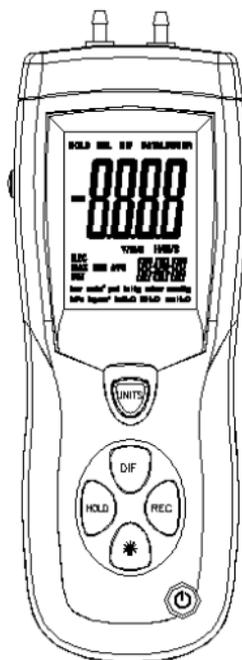# Manometer

DD890

Introduction

The device measures Gauge/Differential Pressure from -200 mbar to 200mbar (+-80.29 in H2O), it features 11 selectable units of measure: inH_2O , psi , bar , mbar, kPa , inHg , mmHg ,$ozin^2$,ftH_2O , cmH_2O, $kgcm^2$. Additional features include Data Hold. Auto Power Off disabled , and an USB for capturing reading to a PC using optional software . Careful use of this meter will provide years of reliable service.

Specifications

Function	Range	Resolution	Function	Range	Resolution
inH20	80.29	0.01	$ozin^2$	46.41	0.01
psi	2.901	0.001	ftH20	6.690	0.001
mbar *	200.0	0.01/0.1	cmH20	203.9	0.1
kPa	20.00	0.01	$kgcm^2$	0.204	0.001
inHg	5.906	0.001	bar	0.200	0.001
mmHg	150.0	0.1			

* Resolution: 0.01 mbar < 100 mbar ,0.1mbar>100mbar

Display	Dual LCD
Accuracy	±0.3%FSO (25 ^{o}C)
Repeatability	±0.2% (Max.+/ -0.5% FSO)
Linearity/Hysteresis	±0.29% FSO
Pressure Range	± 200mbar
Maximum Pressure	500mbar
Response Time	0.5 Seconds typical
Low Battery Indicator	Yes
Over range Indicator	Err.1
Under range Indicator	Err.2
Operating Conditions	0 to 50 ^{o}C
Storage Conditions	-10 to 60 ^{o}C
Power Supply	1×9V Battery or external 9VDC

CP2102 USB to UART Bridge Controller

Serial format: Baud rate: 9600 Baud , 8 Data Bits.
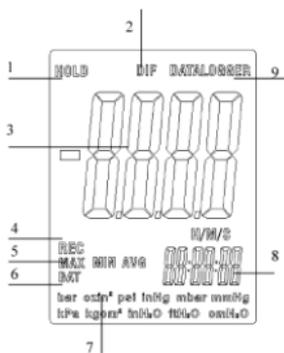
Button

The meter has six buttons**.**

1. UNITS
2. DIF
3. REC
4. HOL D
5. BACKLIGHT
6. ON/OFF

Display Description

1. Hold Function
2. Differential Mode
3. Primary Data screen
4. Record Mode
5. MAX/MIN/AVG
6. Low Battery indicator
7. Pressure Unit indicator
8. Relative Time Clock
9. Data output from USB

Operation
1.Power

Press the **ON/OFF** button to turn power on or off. The meter will perform a short self-test when turned on. The meter defaults to the setting used during the last operation.

2.Zero Adjust and Offset

Before use and without fittings attached to the meter, press the **HOLD** button for more than 2 seconds to zero the meter .The meter will reset and display **"oooo "** from right to left. **0.000** will be display.

If it is desired to offset the meter and display, press the **DIF** button while taking a measurement Subsequent reading will be the difference between the current measurement and the measurement that was on the display when the **DIF** button was pressed.

4. Data Hold

Press the **HOLD** button momentarily to freeze the displayed reading. The '**HOLD**' icon will appear on the upper left-hand side of the display. If the pressure value is over the range, error codes will show on the screen.

Press the **HOLD** button again to return to normal operation.

4.Record

The MAX/MIN mode allows the user to view only the highest (**MAX**) , lowest (**MIN**)or average (**AVG**) readings with relative time stamp.

1. Press the **REC** button once and **REC** appears on the display (All other functions are locked out except for Power & Backlight). The relative time clock also appears in the secondary display and starts counting.

2. Press the **REC** Button again and **MAX** appears on the display .The display is now showing the maximum pressure and relative time that it was recorded.

3. Press the **REC** button to display the minimum **MIN** reading with the relative time.

4. Press the **REC** button to display the average value **AVG** reading with the relative time.

5. Press the **REC** button again to continue recording MAX/MIN /**AVG** measurements.

6. To exit the **MIN/MAX/AVG** mode, press the

REC button for 3 seconds to return to normal operation.

5.Backlight Display

Press the **Backlight** button to turn on the backlight. It will remain on for 40 seconds.

6. Automatic Power Off

The meter will automatically shut off after 20 minutes to conserve battery life. To disable Auto Power Off , hold down the HOLD button and turn on the meter on , An "**n**" will appear in the display indicating that Auto Power Off mode is disabled. The meter will return to normal operation when it is turned off.

7.Units

Press the Unit button momentarily and the meter will cycle through the 11 available units of measure as indicated by the cursor on the bottom of the display.

USB

The meter has a USB port for use with the optional PC interface Data Acquisition Software./Hardware kit.

Error Codes

An error message will appear on the display if the meter fails an internal diagnostic test. And it will freeze all the buttons.

1. Err.1: Pressure value is over the range.
2. Err.2: Pressure value is below the range.
3. Err.3: DIF function , the differential pressure value is over range.
4. Err4: DIF function, the differential pressure value is below range.

Battery Replacement

When the battery power falls low ,"**BAT**" will appear on the LCD. Replace the 9V battery .