

Meter Setup

Analog Output Scaling Procedure

- From the normal display mode, press and hold the **[P]** button for four (4) seconds.

The display will flash:

SETUP

followed by:

SKIP (the default selection)

- Press the **[P]** button two (2) times to skip the Calibration mode.

The display will flash:

A_OUT

followed by: **SKIP** (the default selection) and **ENTER** (the **[▲]** arrow selection)

- Use the **[▲]** arrows to select **ENTER** and then press the **[P]** button.

The display will flash:

AN_LO

followed by the present low setting for the analog output.

- Use the **[▲]** or **[▼]** arrows to set the meter to the value you wish to display at the **low** analog output setting.

For example, if you want the 0-10V analog output to deliver 0V at a reading of -100, you would set that value as shown above. If you are using a 4-20 mA output, this would be the value you wish to display at 4 mA.



- Press the **[P]** button to accept the low analog output setting.

The display will flash:

AN_HIGH

followed by the present high setting for the analog output.

- Use the **[▲]** or **[▼]** arrows to set the meter to the value you wish to display at the **high** analog output setting.

For example, if you want the 0-10V analog output to deliver 10V at a reading of 100, you would set that value as shown above. If you are using a 4-20 mA output, this would be the value you wish to display at 20 mA.

- Press the **[P]** button to accept the high analog output setting.

Analog Output Scaling is now complete. The display will automatically return to the normal display mode.



Meter Connections



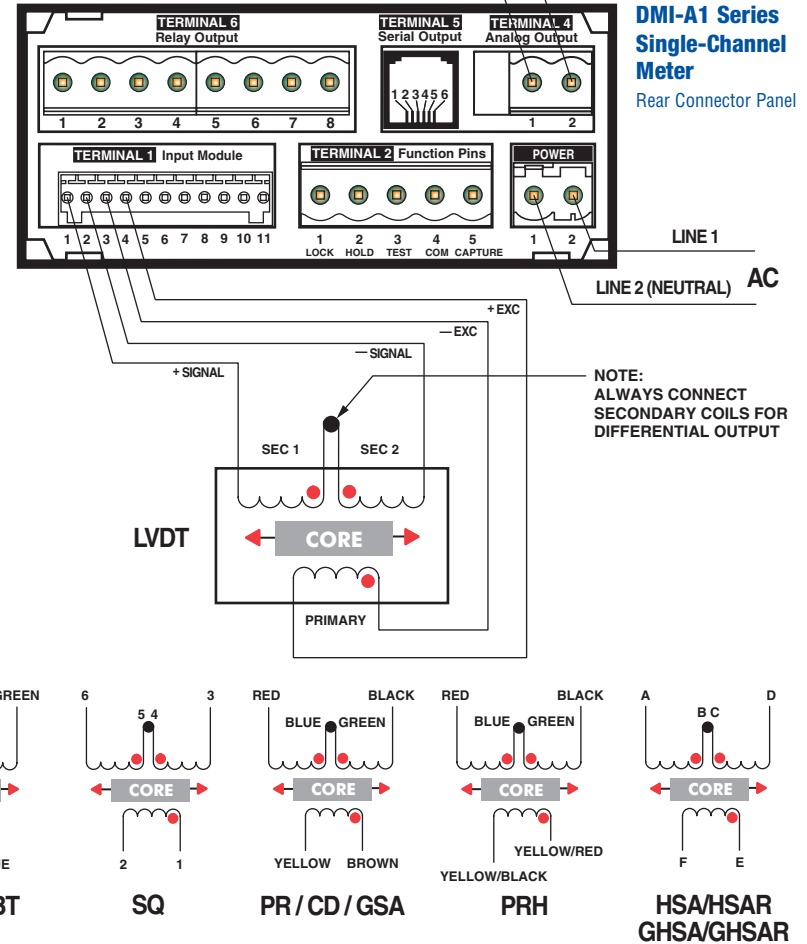
WARNING: AC and DC input signals and power supply voltages can be hazardous. Do not connect live wires to screw terminal plugs, and do not insert, remove, or handle screw terminal plugs with live wires connected.

- Locate the wiring diagram below that corresponds to the series of LVDT you are connecting to the meter, and identify the primary and secondary lead wires, terminals, or pin connections on the LVDT.
- Connect the LVDT secondary coil signal connections to pins 1 and 2 of Terminal 1 on the back of the meter and connect the primary coil connections to pins 3 and 4 as shown in the diagram below.

- If you are connecting the meter's analog output(s) to any external devices, connect them to the corresponding pins on Terminal 4 as shown below.
- Connect AC power to the POWER connector on the rear of the meter as shown below. The LED display will illuminate when power is connected.

