fande®

DR-S281 DIGITAL PRESSURE GAUGE

—— MANUAL

1. NOTICE

1.After receiving the product, please check whether the packaging and appearance are intact, and check whether the product model and specifications match the product you purchased.
2.Install and wire the product correctly and reliably according to the process connection, electrical connection and installation method provided by the product.
3.During use, please pay attention to the product's technical specifications and usage conditions, such as allowed medium and temperature, overload pressure, power supply voltage, etc.
4.The digital pressure gauge is a precision device. Users should not disassemble it by themselves when using it, and do not touch the diaphragm with hard objects to avoid damage to the product.
5.During the installation process, pay attention to protecting the product and do not install or disassemble it forcefully, otherwise it will easily damage the product, especially the installation thread.
6.Please use a suitable wrench when installing or disassembling. Do not forcibly twist the shell by hand to tighten or disassemble, otherwise the damage caused will not be covered by the warranty.
7.After installation and power-on test, it usually takes several minutes for the product to have stable output and normal operation. This is a normal phenomenon.
8. After power-on test after installation, if abnormal phenomena occur, please contact our company's after-sales technicians unless you have the product adjustment equipment and skills.
9. It may be affected by installation stress during the installation process. After the installation is completed, if the reading is not at zero, please clear it before use.
(!) Product damage caused by unprofessional operation that does not follow operating specifications is not covered by the warranty.

2. WARNING

1.When the ambient temperature is above 60”C, please use a forced fan or cooler for cooling.
2.The installation, debugging and maintenance of this product should be carried out by qualified engineering and technical personnel.
3.The product shell should be reliably grounded to help resist electromagnetic interference and ensure electrical safety.
4.If the fault or abnormality of this product may cause a major accident in the system, please set up an appropriate external protection circuit to prevent accidents.
5.The company is not responsible for any direct or indirect losses other than the product itself.
6.The company reserves the right to change product instructions without notice.

3. DESCRIPTION

This digital pressure gauge is with a built-in high-precision pressure sensor, which can accurately display pressure in real time, and has the characteristics of high precision and good long-term stability.

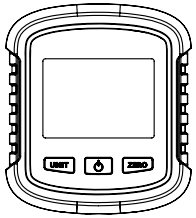
This digital pressure gauge is equipped with a large-size LCD liquid crystal display, which has multiple functions such as zero reset, backlight, power on and off, unit switching, low voltage alarm, etc. It is easy to operate and install. The dial orientation can be rotated 330°, which is convenient for customers to read from the desired angle. The equipment product adopts the whole casing to be covered with rubber, which has good shock resistance and can measure gas, liquid, oil and other media that are not corrosive to stainless steel. This series of products supports Bluetooth applets and APP configuration parameters, including: pressure value display, acquisition rate modification, reset operation and other settings. The product comes with an open source Bluetooth protocol analysis file, which is convenient for customers to carry out secondary development.

This digital pressure gauge is suitable for portable pressure measurement, equipment matching, calibration equipment and other pressure measurement fields.

4. SPECIFICATION

Range: -0.1~0~0.1...1...60MPa
Overload pressure: 120% (≥10MPa); 150% (<10MPa)
Backlight color: white backlight
Appearance size: 143.5*75*40.5mm
Accuracy: 0.5%FS, 0.2%FS
Long-term stability: better than ±0.3%FS/year
Working temperature: -20～65℃
Electrical protection: anti-electromagnetic interference design
Measuring medium: stainless steel such as oil, water, gas, etc. Non-corrosive medium
Connection: M20*1.5, G1/4 or customized
Connector material: 304 SS
Shell material: TPE+ABS
Product features: Power on/off Backlight Reset Unit switching Bluetooth connection
Power supply voltage: 3V (2 AA batteries)
Power display: four-segment display
Dial: 330-degree rotatable dial
Pressure unit: MPa, bar, kgf, mH2O, PSI, kPa, mmHg, mBAR, mmH2O, Pa, inWC
Protection class: IP54

5. BUTTON



5.1. Key description:

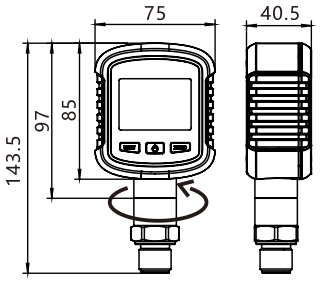
KEY	FUNCTION	DESCRIPTION
⏻	On/off	Long press for 3 seconds to power off. Long press for 1 second to power on
UNIT	Unit switch	Short press to switch pressure units
ZERO	Zero clear	Long press for 3 seconds to calibrate the zero position

