

YW-100GB

Explosion-proof storage digital pressure gauge



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1. Product overview

1.1 Overview

explosion-proof storage digital pressure gauge is a high-precision intelligent pressure measuring instrument developed and produced by our company in accordance with the latest national standards. The pressure gauge is mainly composed of a pressure sensor and a signal processing circuit. Imported pressure sensor is used, with superior performance, high precision, corrosion resistance, shock resistance, vibration resistance, low temperature drift, high stability, etc. The signal processing circuit adopts the latest ultra-low power consumption processor, signal processing chip and power supply Management chip composition. Powered by a large-capacity high-performance lithium battery, no external power supply is required. The appearance of the instrument is exquisite, small, beautiful, and easy to use and operate .

1.2 Features

- Intrinsically safe circuit and flameproof enclosure are integrated.
- Wide temperature compensation, ultra-low power consumption.
- Unit conversion and other functions are complete.
- Additional setting functions are complete, customers can set according to their own use environment and habits, and use flexibly.
- Large capacity rechargeable battery.
- Waterproof grade $\geq$ IP66, higher than the industry level.
- It can store 1 million pieces of data.
- Dual-core chip design, U disk data export faster.

2. Technical parameters

2.1 Electrical characteristics

- 1) Measuring range: see nameplate
- 2) Accuracy class: see nameplate

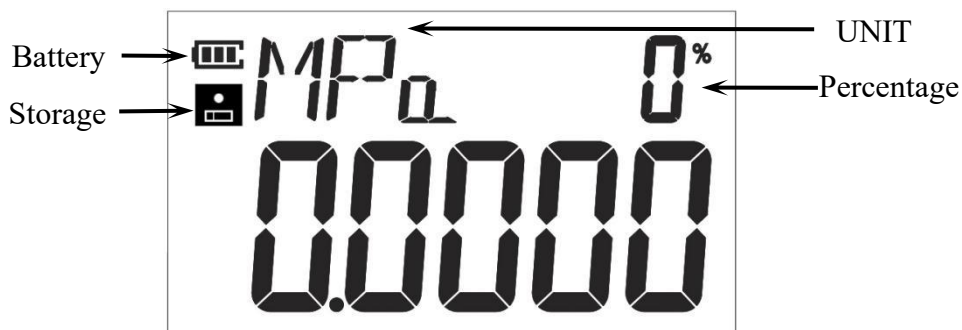
- 3) Display mode: 5-digit dynamic display and percentage display.
- 4) Pressure unit: Pa , kPa , MPa , psi , bar , mbar , mmH₂O, mmHg , inH₂O , inHg , kg • f/cm².
- 5) Overload pressure: 150 %FS
- 6) Destruction pressure: 200%FS
- 7) Power supply: 4.2V rechargeable lithium battery
- 8) Working environment:
 - Temperature: -20℃~50℃
 - Humidity: ≤85%RH
 - Calibration reference environment: 20℃±2℃
- 9) Protection class: ≥ IP66
- 10) Data storage: 1 million

2.2 Mechanical properties

- 1) Process interface: M20×1.5 (external thread), special thread interface needs to be customized
- 2) Dimensions: height 150mm , width 117mm , thickness 100mm
- 3) Weight: 600g

3. Display

3.1 Display description



3.2 Boot instructions

After power on, it will display three contents in sequence, and then enter the pressure value display interface, which are displayed in sequence as follows:

Zero point of measured pressure value; full point of measured pressure value; accuracy grade;

The precision level display format is GX.XX, such as X.XX=0.05, and the precision level is 0.05%FS.

4. Basic operation instructions

illustrate:

The  keys and  keys are key operations, and the front glass cover needs to be opened to operate.

The keys  are operated by magnetic pen without opening the front glass cover.

The key  is the right waterproof mechanical button.

4.1 Switch machine

Put the magnetic pen in the position  for about 3 seconds and the meter will turn on automatically.

Note: Magnetic pen operation does not require opening the front glass cover.

4.2 Backlight switch

Short press any key to turn on the backlight; the magnetic pen operation  key can also turn on the backlight.

Note: If the backlight auto-off function is turned on, the backlight will automatically turn off.

4.3 Unit conversion

Short press  for unit conversion.

4.4 Clear

current pressure display interface, place the pressure gauge interface in the air, and press and hold  for about 3 seconds to clear the zero point.

