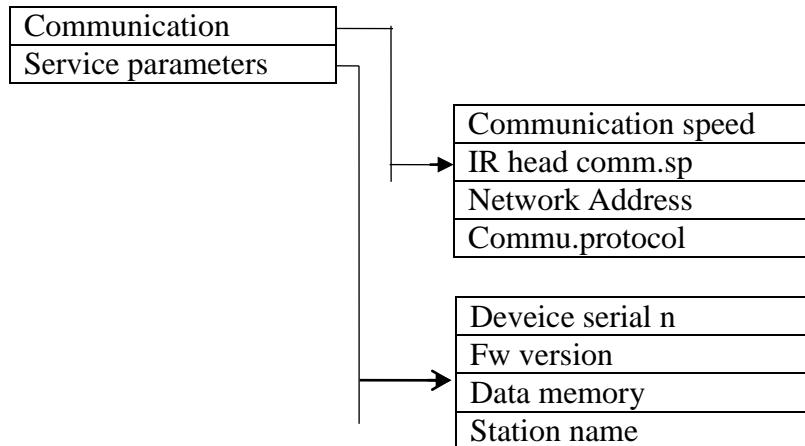
Enter key to view the parameters:



ACTUAL VALUES:

Standard Volume
Actual Volume
Pressure
Temperature
Convers.factor
Com.ratio Z_s/Z_a
Err Standard Volume
Err Actual Volume
Battery Capacity
Flow
Standard Flow

DEVEICE PARAMETERS:



CONFIG PARAMETERS:

Data / Time

6. Battery use

PTZ-BOX CV is equipped with lithium LP-03, 3.6V/17Ah(size D)batteries ,long life ,Batteries can be replaced in dangerous areas.,But the following rules must be followed:

- The original battery must be provided by Vemm tec
- When replacing batteries in dangerous areas, it is necessary to prevent the static electricity caused by friction.

6.1 Replacement of battery program

Before replacing the battery, it is recommended to read out all the data. The device reads the data from the EEPROM memory and continues to measure it based on the parameters previously set. Data stored in various documents still exists.

6.2 Basic battery life

If the battery is used, the following conditions can be used for at least 5 years. ◦

- The measuring period is equal to 30 seconds (be set)
- The pulse input interval : $\leq 5\text{Hz}$
- Show maximum time of 2 minutes per day.
- The communication is not more than 2 minutes per day (read the data once a day)
- The ambient temperature is about 25 C.

7. Maintenance of equipment

7.1 Battery

When using internal battery power supply, and when the battery is less than 10%, please replace the battery in time.

7.2 Conventional troubleshooting

7.2.1 Stress test failure

Please confirm that the intake pressure is properly connected.

7.2.2 Temperature test failure

Please confirm that the temperature sensor is connected.

7.2.3 No volume accumulation

Please confirm that the pulse connector connected to the meter is properly connected.

7.2.4 No standard volume

Please confirm whether the correction device is wrong.

7.2.5 The screen

When the device is powered by an internal battery, in order to save energy, the display will automatically shut down after 40 seconds of data display. If the screen is not displayed, press any key and wait for 1 minute. The screen should be aroused.

8. Shipping list

8.1 basic configuration

PTZ-BOX CV is sent out, including the following:

- PTZ-BOX CV shell
- Pressure sensor
- Temperature sensor
- Pulse contact
- User manual
- Temperature sleeve welding head and temperature sleeve. (If the meter comes with a temperature sleeve, there is no this item.)

8.2 optional accessory

- Communication module, security fence.
- Infrared configuration line (2.5 m)

9. Order

If order is required, please provide.

- pressure range
- Pulse output is required or not
- If there are any other requirements, contact our sales department.

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