

Calibrating an Alliance MR/LVI Sensor with SenSet™ Field Programmability

Please note that your sensor was calibrated at the factory to a specified measuring range. You may choose to retain this calibration if it fits your purpose, or you may choose to recalibrate your sensor using the SenSet™ feature if you desire a more precise match of the sensor's electrical output to your mechanical device's range of movement.

Alliance Sensors' MR and LVI series Linear Position Sensors offer SenSet™ Field Programmability. SenSet™ allows the installer to very simply and quickly exactly match the full scale electrical output of a sensor to the actual mechanical movement range of the device in which the sensor is installed. This activity is usually referred to as a field calibration. To proceed with a SenSet™-based field calibration, follow these instructions:

1. Install the sensor into your mechanical device, leaving the sensor's I/O unconnected.
2. Connect the black wire or *ground* terminal to the power ground (-), and then connect the correct DC power input plus (+) to the sensor via the red wire or *power* (+) terminal.
- 3 a. To begin the SenSet™ process for voltage output, connect a DC voltmeter having the appropriate range with its plus (+) lead connected to the green wire or the *output* terminal and its minus (-) lead connected to the black wire or the power *ground* terminal.
- 3 b. To begin the SenSet™ process for current loop output, connect a DC milliammeter having the appropriate range with its plus (+) lead connected to the green wire or the *output* terminal, and its minus (-) lead connected to the loop load resistor, typically 250 or 500 Ohms. Connect the other end of the loop load resistor to the black wire or the power *ground* terminal.
4. Extend your mechanical device to its maximum range of motion, then connect the white (*cal*) wire or *cal* terminal to the black wire or *ground* terminal for 2-3 seconds.
5. Fully retract the mechanical device to its zero (start) position, then connect the white (*cal*) wire or the *cal* terminal to the black wire or *ground* terminal for 2-3 seconds.
6. The sensor's output is now calibrated to the end points of your mechanical device's range of motion. The SenSet™ procedure can be redone without limit, but its operational range is limited to 20% of specified full range, both at zero and at full range. (0 to 20% around zero, and 80 to 100% around full range). Note that both ends of the sensor's range must be calibrated using the SenSet™ procedure for the process to take effect.
7. When the SenSet™ process is completed, disconnect the voltmeter, or, in the case of current loop output, disconnect the milliammeter and reconnect the loop load to the green wire or the *output* terminal. If using a leaded or cable output sensor, trim and insulate the end of the white (*cal*) wire to avoid an inadvertent recalibration.