



Datalogging Manometer

840086

Instruction Manual

SPER
SCIENTIFIC



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1. INTRODUCTION

This +/- 5 psi Manometer is ideal for measuring gauge pressure and low differential pressure in clean rooms, test and balance, medical equipment, HVAC, pneumatic systems and computer peripherals.

Features a user-friendly interface with a large backlight display, automatic logging, measurement of single and multiple points, and a tripod mount.

The included software and RS232 port enable communication with a computer.

Powered by 4 AAA batteries (included), or an optional 9V adaptor.

Gauge Pressure:

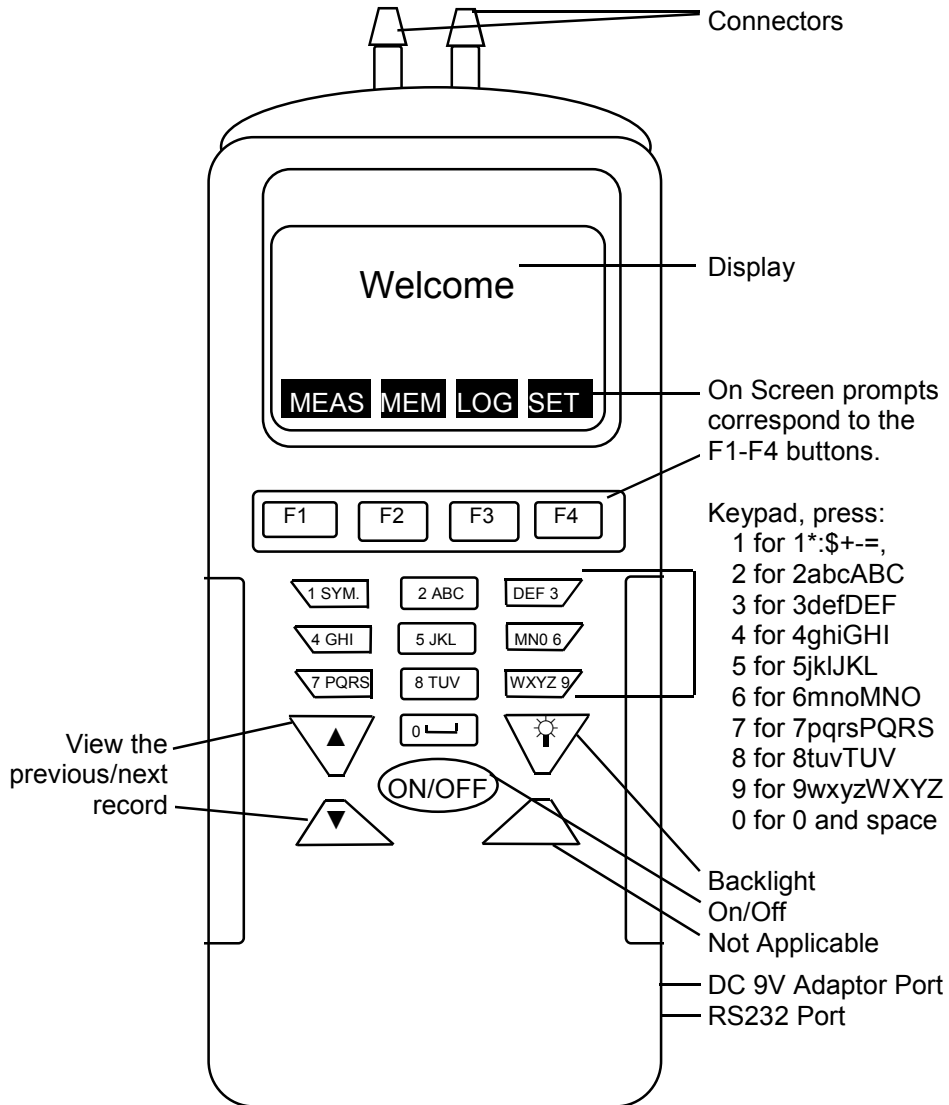
A measure of pressure in PSI that refers to ambient pressure.

Differential Pressure:

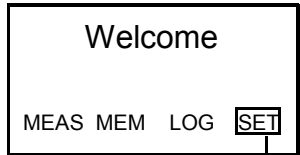
Measurement of the difference between two pressures.

