

**0140-DP05  
DIFFERENTIAL PRESSURE MANOMETER  
OPERATION MANUAL**

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### 1.Introduction

The device pressure measurement range is from -34.47kPa to 34.47kPa (-5psi~5psi), it features 11 selectable units of measure: kPa, psi, inH<sub>2</sub>O, bar, mbar, inHg, mmHg, oz/in<sup>2</sup>, ftH<sub>2</sub>O, cmH<sub>2</sub>O, kg/cm<sup>2</sup>. Additional features include Data Hold, Auto Power Off disabled and USB interface for capturing reading to a PC using the software. Careful use of this meter will provide years of reliable service.

### 2.Specifications

Unit	Range	Resolution	Unit	Range	Resolution
inH <sub>2</sub> O	-138.3~138.3	0.1	oz/in <sup>2</sup> *	-80.00~80.00	0.01
psi	-5.000~5.000	0.001	ftH <sub>2</sub> O	-11.53~11.53	0.01
mbar	-344.7~344.7	0.1	cmH <sub>2</sub> O	-351.5~351.5	0.1
kPa	-34.47~34.47	0.01	kg/cm <sup>2</sup> *	-0.351~0.351	0.001
inHg	-10.18~10.18	0.01	bar	-0.344~0.344	0.001
mmHg	-258.5~258.5	0.1	*display as ozin <sup>2</sup> and kgcm <sup>2</sup> on the screen		

<b>Display</b>	Dual LCD
<b>Measurement range</b>	-34.47kPa~34.47kPa (-5psi~5psi)
<b>Maximum pressure</b>	137.9kPa (20psi)
<b>Accuracy</b>	±0.3%FSO (25°C)
<b>Repeatability</b>	±0.2% (Max. ±0.5%FSO)
<b>Linearity/hysteresis</b>	±0.29%FSO
<b>Response time</b>	0.5s typical
<b>Low battery indicator</b>	Yes
<b>Over range indicator</b>	Err. 1
<b>Under range indicator</b>	Err. 2
<b>Operation conditions</b>	0°C to 50°C
<b>Storage conditions</b>	-10°C to 60°C
<b>Power supply</b>	1×9V battery or AC/DC adapter

Computer software (USB flash disk & USB cable)  
Serial format Baud rate: 9600 Baud, 8 Data Bits.

### 3.Button

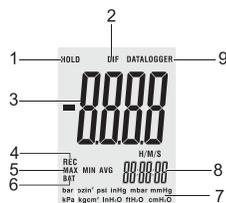
#### The Meter Has Six Buttons

- 1-UNITS
- 2-DIF
- 3-REC
- 4-HOLD
- 5-BACKLIGHT
- 6-ON/OFF



### 4.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 status



### 5.Operation

#### 5-1.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.

#### 5-2.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 "o o o o" 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.

#### 5-3.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.

#### 5-4.Record

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

- 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.
- 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.
- Press the REC button to display the minimum MIN reading with the relative time.
- Press the REC button to display the average value AVG reading with the relative time.

- Press the REC button again to continue recording MAX/MIN /AVG measurements.
- To exit the MIN/MAX/AVG mode, press the REC button for 3 seconds to return to normal operation.

#### 5-5.Backlight Display

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

#### 5-6. 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.

#### 5-7.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.

#### RS-232

The meter has a built-in RS-232 serial port for use with the PC interface Data Acquisition Software/Hardware kit via USB cable.

### 6.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.

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

### 7.Battery Replacement

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