Note: Clearing is to clear the zero drift. If the pressure gauge displays Err during the clearing process, it means that the value has exceeded the clearable range, that is, the value is no longer zero drift. It is recommended to contact the manufacturer for handling.

4.5 Storage function

Press and hold the key  to enter the storage function. For details, see Storage Function Operation (page 16).

5. function operation description

Brief description: You can enter different function setting interfaces by entering different passwords. If the password is entered incorrectly, the meter will prompt the wrong password and return to the pressure display interface.

5.1 Password input

Press and hold  for about 3 seconds to enter the password input interface, the password is three digits, enter and confirm in sequence, the changed number will be displayed in flashing form;  it is a number cycle +,  it is a number to confirm, and long press is  to exit the interface; after entering three numbers in sequence , the meter will enter different function interfaces according to different passwords.

5.2 Additional function settings

1) Password: 100

2) Operation instructions:

After entering the password, the pressure gauge will display the parameters that need to be set (each parameter has digital identification 01, 02, etc.),  to page down to select the  item to be modified, to confirm to enter the modification, long press  to exit the setting. After exiting, the pressure gauge will restart automatically. After  confirming the selection of the item to be modified, the instrument will display the set value of the item, and then  modify the set value and select the required setting parameters .

3) Description of setting parameters (requires opening the front glass cover to operate)

01.DSP: Display rate adjustment setting

02.BLT: Backlight auto-off function setting

03.PAD: Automatic shutdown function setting

4) Display rate adjustment

Note: The setting of this item can modify the adjustment of the pressure acquisition and display speed. The faster the speed, the more power the meter consumes. When using peak

hold, it is recommended to adjust the display speed faster to obtain the most realistic peak data; when the meter is used in pipelines When the pressure is detected, the display rate will be reduced to prolong the battery life.

Description of parameter options:

FF meters acquire and display at the fastest acquisition rate

1-8 8 acquisitions per second

1-2 2 acquisitions per second

1-1 1 collection per second

2-1 2 seconds to collect 1 time

8-1 8 seconds to collect 1 time

5) Backlight auto-off function

Note: Through the setting of this item, you can choose whether the instrument will automatically turn off the backlight. If you choose Yes, after turning on the backlight, the instrument will automatically turn off the backlight for a period of time. If you choose No, you need to turn off the backlight by pressing the button.

Description of parameter options:

OFF The instrument automatically turns off the backlight function.

T--05 Automatically turn off the backlight after 5 seconds

T--10 Automatically turn off the backlight after 10 seconds

T--20 Automatically turn off the backlight after 20 seconds

T--30 Automatically turn off the backlight after 30 seconds

6) Automatic shutdown function setting

Note: Through the setting of this item, you can choose whether the meter will automatically shut down. If yes, the meter will automatically shut down after a period of time without any key operation. If you select No, the meter will not automatically shut down.

Description of parameter options:

OFF The automatic shutdown function of the meter is turned off

T--05 Automatic shutdown after 5 minutes without any operation

T--10 Automatic shutdown after 10 minutes without any operation

T--20 Automatic shutdown after 20 minutes without any operation

T--30 Automatic shutdown after 30 minutes without any operation

5.3 Unit switch

1) Password: 101

2) Operation instructions:

After entering the password, the meter will display the unit and the switch status of the unit. Press the key  to select the unit to be turned on and off, and press the key  to modify the opening and closing. Press and hold  to exit and save the modified result. After exiting, the pressure gauge will automatically restart.

3) Parameter description:

ON turns on the display of this unit

OFF turns off the display of this unit

Note: This unit switch can only set the unit that the meter can display. For example, the unit that cannot be displayed by the meter itself will be automatically shielded; after the unit display is turned off, when the unit is converted by the unit conversion button, the unit that is turned off by the unit display will be skipped.

5.4 Pressure correction

1) Password: 102

2) Operation instructions:

After entering the password, the meter will display the corrected pressure value, provide the corresponding pressure to the pressure gauge, short press the button

 to correct the pressure, after the correction, the pressure gauge will display CALL, and jump to the next correction point until all pressure points are corrected Complete, long press  to exit the correction interface, and the pressure gauge restarts.