CE

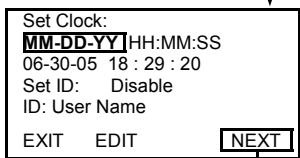
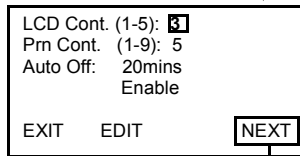
2. PANEL DESCRIPTION



3. BEFORE MEASUREMENT

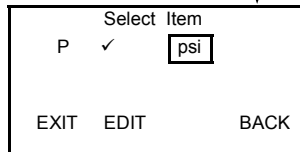


- Turn the meter on with the **ON/OFF** button.
- Press **F4** (SET) to enter the setup mode.
- Use the **F2** (Edit), **▲** or **▼** buttons to move the on-screen cursor, and the **Keypad** to make changes.
- If changes are made, press the **F4** (Enter) button to save the new settings or **F1** (Abort) to cancel the change.
- Press **F4** (Next/Back) to access the next or previous page.
- Press **F1** (Exit) to return to the Welcome menu.



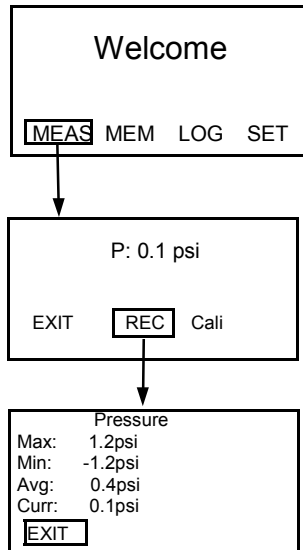
Settings:

- LCD Cont. (1-5): Display contrast, 5 = least contrast.
- Auto Off: 1~20 minutes. Enable/Disable.
- Set Clock: Select the date mode MM-DD-YY, DD-MM-YY OR YY-MM-DD, and set local time.
- Set ID: Enable/Disable datalogger.
- ID: Alpha/numeric user name.
- Select Item: Press **F2** (Edit) to select X = not selected, ✓ = selected.
- Press the **F2** (Edit), **▲** or **▼** buttons to cycle through the 11 units of measure:



PSI	inH2	kPa	ftH2	inHg	cmH2
mbar	bar	mmHg	ozin	kgcm	

4. MEASUREMENT



There are 3 measurement modes:

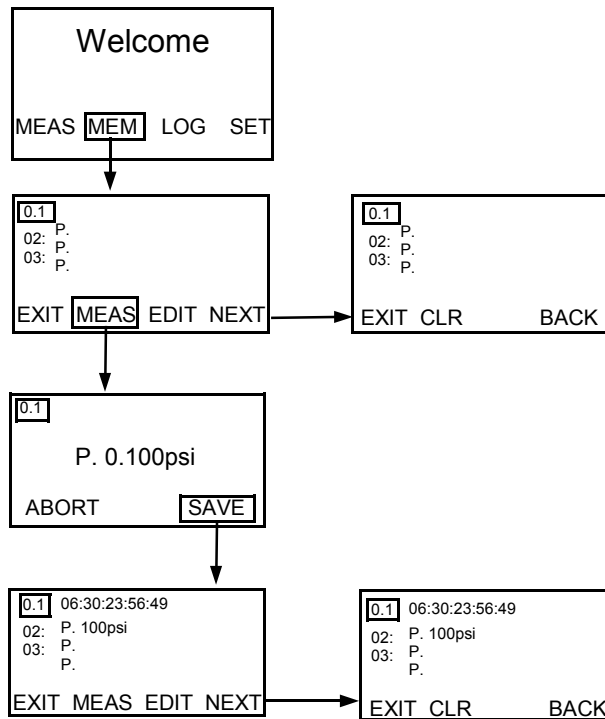
- **F1** (MEAS) Single measurement.
- **F2** (MEM) Multiple measurement.
- **F3** (LOG) Auto logging.

4-a. Normal (Single) Measurement

- Be sure to check that the tubing is not leaking or damaged before use.
- Press **F1** (MEAS) to take a single measurement.
- The reading is displayed.
- If desired, press **F2** (REC) to save the reading to memory and display the Max, Min, AVG, and Current recorded information.
- Press **F1** (EXIT) to return to the Welcome menu.

4-b. Multiple Measurement

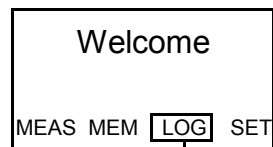
Manually record up to 99 data points with real time and editable file name.



