

# Service Bulletin

SB 1394T100-14RB-A

1394T100-14RB Turn Coordinator

**SUBJECT:** Electrical rate output performance during high bank angles and high temperature conditions

## 1. PLANNING INFORMATION

### A. Effectivity:

This service bulletin applies to 1394T100-14RB Turn Coordinator with electrical rate output, manufactured by Mid-Continent Instrument Co., Inc. It affects units manufactured after December 1, 2006 and prior to February 28, 2007, serial numbers beginning with M06-xxxxx, A07-xxxxx, and B07-xxxxx.

### B. Reason:

Some units may exhibit a maximum electrical rate output at turn rates exceeding 360 degrees/minute (two times the standard rate turn). During this maximum electrical rate output condition the Turn Coordinator electrical rate output may not be responsive to the aircraft rate turns. This condition is amplified when the Turn Coordinator is operated in temperature environments that exceed FAA-TSO requirements. The electrical rate output returns to normal operation when the rate of turn decreases to less than 360 degrees/minute.

### C. Description:

This service bulletin requires the bench functional testing of the unit at turn rates of 360 degrees/minute or greater during temperature conditions above 122 degrees F. Under these conditions the electrical rate output may unexpectedly go to a constant high of 2.5VDC either with the same or opposite electrical polarity as the electrical rate output of 1.0VDC at normal 180 degrees/minute turns.

This is an invalid autopilot condition and therefore, by design, if the unit remains in this condition for more than 2 seconds the unit's power "OFF" warning flag will display and the electrical tach output will change to a low condition, warning the autopilot that the electrical rate output is not useable.

Due to the randomness of this high electrical output condition all Turn Coordinator's manufactured within the serial number range listed in Section A should be returned to the original manufacture for bench functional testing and, if needed, re-calibration.

### D. Compliance:

Units specified under Section A of this document should be tested at the earliest date possible.

### E. Approval:

FAA and TSO approval is not affected.

F. Manpower:

The unit should be returned to the manufacturer for bench functional testing and if needed, re-calibration. Up to one hour removal and installation is allowed.

G. Material – Cost and Availability:

This service bulletin can only be accomplished by the original manufacturer of the unit and must be returned for bench functional testing. Units under manufacturer's limited warranty will be serviced under the manufacturer's limited warranty terms. No parts are needed.

H. Tooling:

Special tooling is required.

I. Weight and Balance:

No change.

J. Electrical load data:

No change.

K. Other Publications affected:

Maintenance Manual P/N 34-20-47.

**2. ACCOMPLISHMENT INSTRUCTIONS:**

A. Return the unit to the manufacturer for bench functional testing.

B. Upon completion of this service bulletin, units within the stated serial number range will be identified with the letter "A" added to the end of the original serial number.

**3. MATERIAL INFORMATION**

No parts are needed for this service bulletin