



## MeterMatch™

### Sender Voltage and Resistance

MeterMatch uses an internal Ohmmeter to measure the resistance of the sender. It sources 5 Vdc to the sender and measures the output current/voltage to determine the resistance. By measuring this voltage, you can determine the sender resistance that the MeterMatch is seeing, or perhaps detect a wiring error.

To make this measurement, power up the MeterMatch while connected to the sender, and measure from the terminal strip pin 4 (Sender Input) to ground, with your meter set to Vdc. It should be a voltage between zero volts if the sender is shorted to ground, and five volts if the input is open or very high resistance. It should never be above five volts, and if this pin is ever connected to a higher voltage, it is likely to damage the MeterMatch.

With the voltage reading, you can determine the approximate resistance that the sender is set at. For example, the following table shows the voltage at different sender resistances:

Sender Resistance (Ohms)	Sender Voltage (Vdc)
0	0.0
10	0.5
33	1.2
73	2.1
90	2.4
180	3.2
240	3.5
Open	5.0

If you wish to calculate a unique value, you can use one of these formulas.

- If you know the resistance of the sender (R), and want to determine what the voltage (V) should be, use this formula:  $V = R * 5 / (R + 100)$
- To determine the sender resistance (R) from a voltage reading (V), use this formula:  $R = 100 * V / (5-V)$