

# Customer Notification

B-CN-301-EN REV B

January 5, 2023

**SUBJECT: TT Series Bearing Sensor Cable Verification \*\*Revised\*\***

## Purpose

**There have been a few changes to the steps below. Please review the updated procedure contained in this bulletin.**

The purpose of this bulletin is to provide a procedure to determine if there are intermittent connections in the TT Series Bearing Sensor Cables. If any unexpected behavior exists, it could be the result of an intermittent connection. If not properly diagnosed, the issue may lead to unnecessarily replacing components in the bearing control loop, such as the BMCC, PWM, Bearing Power Feedthroughs, or Bearing Sensor Cables.

Refer to the procedure below if a compressor experiences a bearing fault type where documented verification, testing, and troubleshooting processes have not been able to identify the cause. Additionally, the procedure described below will be added to the next revision of the TT Series Service Manual.

## Bearing Sensor Cable Verification

1. Remove the Modbus and Interlock connections from the Compressor I/O Board.
2. Connect to the compressor using the SMT software and open the Calibration Tool.
3. Perform a bearing calibration by clicking on "Start Calibration."
4. After calibration is complete, review the data. Do all orbits and gain values appear normal?
  - a. Yes: Continue to Step 5.
  - b. No: Continue to Step 7.
5. Perform a validation by clicking on "Validate."
6. After validation is complete, did the shaft levitate as expected?
  - a. Yes: Continue to Step 21.
  - b. No: Continue to Step 7.
7. Turn off the Mains Input power to the compressor.
8. Remove the Service Side Cover.
9. Disconnect the Bearing Sensor Cables from J9 and J10 at the Backplane.
10. Remove the Bearing Sensor Cables from the front and rear 9-pin feedthroughs.
11. Inspect the Bearing Sensor Cables and associated connections for damage, debris, or corrosion.
12. Clean or replace as necessary.
13. Install the Bearing Sensor Cables to their respective locations.
14. Apply a thin coating of dielectric grease on the exterior of the Bearing Sensor Feedthrough Connectors where the Bearing Sensor Cables contact the feedthroughs. (**NOTE:** Do not apply dielectric grease directly to the bearing sensor feedthrough pins.)
15. Re-install the Service Side Cover.
16. Re-apply power to the compressor.

17. Repeat the calibration and validation procedures, Steps 2 through 6.
18. If the calibration and/or validation results improve, the bearing control loop is functioning normally. Continue to Step 21.
19. If calibration and/or validation results continue to show an issue, replace the Bearing Sensor Cables, then verify other components in the bearing control loop as instructed in the Service Manual.
20. Repeat the validation process in Steps 2 through 6 to ensure proper functionality.
21. Return the compressor to normal operation.

### **Actions Required**

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If a bearing fault type occurs and the cause cannot be determined based on the documented troubleshooting in the TT Series Service Manual, refer to the above procedure to verify the TT Series Bearing Sensor Cables to determine if an intermittent connection may be causing unexpected compressor behavior.

### **Need Assistance**

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For more information, please contact our Product Support group at [turbocor.ps.na@danfoss.com](mailto:turbocor.ps.na@danfoss.com).

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