

FAQ Note

1250 Not Tracking, Stuck on One Reading

Problem: The display value never changes; it is stuck on one reading

Explanation: There are two possible causes:

- (1) The 1250 can be programmed for a “Segmented” mode, which is typically used when monitoring LTC tap position. In this mode, the display will stay on a value until the measured change in synchro position is greater than $\pm 1/2$ the programmed Degrees Per Segment (OP 21). Then it jumps to the next integer value. If a programming error was made when entering the Degrees Per Segment (OP 21) parameter, such as placing the decimal point in the wrong spot, the Degrees Per Segment value may be too large (i.e. 100.00 instead of 10.000). This will cause the 1250 display to wait for a very large rotation of the synchro before it jumps to the next number.
- (2) The 1250 reads the stator voltages output from the synchro transmitter on terminals A to C and B to C. These voltages vary with the position of the rotor shaft. If one of the stator coils in the synchro burns out, one of these voltage readings will remain at zero, regardless of the rotor position. By nature, at every 120 degrees of rotation, a synchro transmitter will reach zero volts on one of its three stator outputs. Unfortunately, if a stator coil burns out, the resulting zero volt output from that coil will be interpreted by the 1250 as the synchro being at one of these three 120 degree positions and the display will get stuck on that reading for at least 180 degrees of rotor position.

Troubleshooting: The two possible causes can be troubleshot as follows:

- (1) If the 1250 is being used in the Segmented Mode, go to the Degrees Per Segment (OP 21) parameter in the programming menu and double check that the value and decimal point position are correct. Correct if necessary. If a correction is made, the present position must be entered into the OP 27 parameter, and loaded into memory using the OP 28 function. With this done, return to the RUN mode and test the tracking of the 1250.
- (2) Measure the stator voltages at the 1250 terminals A to C and B to C. They should be between 5 and 90 volts AC. If a measurement is less than 5 VAC, rotate the synchro approximately 45 to 90 degrees and take another voltage measurement. If voltage measured across the same terminals is still below 5 volts, then the synchro is probably defective. Disconnect all wiring to the synchro and measure the resistance between the S1 – S2, S2 – S3, and S3 – S1 terminals; it should be about 500 ohms. Measure the resistance between the R1 and R2 terminals; it should be about 800 ohms. If any of these resistance measurements are infinity, the synchro is definitely bad. Replace the synchro transmitter and re-program the 1250. With this done, return to the RUN mode and test the tracking of the 1250.