Tank Farm Maintenance Procedure

USQ # GCX-2

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for the calibration of a Digital Control Company 12259 Bubbler Level Monitor.

1.2 Scope

This procedure applies to the field calibration of a Digital Control Company 12259 Bubbler Level Monitor.

2.0 INFORMATION

None

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

This procedure can be performed in multiple locations. A work area and/or location specific hazard analysis must be performed prior to starting the activity per TFC-ESHQ-S_SAF-C-02.

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 may be needed to perform this procedure:
- Calibrated pressure source (Druck)
- Shop Rags
- Other tools, equipment and supplies as identified by Shift Manager/ OE/FWS/User.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- Digital Control Company Bubbler Level Monitor (BLM), Model Number 12259 User’s manual.
- Radiological Work Permit (RWP)

4.3 Field Preparation

4.3.1 ENSURE a work area and/or a Field Condition Hazard Evaluation has been performed per TFC-ESHQ-S_SAF-C-02.
5.0 PROCEDURE

5.1 Obtain As-Found Data

5.1.1 DISCONNECT power to level monitor.

5.1.2 OPEN front cover of unit AND DISCONNECT compressor, by unplugging pin connector.

5.1.3 PLACE rag around bubbler tube connection.

5.1.4 CLOSE valve AZ301TK-COND-V-105 AND DISCONNECT Tee cap from bubbler tube.

5.1.5 CONNECT pressure device (Druck) to Tee.

5.1.6 APPLY power to Level Monitor.

5.1.7 APPLY input values per Data Sheet.

5.1.8 RECORD observed output values in "As-Found" column of Data Sheet.

5.1.9 IF As-Found values are not within specified tolerance per Data Sheet, GO TO Section 5.2,

    OR

    IF As-Found values are within specified tolerance, but deemed marginal, and optimization is desired, GO TO Section 5.2,

    OR

    IF As-Found values are within specified tolerance, RECORD As-Found values in As-Left column of Data Sheet AND

    GO TO Restoration, Section 5.3.
5.2 Calibration

**ZERO SCALE**

5.2.1 **REVIEW** button layout on controller to determine functions to be used for calibration. (See Figure 1)

5.2.2 **ENSURE** no pressure on bubbler system (i.e. Druck reading 0.0 IN.)

5.2.3 **PERFORM** the following to access setup mode on transmitter:

5.2.3.1 **PRESS AND HOLD** “HIGH” and “LOW” buttons simultaneously until display shows, OFFSET=XX.XX IN. (No more than 8 seconds)

5.2.3.2 **WAIT** two minutes for averagers to stabilize.

5.2.4 **PRESS AND HOLD** “COARSE” button while turning the “ADJUST” knob clockwise until display nears (1.00) **AND**

**RELEASE** the button.

5.2.5 **PRESS AND HOLD** “FINE” button while turning the “ADJUST” knob clockwise slowly until display goes to (1.00) **AND**

**RELEASE** the button.

5.2.5.1 **IF** display does not generate a (1.00) reading, **REPEAT** Steps 5.2.4 and 5.2.5 to achieve (1.00) reading on the display.

5.2.6 **CONFIRM** Display shows (1.00).

5.2.7 **PRESS AND RELEASE** the “ENTER NEXT” button, to allow display to show SPAN=XX.XX.
5.2 Calibration (Cont.)

**FULL SCALE**

5.2.8 **USING** pressure device (Druck), **INPUT** pressure that corresponds with input high level specified on Data Sheet.

5.2.9 **PRESS AND HOLD** “COARSE” button while turning the “ADJUST” knob until display shows level close to output high value of Data Sheet **AND**

**RELEASE** the button.

5.2.10 **PRESS AND HOLD** the “FINE” button while turning the “ADJUST” knob slowly until display shows the correct output high level value **AND**

**RELEASE** the button.

5.2.10.1 **IF** display does not generate correct output high level value, **REPEAT** Steps 5.2.9 and 5.2.10 to achieve correct fluid value on display.

5.2.11 **CONFIRM** display shows correct output high level value.

5.2.12 **PRESS AND RELEASE** “ENTER NEXT” button, to allow display to show **ADDRESS= XXX**.

5.2.13 **PRESS AND RELEASE** “ENTER NEXT” button, to allow display to show **OUT FS=XX.XX**.

5.2.14 **PRESS AND HOLD** “COARSE” button while turning the “ADJUST” knob until display shows the closest fluid level value that corresponds to (Output High Level Value) **AND**

**RELEASE** the button.
5.2 Calibration (Cont.)

5.2.15 PRESS AND HOLD “FINE” button while turning the “ADJUST” knob slowly until display shows the correct fluid level value that corresponds to (Output High Level Value) AND

RELEASE the button.

5.2.15.1 IF display does not show correct fluid level that corresponds to (Output High Level Value), REPEAT Steps 5.2.14 and 5.2.15 to achieve correct fluid value on display.

5.2.16 CONFIRM display shows correct fluid value that corresponds to (Output High Level Value).

5.2.17 PRESS AND RELEASE “ENTER NEXT” button, to allow display to show SAVE? (UP=YES).

5.2.18 PRESS AND RELEASE “UP” button, to save values and return to normal mode.

5.2.19 APPLY input values per Data Sheet.

5.2.20 RECORD observed output values in As-Left column of Data Sheet.

5.2.21 IF values are within tolerance per Data Sheet, GO TO Section 5.3,

OR

IF values are not within tolerance per Data Sheet, REPEAT Steps 5.2.3 through 5.2.18 until values are within tolerance,

OR

IF required values cannot be achieved, NOTIFY FWS.
5.3 Restoration

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

5.3.2 RELEASE pressure from (Druck) pressure device.

5.3.3 DISCONNECT pressure device (Druck) from Tee.

5.3.4 INSTALL Tee cap AND

OPEN valve AZ301TK-COND-V-105.

5.3.5 DISCONNECT power to level monitor.

5.3.6 RECONNECT the compressor, ensuring the polarity is correct on the pin connector.

5.3.7 APPLY power to level monitor.

5.3.8 RECORD the Test Equipment information and calibration status on Data Sheet.

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

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

5.4 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.

5.5 Review

5.5.1 INFORM FWS test is complete.

5.5.2 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.
5.6 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 DCC 12259 Terminal Points and Button Layout