Quick Start Guide for SC-200 LVDT Signal Conditioner

1. If you are able to utilize the factory default settings for DC output and excitation frequency, skip to Step 3. Otherwise, open the SC-200 module's case by pushing the locking tab inward on both of the thin sides and sliding the case rearward to expose the two circuit-board-mounted DIP switches.

2. Set the pcb-mounted DIP switches: The factory default LVDT excitation frequency is 2.5 kHz, which is suitable for most LVDTs, but can be changed by setting DS2-1 and DS2-2 according to Table 1. The DC output is factory set at 0 to 10 V DC, but it can be changed by setting DS1 on the pc board according to Table 2. When DIP switch changes, if any, are finished, slide the pc board back into the module's case on its internal tracks and snap the front and rear sections of the case back together.

3. Mount the module: Remove the color-coded plugs from the SC-200 module and install the module on the DIN rail by hooking the bottom of the module's rear edge under the bottom edge of the rail, and then pressing the module back against the rail until the module's spring-loaded rail catch engages the top edge of the rail. To remove the module from the DIN rail, insert a flat-bladed screwdriver into the slot in the metal catch at the back of the module, lift the catch, and disengage the module from the rail.

4. Make the I/O connections: Following Table 3 and the schematics on page 4, connect the color-coded screw-terminal plugs to the LVDT primary and secondaries (and the secondaries' junction point if needed), DC power, and to the analog output to the system or indicator, as set in Step 2. When finished, insert the colored plugs completely back into the corresponding colored jacks on the module.

5. Calibrate the LVDT's core positions: Turn on the DC power and allow the module to warm up for at least 15 minutes before beginning the calibration procedure. The red **POWER** LED should glow steadily and the green LEDs should be off, except the **P** LED will be steady on if the module is a master (page 6) or is running in stand-alone operation. If any of the green LEDs are flashing, check the LVDT connections: **P** indicates open primary; **S** indicates open secondary; **E** indicates loss of excitation. With power applied and the red **POWER** LED on, calibration can proceed. **Note:** *The LVDT's core must not protrude from the LVDT at any point during the calibration process or erroneous calibration will result.*

► Shift the module into *CALIBRATION* mode by depressing both the **FULL SCALE** and **ZERO** buttons simultaneously for about 3 seconds, until the red **POWER** LED begins flashing. The module is now functioning in the *CALIBRATION* mode

► One of the green LEDs will be illuminated, indicating that the LVDT's core is on one side or the other of null, or at null. As the LVDT's core is moved inward, that LED will go out and the middle LED will come on (showing the LVDT is at null), then the middle LED will go out and the LED on the opposite end (compared to the first green LED that was on) will come on. Adjust the LVDT core's position until the middle green LED is on. The LVDT's core is now approximately at its null or mid-range position.

► Move the workpiece whose position is being measured so that it is located at the middle of its range of motion when the LVDT's core is at its null position. Mechanically couple the LVDT core to the workpiece in this position. Now, move the workpiece to the desired Full Scale (maximum travel) position and depress the **FULL SCALE** pushbutton until the green (+) LED flashes once and the (-) LED lights up.

► Next, move the workpiece, still coupled to the LVDT's core, to the Zero (start of travel) position at the other end of its range of motion and depress the **ZERO** pushbutton until the green (-) LED flashes once.

► If one (or both) of the green LEDs is still flashing, rerun the calibration procedure by moving the workpiece and the coupled core to the end position indicated by the flashing LED and depressing its nearby button. The red LED should be flashing, showing that the module is in *CALIBRATION* mode. To return to *RUN* mode, depress both the **FULL SCALE** and the **ZERO** buttons simultaneously for about 3 seconds until the green LEDs go out and the red **POWER** LED turns on steady. Verify that the analog output and its direction (slope) is that which was desired. If the output is reversed, switch DS2-3 to *on.*

The complete SC-200 Instruction Manual may be downloaded from: www.alliancesensors.com

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