

## DR3704 Pressure Gauge with Data Recorder



DR3704 digital pressure gauge from Fandesensor now offers data-logging capability with SD card to facilitate data logging, users can transfer the stored data to a PC or laptop in CSV file format, where they will see a time and date stamp against recorded pressures. such data sets are particularly useful for trend analysis or if there is a specific system event that requires investigation. It offers the continuous monitoring of oil, gas, water and other pressure media.

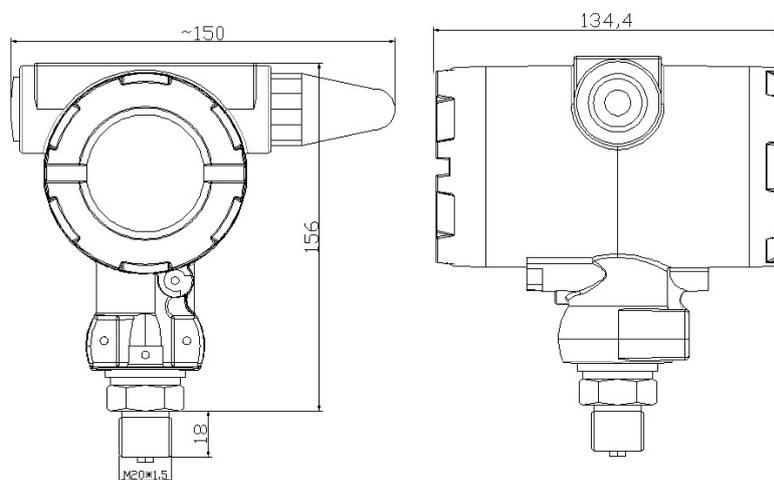
## Features:

- Direct installation type, can be installed directly at the measuring point;
- Explosion-proof: flame-proof aluminum shell, the circuit board system is intrinsically safe;
- Protection level IP66, suitable for outdoor use;
- Use SD card to store recorded data;
- Support CSV file format;
- LCD backlight display, -30~70°C clear display, over temperature display will not be damaged;
- 38AH high-energy lithium battery, battery life is 3-5 years (sending interval is 1 hour);
- Support file system, all operations are based on PC platform;
- Internal clock. High reliability file management and sd card anti-wear design;
- High-definition LCD display, UV-resistant;

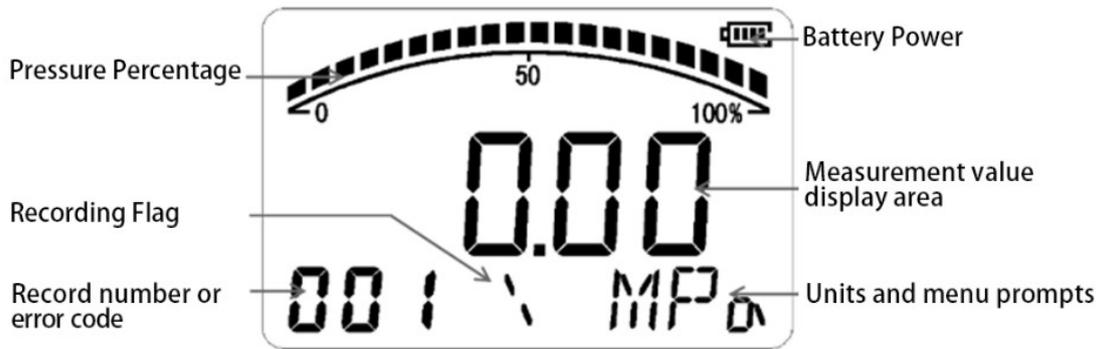
## Performance

Parameters		Parameters	
Power	3.6V Battery	Recording current	<20mA
Range	-0.1~100MPa	Standby current	<30uA
Accuracy	0.5%FS	ambient temp.	-40~70°C
Protection	IP66	Explosion-Proof	Exib IIC T4 Gb
Interface material	316SUS	Housing	Aluminum alloy
Thread	M20*1.5, NPT1/2, G1/2,	Support SD card	32G mini SD card
logging interval	1second-65535 second	Recording times	Limited by SD card

