Calibrate Veltron II Pressure Indicating Transmitter

Tank Farm Maintenance Procedure

CHANGE HISTORY (≤ LAST 5 REV-MODS)

<table>
<thead>
<tr>
<th>Rev-Mod</th>
<th>Release Date</th>
<th>Justification</th>
<th>Summary of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-1</td>
<td>01/09/2018</td>
<td>Periodic Review</td>
<td>Inconsequential Change: Removed “as needed” from Step 5.1.5 and updated record section.</td>
</tr>
<tr>
<td>E-0</td>
<td>02/25/2015</td>
<td>Periodic Review.</td>
<td>Standardized statements to remove vague phrases and to meet the requirements of the Writer’s Standard.</td>
</tr>
<tr>
<td>D-0</td>
<td>11/14/2011</td>
<td>Periodic Review.</td>
<td>Pages 2-9: Format corrections and editorial changes only.</td>
</tr>
</tbody>
</table>

Table of Contents

1.0 1.0 Purpose AND SCOPE.................................................................................................................. 2
     1.1 Purpose........................................................................................................................................... 2
     1.2 Scope............................................................................................................................................... 2

2.0 INFORMATION....................................................................................................................................... 2

3.0 PRECAUTIONS AND LIMITATIONS....................................................................................................... 2
     3.1 Radiation and Contamination Control........................................................................................... 2

4.0 PREREQUISITES ................................................................................................................................. 2
     4.1 Special Tools, Equipment, and Supplies......................................................................................... 2

5.0 PROCEDURE........................................................................................................................................... 3
     5.1 Initial Setup..................................................................................................................................... 3
     5.2 Calibrate Input................................................................................................................................. 4
     5.3 Calibrate Output 1........................................................................................................................... 6
     5.4 Calibrate Output 2........................................................................................................................... 8
     5.5 Restoration...................................................................................................................................... 9
     5.6 Acceptance Criteria......................................................................................................................... 9
     5.7 Review............................................................................................................................................ 9
     5.8 Records........................................................................................................................................... 10

Figure 1 - Veltron Calibration Setup .................................................................................................... 11

Figure 2 - Veltron II Connections....................................................................................................... 12
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions to calibrate VELTRON II pressure indicating transmitter.

1.2 Scope

This procedure includes VELTRON II pressure indicating transmitter version 4.XX and associated test equipment necessary for calibration.

2.0 INFORMATION

NONE

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Radiation and Contamination Control

Work in radiological areas will be performed using a Radiological Work Permit following review by Radiological Control per ALARA work planning procedure TFC-ESHQ-RP_RWP-C-03.

4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

The following equipment may be needed to perform this procedure:

- Digital multimeter capable of measuring range and accuracy stated on Data Sheet
- Digital manometer capable of range and tolerance per Data Sheet (or equivalent)
- Applicable hand tools
- Other tools, equipment and supplies as identified by Shift Manager/OE/FWS/User.
5.0 PROCEDURE

5.1 Initial Setup

5.1.1 ENSURE VELTRON power switch is OFF.

5.1.2 REMOVE cover (4 screws).

5.1.3 ISOLATE process tubing AND

IF wiring requires disconnecting, DISCONNECT wiring.

5.1.4 CONNECT process tubing and test equipment per Figure 1.

NOTE - Power requirement is given on label below ON/OFF switch.

5.1.5 IF connection to power terminals is needed, CONNECT power to terminals 14, 15, and 16 (Figure 2).

5.1.6 IF pressure output 1 is used, CONNECT test equipment to terminals 1(+) and 3(-) (Figure 2).

NOTE - VELTRON II will display warm-up routine prior to switching to normal operation display.

- Screen will scroll (sequentially) through its startup routine and stop at operating screen.

5.1.7 TOGGLE/SLIDE power switch to ON.

5.1.8 ADJUST input pressure per Data Sheet AND

RECORD input data, and output data [if output(s) is used] in As-Found column(s) of Data Sheet.

5.1.9 IF As-Found input data is NOT within tolerance per Data Sheet, GO TO Section 5.2.

5.1.10 IF output 1 is used, and As-Found data is NOT within tolerance per Data Sheet, GO TO Section 5.3.

5.1.11 RECORD As-Found data in As-Left column of Data Sheet.

5.1.12 GO TO Section 5.4.
5.2 Calibrate Input

5.2.1 PRESS ENTER and UP and DOWN (верх, низ) until display reads:

Transmitter Input
Calibration

5.2.2 PRESS ENTER until display reads:

Transducer Zero

5.2.3 PRESS ENTER until display reads:

Transducer Zero
-- Push ENTER --

5.2.4 ADJUST input pressure to ZERO scale value per Data Sheet.

5.2.5 PRESS ENTER until display reads as follows (count down from 4 to 0):

Transducer Zero
Settle Delay: 4

DISPLAY at countdown = 0

InPut Zero Done
-- Push ESCAPE --

5.2.6 PRESS ESCAPE until display reads:

Transducer Zero
5.2 Calibrate Input (Cont.)

