Calibrate Moore Industries ECT Signal Isolator, Splitter and Converter

Tank Farm Maintenance Procedure

USQ # Routine Maintenance

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<td>Periodic Review</td>
<td>REWORD Steps 3.1.1, 5.1.3, 5.1.3.1, 5.1.3.2, 5.1.4.2, 5.1.5, 5.1.6, 5.1.6.1, level 3 activity level, 5.1.8. ADD Steps 5.1.4, 5.1.4.1, Channel B activity level with Steps 5.1.7 – 5.1.7.4. STRUCK Step 5.1.8.1.</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for calibrating a Moore Industries type ECT 4-20 mA signal Isolator, Splitter and Converter.

1.2 Scope

This procedure involves 4-20 mA signal Isolators, Splitters and Converters, supplied by Moore Industries, having a 4-20 mA input and a 4-20 mA output.

2.0 INFORMATION

2.1 General Information

A general overview of configuration, setup, face plate and dimensions of the unit can be seen on the following:

- Figure 1 - Four Wire Configuration
- Figure 2 – Calibration Set Up of the ECT Channel Splitter
- Figure 3 - ECT Face Plate and Dimensions.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 The Hazards associated with the work performed in this procedure have been evaluated and determined to fall under the GHA.

3.2 Radiation and Contamination Control

Work in Radiological Areas will be performed using a Radiological Work Permit following review by Radiological Control per the ALARA Work Planning procedure TFC-ESHQ-RP_RWP-C-03.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following supplies will be needed to perform this procedure:

- Current source, 4-20 mA, with accuracy as specified by the data sheet
- Milli-ammeter (calibrated), capable of monitoring 4 to 20 mA
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.

4.2 Field Preparation

4.2.1 CONFIRM evaporator personnel have placed equipment to the required configuration for testing.
Calibrate Moore Industries ECT Signal Isolator, Splitter and Converter

5.0 PROCEDURE

5.1 Calibration

**AS Found**

5.1.1 **LIFT** field connections to the unit.

5.1.2 **CONNECT** test equipment to Isolator/Converter. (See Figure 1 and Figure 2)

5.1.3 **PERFORM** the following steps for channel A.

5.1.3.1 **APPLY** test INPUT values per Data Sheet for channel “A”.

5.1.3.2 **RECORD** OUTPUT values in As Found section of Data Sheet for channel “A”.

5.1.4 **PERFORM** the following Steps for Channel “B”.

5.1.4.1 **APPLY** test INPUT values per Data Sheet for channel “B”.

5.1.4.2 **RECORD** OUTPUT values in As Found section of Data Sheet for channel “B”.

5.1.5 **IF** Isolator/Converter channels A and B values are within tolerance specified by Data Sheet, **RECORD** in As-Left column on Data Sheet AND **GO TO** Restoration, Section 5.2.

**Channel A Calibration**

5.1.6 **IF** channel A Isolator/Converter As-Found data is out of tolerance, **PERFORM** the following:

5.1.6.1 **ADJUST** input source on channel A to its minimum value. (See Figure 3)

5.1.6.2 **ADJUST** the corresponding ZERO adjustment until the Output reads the Output value listed on the Data Sheet.

5.1.6.3 **APPLY** full scale INPUT specified on the Data Sheet.

5.1.6.4 **ADJUST** corresponding SPAN adjustment until the Output reads the specified Output listed on the Data Sheet.
5.1 Calibration (Cont.)

Channel B Calibration

5.1.7 IF channel B Isolator/Converter As-Found data is out of tolerance, PERFORM the following:

5.1.7.1 ADJUST input source on channel B to its minimum value (See Figure 3).

5.1.7.2 ADJUST the corresponding ZERO adjustment until the Output reads the Output value listed on the Data Sheet.

5.1.7.3 APPLY full scale INPUT specified on the Data Sheet.

5.1.7.4 ADJUST corresponding SPAN adjustment until the Output reads the specified Output listed on the Data Sheet.

5.1.8 REPEAT steps 5.1.3 through 5.1.5 for the appropriate channel(s) calibrated.
5.2 Restoration

5.2.1 IF any problems were encountered with calibration, INFORM FWS.

5.2.2 DISCONNECT AND REMOVE Test Equipment.

5.2.3 RECORD Test Equipment information and calibration status on Data Sheet.

5.2.4 CHECK equipment system restoration by observing indications are consistent with expected conditions.

5.2.5 NOTIFY Operations that testing is complete and system may be returned to desired configuration.

5.3 Acceptance Criteria

Acceptance Criteria has been met when Steps in this procedure have been satisfactorily performed and As-Left values meet the specifications and tolerance(s) per the Data Sheet.

5.4 Review

5.4.1 INFORM FWS test is complete.

5.4.2 FWS REVIEW AND ENSURE the following:

- Completed Data Sheets meet the acceptance criteria.
- Comments sections are filled out appropriately.
- Work requests needed as a result of this procedure are identified and generated.
- Work request number(s) of any work documents generated as a result of this procedure, are recorded in the Comments/Remarks section of the Data Sheet, as applicable.

5.5 Records

The performance of this procedure generates no records. However, PM Data Sheets associated with the procedure, are records and are maintained in the work package as record material.

The record custodian identified in the Company-level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
Figure 1 - Four Wire Configuration
Figure 2 – Calibration Set Up of the ECT Channel Splitter

**NOTE:**

USE TWO Meters OR CALIBRATE ONE CHANNEL AT A TIME
Figure 3 - ECT Face Plate and Dimensions

4-WIRE MODELS