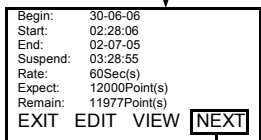
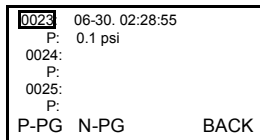
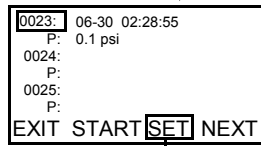
- Press **F2** (Mem) to enter this function.
- Press **F2** (Meas) to take a measurement.
- The measurement is displayed.
- To exit this function without saving data, press **F1** (Abort).
- If desired, press **F3** (Edit) to edit the file name of a recorded data point. Then, use the **Keypad** to edit the file name. Cycle through the characters by depressing the key until the desired character is highlighted.
- To save the data, press **F4** (Save).
- Press **F4** (Next/Back) to access the next or previous page.
- To delete a single record, use the **▲** or **▼** buttons to move the on-screen cursor. Then, press and release **F2** (Clr) to delete the selected record. To delete all records, press **F2** (Clr) for at least 2 seconds.
- Press **F1** (EXIT) to return to the Welcome menu.

4-c. Auto Logging

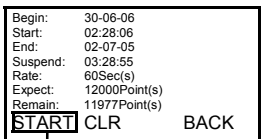
This function automatically records (logs) measurements based on user-defined parameters.



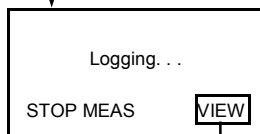
- Press **F3** (Log) to enter this function.
- Press **F3** (Set) to set the user-defined parameters.
- Use **F2** (Edit), **F4** (Enter), and the ▲ or ▼ buttons to edit the parameters for the "Begin" date, "Start" time, "End" date, "Suspend" time, "End" date, and "Suspend" time. For 24 hour logging, set the Start time to 00:00:00 and the Suspend time to 23:59:59.



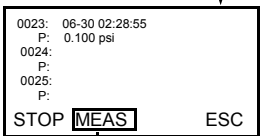
- Note: The date mode, MM-DD-YY, DD-MM-YY or YY-MM-DD, defaults to the initial settings (see BEFORE MEASUREMENT on page 5).
- Set the sampling "Rate" from 1 to 7200 seconds.
- "Expect" is the total number of memory points (12,000).
- "Remain" shows the number of available data points (12,000 minus the number of already recorded data points).



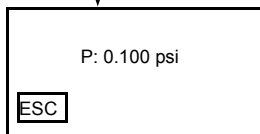
- When not recording, press **F1** (Start) to begin the logging function. The meter will automatically start and stop according to the set parameters. If the maximum number of data points is reached, logging stops and the records are held in the datalogger.



- To display your recorded measurements, press **F4** (View), or to display real-time measurements, press **F2** (Meas).



- To quit recording, press **F1** (Stop).
- Press **F1** (P-PG) or **F2** (N-PG) to review previous or next 100 data points.
- Press **F2** (Start) to continue recording. Previously recorded data points are not erased.



5. CALIBRATION

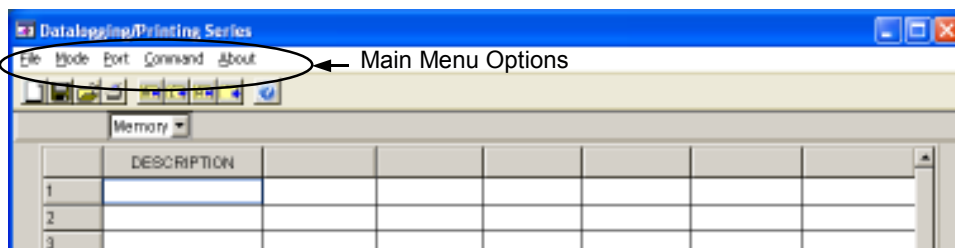
- Full calibration requires a standard manometer calibrator and should be performed by a professional calibration laboratory.
- The ZERO calibration value of 0.000 is not adjustable.
- To perform ZERO calibration, disconnect all tubes and do not apply pressure to the connector.
- After about 5 seconds, "OK" or "NG" (not good) is displayed to indicate if the calibration was a success. If the calibration was successful, the displayed measured value should be within spec.
- If "NG" is displayed, perform the calibration again. If the meter fails to calibrate after 3 attempts, it should be returned for repair.
- After completing one-point calibration, press **F1** (Exit) to return to the main calibration screen and repeat the steps to perform up to 3 points of calibration.