## Dimension



## Panel Description



Note:

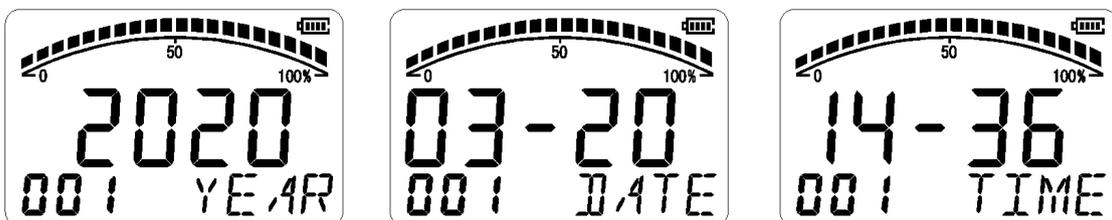
Recording flag: Indicates that the instrument is running in the recording mode, which is displayed as "\", "|", "/", "—"

Record number: This number can be set by the user, and the recorded data will be stored in the corresponding numbered folder in the SD card.

## Setting and Key Function

### Time Setting

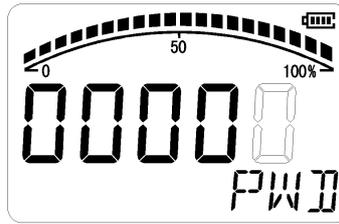
In the measurement mode, short press the ZERO key to display the year, short press the S1 key to display the date, short press the S2 key to display the time, and enter the following figures:



### Eject the SD card

- ① In the measurement mode, long press the ZERO key to enter the password input state,

and the screen displays:



Blank means flickering, that is, the cursor position, the same below

- ② Press the S1 key to move the cursor, press S2 to change the value of the cursor, enter the password 00016, press the ZERO key to confirm, enter and exit the SD card mode
- ③ The gauge displays as follows:

	<p>YES: Indicates to exit SD card, press S1 or S2 key to change the symbol, press ZERO key to exit SD card and enter measurement mode</p>
	<p>NO: Indicates not to exit SD card, press S1 or S2 key to change the symbol, press ZERO key to enter measurement mode</p>

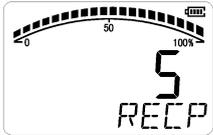
### Calibration time

- ① In the measurement mode, long press the S2 key to enter the password input state, enter the password 00026, press the ZERO key to confirm, and enter the setting mode;
- ② The meter displays as follows, press S1 or S2 to switch cyclically:

	<p>Year: press the ZERO key to enter the modification mode, press S1 or S2 to change the value, press the ZERO key in the modification mode to confirm and return to the viewing mode</p>
	<p>Date: press the ZERO key to enter the modification mode, press S1 or S2 to change the value, press the ZERO key in the modification mode to confirm and return to the viewing mode</p>
	<p>Time: press the ZERO key to enter the modification mode, press S1 or S2 to change the value, press the ZERO key in the modification mode to confirm and return to the viewing mode</p>
	<p>Press the ZERO key to confirm and return to measurement mode</p>

## Start or stop recording

- ① In the measurement mode, long press the S1 key to enter the password input state, enter the password 00026, press the ZERO key to confirm, and enter the setting mode;
- ② The gauge displays as follows, press S1 or S2 to switch cyclically:

	<p>Record number: press ZERO key to enter modification mode, press S1 to move cursor, press S2 to change the value of cursor position, press ZERO key in modification mode to confirm and return to view mode</p>
	<p>ADC acquisition interval: corresponding to the displayed refresh rate, in seconds, press the ZERO key to enter the modification mode, press S1 to move the cursor, press S2 to change the value of the cursor position, press the ZERO key in the modification mode to confirm and return to the viewing mode</p>
	<p>Data recording interval: that is, how long to record a data, in seconds, press ZERO key to enter the modification mode, press S1 to move the cursor, press S2 to change the value of the cursor position, in the modification mode, press the ZERO key to confirm and return to the viewing mode</p>
	<p>Data storage interval: that is, how often to write data to SD card, in seconds, press ZERO key to enter modification mode, press S1 to move cursor, press S2 to change the value of cursor position, press ZERO key in modification mode to confirm and return to view mode</p>
	<p>Start/Stop the recording option: YES means start recording, No means not start recording, press S2 key to change, press ZERO key to confirm, and return to measurement mode</p>
	<p>Start/Stop the recording option: YES means start recording, No means not start recording, press S2 key to change, press ZERO key to confirm, and return to measurement mode</p>

## Clear operation

- ① In the measurement mode, long press the ZERO key to enter the password input state,

enter the password 00066, press the ZERO key to confirm, and enter the reset mode (only the pressure can be reset);

② The meter displays as follows, press S1 or S2 to switch cyclically:

	<p>Indicates that it is not cleared, press the ZERO key to directly exit the clearing mode</p>
	<p>Indicates clearing, press the ZERO key to clear and exit the clearing mode</p>
	<p>Indicates reset and reset, press the ZERO key to clear the reset value and exit the reset mode</p>

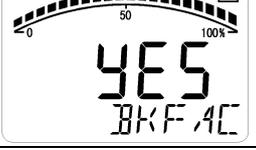
③ Press S1 key or S2 key to switch to , then add 0 value pressure, after the pressure is stable, press ZERO key to confirm, the instrument is cleared.

Note: If no button is pressed for 60 seconds, the meter will automatically exit the reset mode.

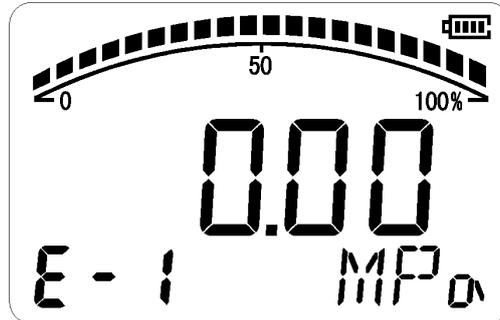
## Return to factory settings

① In the measurement mode, long press any key to enter the password input state, enter the password 06060, press the ZERO key to confirm, and enter the restore factory mode;

② The meter displays as follows, press S1 or S2 to switch cyclically:

	<p>Press the ZERO key to confirm return to factory settings and return to measurement mode</p>
	<p>Press the ZERO key to directly return to the measurement mode without returning to the factory settings</p>

## Error Code



1	No SD card is inserted
2	The SD card capacity is insufficient
3	The SD card file system is corrupted
4	The time is not calibrated
5	Reserve
6	Low battery voltage
7	Pressure ADC error
8	Temperature ADC error

## Storage file format

The storage file is in csv format, each line represents a record, and the record data format is as follows:

Timestamp, pressure value, temperature value, power, check value

Check value calculation method:

① Convert the above value into bin code, and store the data structure as

timestamp	Pressure value	temperature value	Electricity	check value
uint32_t	float	float	uint8_t	uint8_t

② The calculation domain of the check code is timestamp-electricity

③ The algorithm is as follows:

```
uint8_t XorCheck(uint8_t *data,uint8_t len)
{
    uint8_t ret = 0;
    for(uint8_t i = 0;i < len;i ++)
    {
        ret ^= *(data + i);
    }
    return ret;
}
```

## Data export

The data can be exported through the panel USB cable, or you can unplug the SD card and export it through the card reader, which is generally considered to be faster to export. You must pay attention when exporting and inserting SD cards. You must turn off the collection and recording. Otherwise, the SD card will be pulled out in the power-on state, and the data will be lost. Remember.

## File storage

This record is based on days. The file name and folder set by the user are used for data storage records, one record file per day. Record file names by time.