5.2.7 PRESS UP until display reads:

```
Transducer Span
```

5.2.8 ADJUST input pressure to full natural span value per Data Sheet.

5.2.9 PRESS ENTER until display reads:

```
Transducer Span
-- Push ENTER --
```

5.2.10 PRESS ENTER until display reads as follows (count down from 4 to 0):

```
Xmit Input Span
Settle Time:4
```

DISPLAY at countdown = 0:

```
Input Span Done
-- Push ESCAPE --
```

5.2.11 PRESS ESCAPE button.

5.2.12 IF display is:

```
Bad Input Span
-- Push ESCAPE --
```

PRESS ESCAPE AND

GO TO 5.2.8.

5.2.13 PRESS ESCAPE.
5.3 Calibrate Output 1

5.3.1 IF used, CALIBRATE output 1.

5.3.2 IF not used

OR

IF in tolerance, GO TO Step 5.3.15.

5.3.3 IF out of tolerance, PRESS UP and DOWN (↑, ↓) keys until display reads:

```
Transmitter Output Calibration
```

5.3.4 PRESS ENTER AND

SCROLL UP/DOWN until display reads:

```
OutPut 1 Zero
```

5.3.5 SELECT appropriate digital multimeter scale for output per Data Sheet.

5.3.6 PRESS ENTER until display reads:

```
Output 1 Zero Perform Calibration
```

5.3.7 SCROLL UP/DOWN to desired ZERO value per Data Sheet.

5.3.8 PRESS ENTER to accept value and display:

```
OutPut 1 Zero
```
5.3 Calibrate Output 1 (Cont.)

5.3.9 PRESS UP until display reads:

```
OutPut 1 Span
```

5.3.10 PRESS ENTER until display reads:

```
OutPut 1 Span
Perform Calibration
```

5.3.11 SCROLL UP/DOWN to desired span value per Data Sheet.

5.3.12 PRESS ENTER to accept value and display:

```
OutPut 1 Span
```

5.3.13 IF display is:

```
Bad Output Span
-- Push ESCAPE--
```

PRESS ESCAPE AND

GO TO 5.3.9.

5.3.14 PRESS ESCAPE.

5.3.15 ADJUST input pressure per Data Sheet AND

RECORD As-Left data for display and output (if output is used) in As-Left column of Data Sheet.
5.4 Calibrate Output 2

5.4.1 IF used, CALIBRATE output 2.

5.4.2 IF not used, GO TO Section 5.5.

5.4.3 CONNECT test equipment to output 2 per Figure 2

OR

OBSERVE response of controlled device.

5.4.4 ADJUST input above and below set point specified on Data Sheet AND
ENSURE control output responds.
5.5 Restoration

5.5.1 IF any problems were encountered with calibration, INFORM FLM.

5.5.2 ENSURE Test Equipment has been disconnected and removed.

5.5.3 RECONNECT field wiring and process tubing.

5.5.4 RETURN instrument to proper configuration

OR

CONFIGURE instrument as directed by the Shift Manager.

5.5.5 ENSURE equipment system restoration by observing indications are consistent with system configuration.

5.5.6 ENSURE Test Equipment information and calibration status are recorded on Data Sheet.

5.6 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.

5.7 Review

5.7.1 INFORM FWS calibration is complete.

5.7.2 FWS must 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
   • Applicable work request number(s) of any work documents generated as a result of this procedure are recorded in Comments/Remarks section of Data Sheet.
5.8 Records

5.8.1 This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

5.8.2 The identified record custodian is responsible for record management in accordance with TFC-BSM-IRM_DC-C-02 or other applicable requirements.
Calibrate Veltron II Pressure Indicating Transmitter

Figure 1 - Veltron Calibration Setup

NOTE:
Connect test equipment to low side if testing vacuum and high side if testing positive pressure.
Figure 2 - Veltron II Connections

- TRANSMITTER/AUTO-001 REPORTING OUTPUT 1
- OUTPUT 2
- SIGNAL COMMON FOR TERMINALS 1 & 2
- EARTH GROUND
- POWER SUPPLY NEUTRAL (-)
- POWER SUPPLY LINE (+)

PER LABEL ON UNIT