BENETECH®

Model: GT5101

Low pressure chamber

High pressure chamber

Pressure Manometer

BENETECH® GT5101
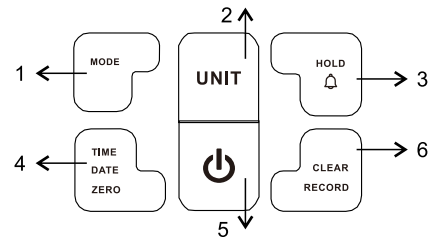
A. Button description and function operation

1）Measurement mode switch: short press button 1, Differential pressure(DIFFERENTIAL PRESSURE) -Maximum(MAX)-Minimum(MIN) -Average value(AVG)-exit, exits from long press button 1.
2) Pressure unit switch: short press button 2, bar-mbar-Kpa-Kgf/cm2-mmHg-cmH2O-Ozf/ in2-Psi-inhg-inh2-inH2O - ftH2O-HPa-Pa, long press button 2 to directly switch to Kpa.
3) Air pressure data hold/not hold: short press button 3.
4) Buzzer alarm on/off: long press button 3.
5) Time-date switch: short press button 4.
6) Air pressure zero calibration: long press button 4.
7) Boot: short press button 5.
8) Power off: long press button 5.
9) Automatic shutdown function:
On: Automatic shutdown time setting: APP-> Settings -> Fill in automatic shutdown time ->

Check automatic shutdown box -> Click the upload button icon in this area.
Shutdown (this time): If the automatic shutdown function has been started through the APP, press button 5 and "uoff" will be displayed, indicating that the automatic shutdown function has been temporarily canceled. The automatic shutdown function will still be opened when the machine is restarted next time.
Turn off (permanent):APP- > Settings -> Uncheck the box after Auto Shutdown -> Click the Upload button icon in this area.
10) Record data (air pressure value, air pressure unit, time and date) function: Turn on: short press button 6 or APP-> Settings -> Fill in the storage interval (1s~9999s)-> Open the storage switch -> Click the upload button icon in this area;
Turn off: If the air pressure data recording function has been enabled, press button 6, or APP-> Settings -> Close Storage switch -> Click the upload button icon in this area;
Clear memory (delete all recorded data, release memory space): long press button 6 or APP-> Click the Delete memory icon;
Storage space view: APP-> Setting -> The number of stored pens, the maximum number of stored pens: 15996;
Record data view: APP-> Click the download button icon, then the instrument will display the "SEnd" character; Note: If more data is

recorded, the time to export data will be slower. Please see the progress bar displayed in the lower right corner of the APP when exporting. Record data export: APP-> Click the Output xls button icon.
11)Air pressure data image real-time monitoring function:
monitoring interval setting: APP->Setting-> Fill in the measurement interval (unit: second);
Open: Click the Start button icon;
Pause: Click the stop button icon;
Clear monitoring data: Click the clear button icon;
Export monitoring data: Click the Output xls icon.
12)APP operation instructions:
APP- >Help (H)- >Help (H); Click to open the help document.
13)Buzzer alarm function:
On: long press button 3 On or APP->Setting ->Set high alarm value->Select all the values after all including plus and minus signs->; DELETE on the computer keyboard-> Re-enter the alarm value, such as + 2(unit: Kpa)->Set low alarm value ->Select all the value after including the plus and minus sign->DELETE on the computer keyboard-> Re-input the alarm value, such as -3(unit: Kpa) ->Open the alarm switch->Click the upload button icon in this area;
Off: APP->Setting->Turn off alarm switch -> Click the upload button icon in this area or long

press button 3 to close.
Note: For manometers with different ranges, the size range of high alarm value and low alarm value can be set is different.

B. Battery description

The instrument adopts lithium battery;
Charging method: power adapter or computer USB;
Charging time (10% to 100%): about 1.5H;
Working time (100% power to automatic shutdown): about 13H;
Standby time (100% power to normal startup): when the voltage is lower than 2.9V for about 8 months, the instrument will automatically shut down;
This instrument has the function of preventing lithium battery from overcharging and overdischarging

C. Specification parameters

Standby current	3.5uA
Working current	90mA(Turn off the buzzer when the lithium battery voltage is 4.2V)
Power	400mW(Turn off the buzzer alarm)
Temperature compensation range	−5 ~ 50℃
OverloaOverload pressured	X 3 FS

| Accuracy (total error)	±1%FS(Differential pressure gauge with range of greater than or equal to ±1Kpa range) ±2%FS(Differential pressure gauge with range of less than ±1Kpa)
Operating temperature range	−10 ~ 60℃

The company's existing pressure products range:
differential pressure type ±125pa - ±100Kpa Please consult customer service staff for purchase;
For products with different ranges, the accuracy (total error) is not the same;
This series of pressure sensors is suitable for non-corrosive, non-ionic gas bodies (such as air and other dry gases).

