Brooks® Model 3809 Flow Meter

Tank Farm Maintenance Procedure

Effluent Treatment Facility

USQ Not Required – ETF is a <Hazard Category 3 Radiological Facility

<table>
<thead>
<tr>
<th>CHANGE HISTORY (≤ LAST 5 REV-MODS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rev-Mod</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>A-2</td>
</tr>
<tr>
<td>A-1</td>
</tr>
<tr>
<td>A-0</td>
</tr>
</tbody>
</table>

Table of Contents

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
  3.2 Environmental Compliance ............................................................................................................. 2

4.0 PREREQUISITES ..................................................................................................................................... 3
  4.1 Special Tools, Equipment, and Supplies ......................................................................................... 3
  4.2 Performance Documents ............................................................................................................... 3

5.0 PROCEDURE ......................................................................................................................................... 4
  5.1 Setup and Calibration Check ........................................................................................................... 4
  5.2 Calibration ...................................................................................................................................... 5
  5.3 Restoration ..................................................................................................................................... 5
  5.4 Acceptance Criteria ......................................................................................................................... 5
  5.5 Review ........................................................................................................................................... 5
  5.6 Records ......................................................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides a safe, uniform method for calibration of the Brooks® Model M/T 3809 thru-flow meter.

1.2 Scope

This procedure applies instructions for the setup and calibration of the optional 4 to 20 mA transmitter on Brooks Model M/T 3809 thru-flow meter.

2.0 INFORMATION

None.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Radiation and Contamination Control

3.1.1 Work in radiological areas will be performed using a radiological work permit following review by Radiological Control per ALARA Work Planning procedure, TFC-ESH-RP_RWP-C-03.

3.2 Environmental Compliance

3.2.1 In the event of a spill/leak/release, notify the SOM/FWS and respond per ETF-ERP-85B-003, Emergency Spill or Release at ETF.
4.0 PREREQUISITES

4.1 Special Tools, Equipment, and Supplies

NOTE - M&TE used to collect acceptance criteria data during performance of this procedure shall meet the following requirements:
- Be within its current calibration cycle as evidenced by an affixed calibration label
- Be capable of desired range
- Have an accuracy consistent with state-of-the-art limitations
- Accuracy is equal to or greater than M&TE tolerance specified on PM/S data sheet or is at least four times greater than specified device tolerance.

The following supplies may be needed to perform this procedure:
- CMD capable of reading 0 to 20 mADC.

4.2 Performance Documents

The following documents may be needed to perform this procedure:
- Manufacturer’s installation and operation manual: X-3809, Model M/T 3809 All Metal Thru-Flow Flow Meter.
5.0  PROCEDURE

5.1  Setup and Calibration Check

5.1.1  LIFT negative lead at output terminal.

5.1.2  CONNECT CMD (mAADC) in series with lifted lead and terminal.

5.1.3  REMOVE indicator cover/window assembly.

5.1.4  RECORD as-found position of pointer on PM/S data sheet.

5.1.5  VARY position of pointer per PM/S data sheet AND

      RECORD CMD reading in as-found column of data sheet.

5.1.6  IF pointer is not in line with Zero, GO TO Step 5.2.1.

5.1.7  IF as-found values are not within specified tolerance per PM/S data sheet,
      GO TO Section 5.2.

5.1.8  IF as-found values are within specified tolerance, but deemed marginal, and
      optimization is desired, GO TO Section 5.2.

5.1.9  IF as-found values are within specified tolerance, RECORD as-found values
      in as-left column of data sheet AND

      GO TO Section 5.3, Restoration.
5.2 Calibration

5.2.1 TURN slotted screw on bottom of pointer until pointer is in line with Zero.
5.2.2 REMOVE Zero and Span plugs from back of indicator housing.
5.2.3 MOVE indicator to scale mark representing 10% of maximum.
5.2.4 ADJUST Zero to 5.6 mADC.
5.2.5 MOVE indicator to scale mark representing maximum scale reading.
5.2.6 ADJUST Span to 20.0 mADC.
5.2.7 REPEAT Steps 5.2.3 through 5.2.6 until no further adjustments are required.
5.2.8 VARY input per PM/S data sheet AND RECORD as-left readings on data sheet.

5.3 Restoration

5.3.1 RESTORE to as-found conditions.
5.3.2 ENSURE alarms are reset or cleared.
5.3.3 INFORM SOM test is complete and instrument/equipment/system may be returned to service.

5.4 Acceptance Criteria

Acceptance criteria has been met when steps in this procedure have been satisfactorily performed and results are recorded on the data sheet(s).

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

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.

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.