5.2. Lcd screen:

Symbol	Means
kPa PSI kgf/cm² bar MPa etc.	Unit
MAX MIN	Pressure max/min
	Battery power
	Bluetooth connection status
0% 100%	Pressure percentage

6. DIMENSION

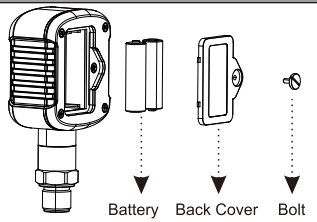
UNIT: mm



Dial orientation can be rotated 330°

Note:
1. The pressure gauge must be tightened with a wrench during installation, and the dial can only be rotated after the installation is completed.
2. The use of dial rotation also has a certain rotation range. Rotate to the maximum, do not continue to rotate, so as not to cause equipment failure.

7. REPLACEMENT BATTERY



1. Use a flat-blade screwdriver to unscrew the metal bolt.
2. Remove the plastic battery back cover under the metal bolts.
3. Install 2 standard size AA batteries.
4. Reinstall the plastic battery back cover.
5. Use the flat-blade screwdriver again to secure the metal bolt.

8. FUNCTION DESCRIPTION

1. Power on/off
1.Long press the ⏻ power button for 1 second to power on, long press the ⏻ power button for 3 seconds to power off.
2. Unit switching
Short press the "UNIT" unit switching key to cycle through the units. (Different ranges can display different units)
3. Clear function
In the case of no pressure, press and hold the "ZERO" button for 3 seconds to clear the zero error and MAX or MIN record data.
4. Extreme function
Short press the "ZERO" key to switch between MAX/MIN values. When displaying MAX or MIN values.
5.Recording function
5.1 Short press ⏻ to enter the scheduled data recording mode. The screen displays “rt-n" to record data in minutes, and the screen displays “rt-s" to record data in seconds.
5.2 When “rt-n" and “rt-s" are displayed, short press <**ZERO**> to set the recording interval. Short press <**ZERO**> once to increase 1 minute or 1 second. The maximum recording interval can be set to 60 minutes and 60 seconds.

for example, the screen displays the first line “rt-s" and the second line “5". The surface device records pressure data according to a 5-second time period.
5.3 When “rt-n" and “rt-s" are displayed, short press <**UNIT**> to set the record and “LON6" is displayed.
5.4 In the“LON6" interface, short press <**UNIT**> to start recording, short press <**ZERO**> to view the total recording time (unit: minutes)

9. SYSTEM FUNCTION

Press and hold the "UNIT" button for 3 seconds, the secondary screen will display LOC, the main screen will display 0000, enter the password 1111 to enter the basic function parameter setting. (At this time, the "unit" button is for confirmation," ⏻ " To increase the number, short press the zero key to decrease the number, long press the zero key to move)

1. Modification of sensor sampling interval

The secondary screen displays SATE, the main screen displays the set value, short press the " ⏻ "or "zero" button to modify, long press the "zero" button to shift, the setting range is 0.3~10S.
Function description: The larger the sampling interval data, the greater the amount of data collected at the same time will increase or decrease. The smaller the sampling interval data is, the larger the amount of data is at the same time.

2. Display error correction coefficient modification

The secondary screen displays E-00, and the main screen displays the correction coefficient. Short press the " ⏻ " or "zero" key to modify the coefficient, and long press the zero key to shift, 0.500-1.500 cycles can be set. Function description: The larger the error correction coefficient is, the larger the value displayed on the screen will be. The smaller the error correction factor, the smaller the value displayed on the screen.

3. Modification of filter coefficients

The secondary screen displays FILt, and the main screen displays the set value. Short press "⏻" or the zero key to modify the coefficient, and long press the zero key to shift. The setting range is 1-20.
Function description: The larger the filter coefficient is, the longer it takes for the pressure value displayed on the screen to stabilize. The smaller the filter coefficient, the more stable the pressure data displayed on the screen.

