

Digital Pressure Gauge

Operation Manual



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Product introduction

The digital pressure gauge is simple in shape, practical in function, high in accuracy, with temperature measurement function. It is mainly used to check the general pressure gauge, precision pressure gauges, sphygmomanometers or other pressure instruments. It can also be widely used for precise pressure measurement of pressure.

1 Performance Index

- ◆ Pressure measuring range: -100kpa ~ 60MPa; accuracy: level 0.02, level 0.05, level 0.1, level 0.2.
- ◆ Pressure unit: there are 12 kinds of pressure units including kPa, psi, inHg, inH₂O, mmHg, mmH₂O, MPa, bar, mbar, atm, kg/cm² and Pa.
Too small or too large a pressure unit may result in abnormal data display.
- ◆ Pressure overload: When the pressure measurement value exceeds 110%FS, overpressure is displayed and an alarm is given.
- ◆ Temperature measurement: (0~50) °C; resolution 0.1°C; accuracy: ±0.5°C.
- ◆ Operating environment:
 - a. Ambient temperature :(-5~50)°C;
 - b. Relative humidity: <95% (no condensation);
 - c. Atmospheric pressure :(86 ~ 106) kPa.
- ◆ Storage temperature :(-30 ~ 80) °C.

- ◆ Display: 2.8-inch color screen, 5-digit display, Chinese and English can be switched.
- ◆ Power supply: built-in 3.7v lithium battery power supply, with 5V power adapter.
- ◆ Auto power-off function: turn off the auto power-off function and set the auto power-off time in the system information.
- ◆ Communication serial port configuration: baud rate: 9600; check bit: none; data bit: 8; stop bit: 1;
- ◆ Dimension: header Φ 115 mm x 45 mm; total length: 185 mm.
- ◆ Weight: about 0.5kg.
- ◆ Pressure connection: M20×1.5 (can be customized according to user needs).

2 Instructions for use

- The installation shall be carried out in accordance with the relevant provisions of GB3836.15-2000 "Electrical equipment used in explosive gas environment -- part 15: electrical installation in dangerous places (excluding coal mines)".
- Pay attention to the battery indicator icon on the upper right of the screen. When the battery indicator icon shows only one grid, please connect the power adapter to charge in time. Charging should be done under the condition of good ventilation and no gas leakage, and use the manufacturer's original power adapter.
- Connecting RS232 communication cable in explosive gas environment is prohibited.

- Do not replace the components or structures without permission, so as not to affect the explosion-proof performance.
- Avoid long-term overpressure, so as not to damage the pressure sensor.
- To avoid damaging the mechanical parts of the pressure calibrator, do not apply torque between the housing and the pressure connection.

3 About the keys

“**LIGHT**” Backlight key: short press the key to quickly adjust the backlight brightness; long press the key to turn on/off the pressure calibrator;

“**MODE**” Mode key: short press the key to switch the display modules; short press the key in the options section of the “menu” interface to switch the value of options.

“**↑**” Up key: short press the key in the “menu” interface to move the cursor up;

“**↓**” Down key: short press the key in the "pressure measurement" interface to quickly switch units; short press the key in the “menu” interface to move the cursor up;

“**ESC**” backspace key: long press the key in the "pressure measurement" interface to quickly enter the pressure zero calibration interface; short press the key in the “menu” interface to

return to the previous interface;

“**ENTER**” enter key: Long press this key in the routine measurement interface to enter the "menu" interface; short press the key in the “menu” interface to confirm.

4 Basic Function Instructions

4.1 Turning on/off

Turn on the main power switch on the back of the pressure calibrator, and long press the “LIGHT” key for 3 seconds to start the instrument. In the start-up state, long press the “LIGHT” key for 3 seconds to turn it off. Buzzing occurs when you turn it on or off.

4.2 Pressure Measurement

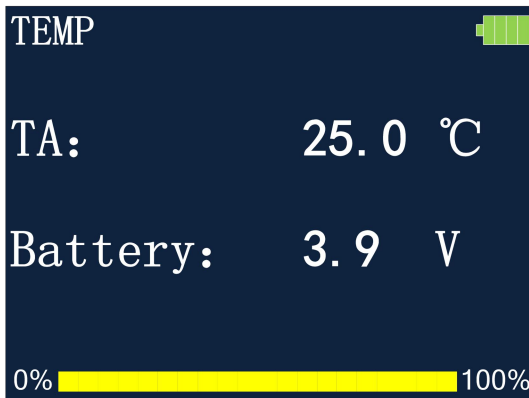
After starting up, it enters the routine measurement interface, as shown in the figure, the contents displayed on the screen are:

- **Interface identification:** "Pressure"
- Battery icon
- Pressure measurement value
- Numerical unit of pressure
- AVG/MIN/MAX value of pressure measurement
- The percentage bar of the current measured pressure relative to the full range.



