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Adjust Trafag Series ISNT 11015 Temperature Switch

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for adjusting/verifying TRAFAG® Series, ISNT 11015 temperature switch setpoint.

1.2 Scope

This procedure applies to TRAFAG® Series, ISNT 11015 temperature switches.

2.0 INFORMATION

NONE.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

3.1.1 If a lock and tag is required during the performance of this procedure, comply with DOE-0336, Hanford Site Lockout/Tagout Procedure.

3.2 Radiation and Contamination Control

3.2.1 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 may be needed to perform this procedure:
- Controlled temperature bath/oven, Dri-Block Calibrator or equivalent
- Digital Multimeter.

4.2 Field Preparation

4.2.1 ENSURE Operations has configured system to allow performance of this procedure.

4.2.2 PERFORM lockout/tagout and overlocking requirements per DOE-0336, Hanford Site Lockout/Tagout Procedure.
5.0 PROCEDURE

5.1 Obtain As-Found Values

5.1.1 IF temperature element must be removed to obtain As-Found values, PERFORM the following:

5.1.1.1 IF rotating equipment is involved, SHUT DOWN all rotating equipment AND ENSURE applicable lockout/tagout and overlocking requirements have been satisfied.

5.1.1.2 IF potential for radiological contamination exists, PERFORM equipment survey prior to removal of equipment or component from its installed location.

5.1.1.3 IF temperature element is not in a well, ENSURE oil in tank is drained to below temperature element.

5.1.1.4 REMOVE temperature element.

5.1.1.5 INSPECT the following:
- Capillary tube
- Temperature bulb.

5.1.1.6 ENSURE the following are clean AND RECORD any deficiencies found in Comments section of Data Sheet.
- Temperature bulb
- Capillary tube.

5.1.2 INSTALL temperature bulb into controlled temperature bath/oven (dri-block calibrator).

5.1.3 INSTALL calibrated test thermometer or temperature indicating device into controlled temperature bath/oven.
5.1 Obtain As-Found Values (Cont.)

NOTE - Switch temperature operation point may be confirmed by the use of digital multimeter, interlock, or annunciator as applicable.

- Hi Alarm Setpoint is taken on increasing temperature, and Lo Alarm Setpoint is taken on decreasing temperature.

5.1.4 APPLY test input temperature specified by Data Sheet AND

MONITOR temperature as it nears setpoint.

5.1.5 RECORD setpoint value in As-Found section of Data Sheet.

5.1.6 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 Section 5.3.
5.2 Adjust Temperature Switch Setpoint

5.2.1 REFER to Figure 1 or Figure 2 for typical switch adjustment information.

5.2.2 APPLY test input temperature specified by Data Sheet AND
MONITOR temperature as it nears setpoint.

5.2.3 MANIPULATE test temperature AND
ADJUST switch to operate at setpoint per Data Sheet.

5.2.4 ALLOW test temperature to increase/decrease sufficiently to reset switch.

5.2.5 RE-APPLY test input temperature specified by Data Sheet AND
CHECK setpoint for tolerance.

5.2.6 IF setpoint is within tolerance per Data Sheet, RECORD As-Left setpoint on Data Sheet AND
GO TO Section 5.3.

5.2.7 IF setpoint is not within tolerance per Data Sheet, REPEAT Steps 5.2.1 through 5.2.6 until setpoint value is within tolerance,

OR

IF setpoint value cannot be brought into tolerance, NOTIFY FWS for resolution AND
STOP WORK until further directed.
5.3 Restoration

5.3.1 IF removing objects from dri-block calibrator (which may be extremely hot), DON appropriate PPE AND

USE caution to prevent injury or equipment damage.

5.3.2 IF temperature switch/element was removed, REPLACE the temperature switch/element at normal location.

5.3.3 IF Lockout/Tagout was installed, REMOVE per DOE-0336, Hanford Site Lockout/Tagout Procedure.

5.3.4 DISCONNECT AND REMOVE Test Equipment.

5.3.5 IF using the dri-block calibrator, WAIT until the calibrator has cooled down sufficiently AND

PLACE it back into its carrying case.

5.3.6 RETURN the equipment to the original configuration.

5.3.7 CLEAR OR RESET alarms.

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

5.3.9 RECORD all inspection activities and/or deficiencies on Data Sheet.

5.3.10 INFORM Operations that calibration activities are complete and system may be returned to desired configuration.
5.4 Acceptance Criteria

Acceptance Criteria has been met when 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 CONFIRM 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.

5.6 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 – Range Knob Adjustment and Switch Contact Layout

Adjustment of Range Knob (bezel-type or marking on housing)

A. Pull off the knob

B. Adjustment

Switch Contact Layout

Terminal 1: Entry phase
Terminal 2: Exit phase – heating
Terminal 4: Exit phase - cooling
Figure 2 – Adjustment of Types 471 and 472 (With and Without Locking Device)

Readjustment on the Temperature Setting Knob

Adjustment of Types 471 & 472 (with lock device)

Loosen and Turn Lock, Then Follow the Instructions "Readjustment on the Temperature Setting Knob."