10. CODE DESCRIPTION

SN	SYMBOL	MEANS
1	E-E	Abnormal sensor communication or sensor damage
2	E-H	The current pressure exceeds the range or the sensor is damaged
3	SATE	Sensor sampling interval setting
4	E-00	Display error correction factor settings
5	FILt	Filter constant setting
6	MAX	Maximum value identification
7	MIN	Min value identification

11. PROBLEM & SOLUTION

NO.	PROBLEM	REASON	SOLUTION
1	Back-light Dark	Battery power shortage	New Battery
2	Battery Flicker	Battery power shortage	New Battery
3	Pressure Unchanged	1.Pressure block 2. Zero clearing with pressure 3.Sensor Damage	1. Check pressure hole 2. Without pressure, zero clearing 3. Back to Factory
4	E--H	1. Pressure Overload 2. Sensor Damage	1. Notice pressure 2. Back to Factory
5	Figure Change Slowly	Adjust of filter constant	Refer to 9.3
6	Figure Change Quickly	Adjust of filter constant	Refer to 9.3
7	Frequent Pressure Shock	1. Damage Sensor 2. Leakage	Add Buffer Tube
8	High Temperature	1. Damage Gauge 2. Pressure Error	Add Radiator Tube

12. BLUETOOTH COMMUNICATION

This product can debug the device through the APP client. Theset parameters include: data collection frequency, currentpressure data, clearing function, etc.

1.Use the mobile phone system to "scan" or the browser's "scan" to scan the QR code below and use the APP installation package to install it.

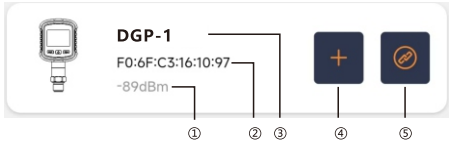
SECA

ios / Android

Both of the above methods can search for device and connect it. Note:
To ensure that the mobile phone is connected to the device normally, please keep the mobile phone's cellular data, positioning and Bluetooth functions turned on at all times.

2.After the installation of "SECA" is completed, the equipment can be debugged through the following operations:

3.1 Main interface composition



①: Bluetooth communication signal condition, the larger the value, the worse the signal.
②:Device MAC address.
③:Device model name.
④:Join multi-device group connection mode.
⑤:Enable single device connection mode.

3.2 Sub-interface composition

Note: 1) The version number of the software function can be viewed in the secondary interface.
2) Users can switch the app language in the language function menu.
(You need to restart the APP after selecting)

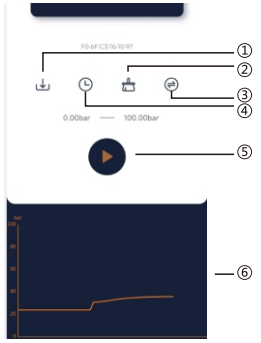
3.3 Multi-device connection group mode

①:Delete key to remove the device from the group list.
②:Turn on all devices in the group.
Note: Up to 4 different Bluetooth devices can be added to the same group.

3.4 Data observation under multi-device connection

Note:
1)You can enter this interface by opening all in 3.3.
2) In this interface, data can be observed on up to 4 Bluetooth devices at the same time through the same mobile phone. 3) Users can click the play button below to turn on/off remote data recording. Finally, the mobile phone will organize the collected data into EXCEL format.

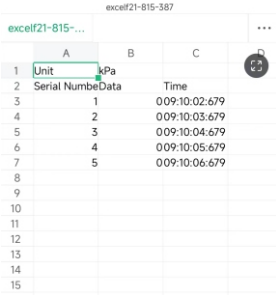
3.5 Single device connection mode



①：Read the technical data of the device history. Export or clear record data.
②：Digital pressure gauge reset operation.
③：Unit switching.
④：Device sampling rate modification.
⑤：Remote data logging on/off.
⑥：Pressure line chart.

Note:
That the storage function will automatically exit when the amount of data in the storage reaches its maximum, and user will need to manually clear the recorded data in the APP interface.

3.6 Data export mode



Note:
1) In data export mode, the exported data includes parameters such as collection time, real-time pressure status, serial number, etc.
2) The total amount of exported data is related to the collection time and sampling frequency.
3) The larger the data volume, the longer the export time. If the data exported at a time exceeds 1,000 pieces, please be sure to maintain Bluetooth communication between the digital pressure gauge and your mobile phone at all times.

13. AFTER-SALE SERVICE

The guarantee period of product begins from the data of delivery and lasts for 1year. During the guarantee period, if the product itself had quality problems, we would provide free maintenance, exchange and return service.
The content of specific quality guarantee：
1. The spare parts or components of the product are failure, but it can be operate normally after exchange. This is free to repair.
2. The spare parts or components of the product are failure, and it can’t be repaired on time. We would exchange a new, same specification of qualifited product.
3. The main functions of the product because of design or manufacture is not meet the requirement of the contract or the enterprise standard, the client need to return goods. We should recover the fault product and return the payment for the goods to the client.

***Disclaimer
During the guarantee period, the product failure caused by followed cases, it beyond the warranty:
1. The failure caused by the inappropriate use of product by user.
2. The client disassemble, repair, refit the product at own discretion