5.5 Restore factory settings

1) Password: 555

2) Operation instructions:

Due to improper operation, the pressure gauge cannot be used normally due to clearing the zero point and pressure correction. You can enter the password to clear it. After the password is entered, the pressure gauge will clear the zero calibration and pressure correction values, and the pressure gauge will restart automatically after clearing.

5.6 Storage function operation



mechanical button on the right side of the meter

Long press the key  to enter the storage function selection, short press to select the function (circular display), after selecting, long press to confirm and enter the function, the functions are as follows:

- 1.U__P: U disk export data.
- 2.USB: USB and computer connection.
- 3.STAR: Start storage.
- 4.NUM: View data and delete it.
- E--: Exit the interface.

1) Export data from U disk

Tip: Connect the U disk to the meter with a dedicated data cable in advance

In the display 1.U__P state, long press  to export data to U disk.

After entering, initialize and prepare to import the data into the U disk. During the import process, the import percentage will be displayed. After 100% of all imported, the meter will display OK, and a tone will prompt completion. Pull out the U disk, and the meter will automatically exit the interface and enter the normal pressure display. .

2) USB and computer connection

Tip: Connect the computer and the meter with a USB cable and a special data cable in advance.

Display 2. Press and hold  in the USB state to initialize and connect to the computer.

After the successful connection, the meter will display OK, and the computer software connection indicator will turn from red to green. At this time, the software can be used to set and read parameters. After the operation is completed, long press the  button to disconnect the USB connection.

3) start data storage

Press and hold  when the 3. STAR status is displayed, the meter will automatically exit the interface and enter the pressure measurement interface, and start recording data, and the storage logo will be displayed in the upper left corner of the display screen.

4) Data view

In the display state of 4. NUM, long press the button  to display the total amount of current stored data, short press to exit and return, long press will delete the data, after long press the pressure gauge will display -Y-, if it is determined to delete , continue to long press the button to delete the data , if the data is not deleted, short press the button to return to the quantity display.

5) Exit the interface

In the display --E-- state, long press the key  to exit the interface and display the pressure value normally.

6) Cancel storage

Enter any function interface, the pressure gauge will automatically stop data storage, if cancel the storage, you can enter the function interface and then exit.

6. Error message

6.1 Out of range prompt

If the pressure value exceeds the range by 120%FS, the percentage indicator bar of the pressure gauge will flash.

6.2 Low battery prompt

If the battery power is too low, the pressure gauge will display BAT-L, and it will automatically shut down after 2 seconds, and the battery needs to be replaced to continue using.

6.3 Zero point clear over-range prompt

When pressing and holding the key  to clear the zero point, if it exceeds the clearable zero point range, the meter will report an error and display ERR.01

6.4 Incorrect password input prompt

In the password input interface, if the password is entered incorrectly, the meter will display ERR.02

7. Description of common problems

7.1 Error calculation

The pressure gauge range is $PL \sim PH$, and the accuracy is X level, then the error = $X \cdot (PH-PL)/100$

The error is the maximum allowable error of the pressure gauge, and each pressure point is consistent.

E. g:

The pressure gauge range is $(-100 \sim 100)$ kPa 0.5 pressure gauge

$$\text{Error} = (100 - (-100)) \times 0.5\% = 1 \text{ kPa}$$

7.2 Questions about pressure units and decimals

Since the pressure gauge has only five digits, and the pressure gauge error is the full-scale error, the display

The decimal and number of digits shown are determined by the full scale, for example:

1) For a pressure gauge of 60MPa, five digits are displayed, then the full scale display under MPa is 60.000, which is

3 decimal places. Converted to psi, it is 8702.2, which is 4 decimal places. No matter what the pressure is (including 0), the instrument is in MPa Always display with 3 decimal places under psi and always display with 1 decimal place under psi.

2) For a pressure gauge of 250MPa, the conversion to kPa is 250000, which exceeds the 5-digit display. Therefore, the unit of kPa is automatically shielded when the unit of the pressure gauge is converted and cannot be converted.

3) The reason why the pressure gauge does not display the decimal point conversion is because the accuracy of the pressure gauge is the full-scale accuracy, and the error at any point is the error, so the moving display of the decimal point is meaningless.

8. charging function

Charging function: the red light of the charger is on, indicating that it is charging; the green light of the charger is on, indicating that it is fully charged.