There are up to 3 calibration points:

PSI Range:	0~±5 psi
Calibration (HI):	4.000 psi
Calibration (LOW):	-4.000 psi
Adj. Range:	3:500 ~ 4.500, -3.500 ~ 4.500
Dimension	7" x 2 5/8" x 1 1/2" (180 x 70 x 40 mm)
Weight	8.7 oz (247g)
PSI Range	5.000 ~ ±5.000
Power	4 AAA Batteries

6. SOFTWARE

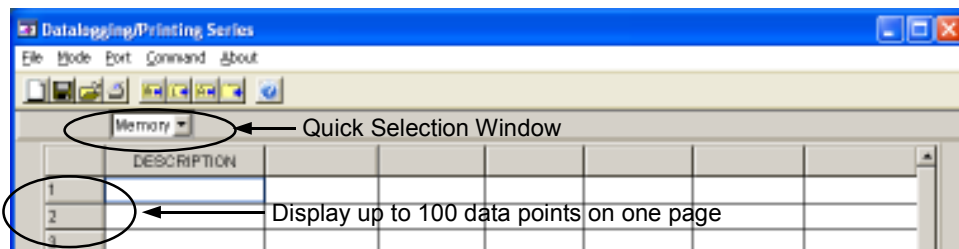
- Use the software and RS232 cable to download the data to a PC for further analysis, or to upload pre-edited file names to save set-up time.
- System requirements: WIN98 or above.



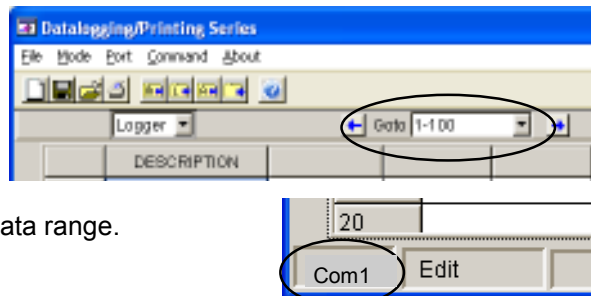
6-a. File Menu Options

- New: Create a new file.
- Load: Open a saved file.
- Save: Save current file.
- Save As: Save current file as a new file name.
- Print: Print all data, logged data, or data in memory.
- Exit: Exit the program.

6-b. Mode



- There are 2 data modes: Memory and Logger.
- Choose the data mode from "Mode" on the main menu or the quick selection window.
- In Logger mode, select "GoTo" to choose a logged data range.



6-c. Port

- Select the Com port and ensure that the meter is communicating with the PC.
- The selected Com port is displayed in the lower left of the screen.
- When connected, "PC Mode" and the Com port number (1~8) is displayed on the meter.

6-d. Command

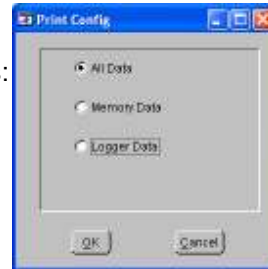
There are 4 commands in this software. Be sure to choose the correct mode before uploading or downloading.

- Download memory data.
- Download logger data: Live data points from the meter to the PC.
- Download all data: Live data points as well as points held in memory.
- Upload memory description: Pre-edited file names from the PC to the meter.
- To edit the file names, double-click the left mouse button and the cursor will blink to indicate that editing is available.

6-e. Print

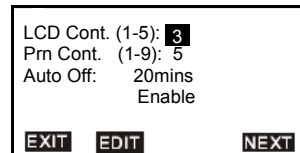
Select the data to be printed from the following 3 choices:

- All Data (Logger and Memory Data, sequential order).
- Memory Data.
- Logger Data.



7. AUTO POWER OFF

To prolong battery life, the meter will turn off automatically at the set interval (1~20 minutes) if no buttons are pressed. To edit or disable this feature, press **F4** (Set) to access the setup mode, then use the **F2** (Edit), **▲** or **▼** buttons and **Keypad** to make changes.



8. BATTERY REPLACEMENT

When the low battery icon is displayed, open the battery cover, install 4 fresh AAA batteries and replace the cover. Remove the batteries during prolonged periods of non-use.

9. TROUBLESHOOTING ERROR CODES

- E2: The value is under-flow.
- E3: The value is over-flow.
- E4: The source data that relates to the value is in error.

10. OPTIONAL ACCESSORIES

- 840090 - Water Resistant Pouch.
- 840092 - Bench-Top Tripod.
- 840093 - Field Tripod.

11. SPECIFICATIONS

Unit	PSI	Resolution
PSI	1	.003
Inch of H ₂ O	27.680517	.1
bar	.068948	.001
mbar	8.948253	.2
mm of Hg	1.712016	.2
Inch of Hg	.035907	.01
Oz / inch ²	6.000844	.05
Kg / cm ²	.070309	.001
kPa	.894859	.02
Ft of H ₂ O	.306719	.01
cm of H ₂ O	70.309000	.2

12. WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of one (1) year from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, or damage resulting from accident, misuse, or abuse of the product. In order to obtain warranty service, simply ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
7720 East Redfield, Suite 7, Scottsdale, Arizona 85260
Email: info@sperscientific.com, Phone: (480) 948-4448

Be sure to include your name, address, phone number, and a detailed explanation of why you are returning the item. Mail your warranty card or register online at: www.sperscientific.com.