D. Annotations

1) Accuracy: Relatively applicable to the maximum output deviation of the best fitting straight line (BFSL) measured in the pressure range of 25℃. Including all errors caused by pressure nonlinearity, pressure lag, and non-repeatability;

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2)Overload pressure:The maximum pressure that can be safely applied to the product, so that the product specification remains unchanged when the pressure returns to the working pressure range. Excessive pressure may cause permanent damage to the product;
3)Burst pressure: The maximum pressure that can be applied to any pressure port of the product without causing the pressure medium to disengage. The product will not work properly after being subjected to any pressure exceeding the burst pressure.
FS: full scale, e.g. differential pressure ±10Kpa range, FS=±10Kpa;
4)Compensation temperature range: The temperature range in which the sensor can produce output proportional to pressure under specific performance limits.

E. LCD interface display
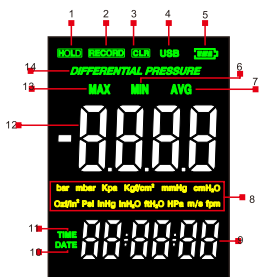
1. Data lock
2. Record data (using the instrument's own memory)

3. Clear recorded data (releasing the instrument's memory)
4.USB connection status
5. Battery power display/and charging function display
6. Calculate the minimum value
7. Calculate the average value
8. Pressure conversion unit：
bar：bar；mbar：millibar；Kpa：kilopascal；
Kgf/cm²：kilogram-force per square centimetre ；mmHg：millimeter of mercury；
cmH₂O：centimeter water column；
Ozf/in：Ounces of force per square inch ；Psl：poundal-force per square inch；
inH₂O：inch of water；ftH₂O：foot of water；
HPA:hectopascal
；m/s：metre per second；fpm：feet per minute
9. Time and date display area
10. Real-time date
11. Real time
12. Pressure value display area
13. Calculate the maximum value
14.Calculate the difference:
difference = real-time value - reference value (use the value when operating the button to start the difference function as a reference)

F. Abnormal Situations and Solutions

1)Clock failure: If "Err" is displayed in the LCD time and date display area, it indicates that the real-time clock has not been started successfully, and users can shut down and start

it again. If it still cannot be started successfully, it indicates that the firmware is damaged.
2)Automatic clock synchronization: Open the APP and plug in the USB to automatically synchronize the time with your computer;
3)Clock error adjustment: The accuracy of time is greatly affected by temperature and device accuracy. After a long time of operation, there will be differences between the time of the clock and the time displayed on your mobile phone and computer. Directly connect it with the computer APP, automatic synchronization will be completed, or adjust the second frequency setting through the APP to reduce the error. The larger the setting value is, the more the clock will slow down. Operation method: APP-> Setting->Fill in the adjustment second frequency (value range: 0-31)->Click the upload icon;
4)Directly plug in the power adapter or computer USB after shutdown to automatically start up and automatically charge the instrument, and LCD "USB" icon will be flashing. If the battery is fully charged, the battery icon stands still, indicating that it is not being charged. The battery icon beats to indicate that it is being charged. Long press button 5 to screen off and turn off the instrument. At this time, the battery can still be charged, but other functions will stop. If you need the instrument to work for a long time, directly plug in the power adapter;

5)LCD display "bAt" means that the battery will automatically shut down when the battery is low;
6) The pressure dynamic value exceeds the alarm value, showing Hi/Lo, beyond the range of display oL(the range can not be exceeded for a long time, otherwise it is easy to damage the gas pressure sensor).

G. Notes before use

1) Due to the large range of pneumatic dynamic state, the differential pressure gauge with a range of ±40Kpa~±100Kpa will have zero drift of 20~50pa. The error caused by zero drift is small compared with the total error and can be ignored. Users can long press button 4 to return to zero;
2) The users can only connect the high pressure chamber air pipe head or the low pressure chamber air pipe head. The air pipe head that is not connected is equivalent to zero air pressure. The high pressure chamber air pipe head and the low pressure chamber air pipe head can also be connected at the same time. Different situations have different air pipe connection methods; The value displayed by the instrument LCD=the pressure value of the high pressure chamber-the pressure value of the low pressure chamber. The plus or minus of the LCD display value only reflect the comparison between the pressure value of the air pipe head of the high pressure chamber and that of the low pressure chamber. In other words, it only

shows which air head pressure is greater;
3) The instrument should be kept in dry natural room temperature environment as far as possible. Remember to keep it far away from high temperature, and not to use it to measure liquid pressure and corrosive gas.

★ The "APP" in this manual refers to the program developed by the company, which is installed on the computer side and used to communicate with the instrument. It is not the APP used in the mobile phone. It is just an abbreviation and the users should download the "APP"on the company's official website.
★ This instrument belongs to the micro small range differential pressure gauge, and the pressure range is dozens of Kpa. Do not directly used it for Mpa magnitude. Please carefully assess whether the air pressure you use meets the range of the differential pressure gauge you bought. If not, do not use it. Do not use it for a long time under large pressure overload, so as to avoid damage to the sensor. If the sensor is damaged, the company will not replace it free of charge.

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