Pressure measurement interface

Press “**MODE**” button to enter the "TEMP "




Interface Diagram for Temperature Measurement

4.3 Pressure Zero Calibration

If the current pressure measurement value is within the range of (-10% ~ 10%), long press “**ESC**” to reset the measured value.

4.4 Switching pressure unit


Press “” to switch the pressure unit in the following order: kPa、psi、inHg、inH₂O、mmHg、mmH₂O、MPa、bar、mbar、atm、kg/cm²、Pa. You can also long press "ENTER" to enter "menu \ routine measurement \ pressure unit selection" and select the corresponding unit directly. The pressure unit will be automatically saved when you turn off the instrument, and the unit displayed next time will be the unit set in the last shutdown.

Note: if the length of the full range of currently selected unit exceeds the number of display bits on the screen, data such as 99999 may appear.

Conversion between units is shown in the following table:

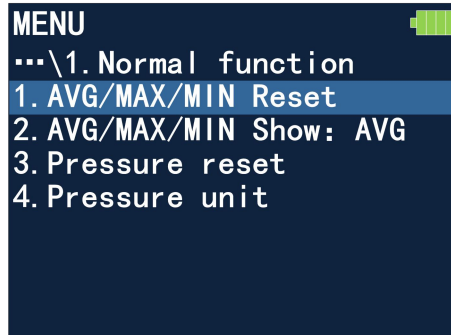
1	kPa	1	7	MPa	0.001
2	psi	0.1450377	8	bar	0.01
3	inHg	0.2953	9	mbar	10
4	inH ₂ O	4.01463	10	atm	0.0098692
5	mmHg	7.50061	11	kg/cm ²	0.010197
6	mmH ₂ O	102.047	12	Pa	1000

4.5 The instrument is in backlight

Press “” to adjust the backlight brightness, there are 3 levels of backlight brightness to choose from.

5 Menu instructions

5.1 Routine measurement menu



The routine measurement menu is shown in the figure above.

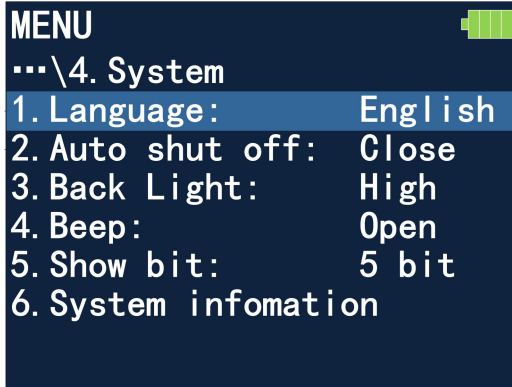
AVG/MAX/MIN record reset: used to reset the AVG/MAX/MIN recorded value on the main measurement interface.

AVG/MAX/MIN display: used to select which statistic data to display on the main measurement interface. After that, press the “**MODE**” key to switch.

Pressure zero calibration: used to zero check the pressure gauge when the sensor is empty

Pressure unit selection: used to directly select the pressure unit you want to display.

5.2 System setup menu



System setup menu is shown in the figure above.

Language: used to select the display language of the interface as Chinese or English.

Auto power-off: used to select the auto power-off time with no keystroke operation. You can select "off, 5 minutes, 15 minutes, 30 minutes, 60 minutes".

Brightness control: used to control the backlight brightness of the screen, and there are three levels to choose from.

Buzzer: used to select whether the buzzer will beep when the key is pressed.

Display bits: used to select the maximum data bits that can be displayed on the main measurement interface, and 5-bit data can be displayed.

System information: used to check the model, range, grade of precision, serial number, version number and other information of the machine.

6 How to charge and replace the batteries

When the battery indicator icon of the instrument shows only 1 grid, please charge in time. Not charging in time will lead to auto power-off of the instrument, which will greatly affect the service life of the battery.

The instrument is powered by a built-in 3.7v lithium battery and charged by a 5V/1A charger. Please contact the manufacturer or distributor for battery replacement.

7 Fault analysis and troubleshooting

1) If the applied pressure exceeds 10% of the range, an overpressure alarm will be given. At this moment, the pressure should be immediately reduced to avoid damage to the pressure sensor.

2) If the battery life has been reduced after long use, please contact the manufacturer.

3) If the attempt to long press “**LIGHT**” to start the instrument fails, please check whether the main power switch on the back of the pressure gauge is on or connect the power adapter to eliminate battery problems.

8 Configuration List

No.	Item	Quantity
1	Digital Pressure Gauge Host	1
2	Certificate and warranty card	1
3	Product manual	1
4	5V/1A power adapter	1