Note: For information on using the serial output (Terminal 5) or the relay outputs (Terminal 6), please consult the DMC-A2 User Manual which can be downloaded from the Macro Sensors website at:

www.macrosensors.com



Meter Setup

Input Signal Setup

Note: When the meter is powered on, it automatically defaults to its normal display mode or “View” mode. **You can always safely exit to the display mode at any time, from any point within any mode (setup, calibration, etc.), without any danger of changing or affecting any previous settings, by pressing the [P] button 2 or 3 times in rapid succession.**

1. From the normal display mode, press and hold the [P] button for four (4) seconds.

The display will flash: **SETUP**

followed by: **SKIP** (the default or [V] arrow selection) and **ENTER** (the [A] arrow selection)

2. Press the [A] button (for the **ENTER** selection) and then press the [P] button.

The display will flash: **FREQ**

followed by: **60HZ** (the default or [V] arrow selection) and **50HZ** (the [A] arrow selection). 60Hz is the typical supply frequency in the United States.

3. Press the [P] button to select the **60HZ** setting.

The display will flash: **EXCIT**

followed by the present excitation frequency setting. Choices from 1.44 KHz to 11.52 KHz are selectable by using the [V] and [A] arrow buttons.

4. Use the [A] and [V] arrows to select **2.88** and then press the [P] button.

The display will flash: **OUTPUT**

followed by the present output rate. Choices from 4 Hz to 40 Hz are available by using the [A] and [V] arrow buttons. The 4 Hz option usually provides the best frequency response with the least amount of noise.

5. Use the [A] and [V] arrows to select **4 HZ** and then press the [P] button.

The display will flash: **DP**

followed by the present decimal point setting. Choices from no decimal point to four (4) decimal places are selectable by using the [A] and [V] arrow buttons. When calibrating the meter (see page 3) the user will usually set the span display value so that it represents some desired number of measurement units. The maximum display value is 99999 and the minimum is -1999. Because the DMI-A1 uses a fixed decimal point, select a number of decimal places that will not limit the maximum or minimum display values. For example, if you select two decimal places, the maximum displayed value will be 999.99 and the minimum will be -19.99.

6. Use the [A] and [V] arrows to select the desired number of decimal places and then press the [P] button.

The display will flash: **CAL**

followed by: **SKIP** (the default selection). The Input Setup procedure is now complete and the **CAL** message represents the first step of the Calibration Procedure. If you want to continue with calibration, proceed to the next page. If you wish to return to the normal display mode, press the [P] button 2 or 3 times in rapid succession until the LVDT output reading is displayed.

Meter Setup

Calibration Procedure

Note: If you are continuing from the Input Signal Setup procedure on the preceding page, the display will flash **CAL** followed by **SKIP** (the default selection). If you are starting the Calibration Procedure from the normal display mode, press and hold the [P] button for four (4) seconds until the display flashes **SETUP** followed by **SKIP**. Then press the [P] button once more to enter the calibration mode.

1. With the message **CAL** followed by **SKIP** flashing on the display, use the [A] and [V] arrows to select the **NULL** option and then press the [P] button.

The display will flash: **NULL**

followed by an uncalibrated reading based on the current position of the LVDT.

Identifying the “NULL” position of the LVDT is particularly important when using a free-core LVDT but it should also be used to check the physical mounting of any LVDT to ensure that the core will be positioned at the center of the LVDT’s linear range at the approximate center of the LVDT’s physical measurement range/stroke.

2. Adjust the LVDT until the display reads as close to zero as possible. It does not have to be exact and the reading may fluctuate slightly depending on the signal.

Make sure that the mounting of the LVDT and the measurement apparatus attached to the core will allow adequate movement in both directions from the NULL position that is within the LVDT’s physical measurement range/stroke.

3. Press the [P] button.

Once again, the display will flash: **CAL** followed by: **SKIP**.

4. Press the [A] button twice for the **INPUT** selection) and then press the [P] button.

The display will flash: **ZERO** followed by **0.0**

5. Adjust the LVDT until it is at the physical position where you want the meter to display a zero reading.

Make sure that this position is within the LVDT’s physical measurement range/stroke.

6. If necessary, use the [A] or [V] arrows to set the display to zero and then press the [P] button.

The display will flash: **SPAN** followed by the present SPAN setting.

7. Now adjust the LVDT until it is at the physical position where you want the meter to display the span setting.

Make sure that this position is within the LVDT’s physical measurement range/stroke.

8. Use the [A] or [V] arrows to set the display to the desired span value and then press the [P] button.

The input is now calibrated.

Note:

This calibration should not be confused with calibration of the analog output which should only be performed if you want to verify that the low and high analog output signals are correct using a calibration device such as a multimeter. Because your meter has been factory calibrated, this should not be necessary. If you wish to perform the calibration of the analog output, please consult the DMI-A1 User Manual which can be downloaded from the Macro Sensors website at:

www.macrosensors.com

Once again, the display will flash: **CAL** followed by: **SKIP** (the default selection).

If you wish to return to the normal display mode, press the [P] button 2 or 3 times in rapid succession until the LVDT output reading is displayed.

If you wish to scale the analog output, go to the Analog Output Scaling Procedure on page 4.