

Field Service Bulletin – FSB #101109

Grounded Thermal Protectors

Product(s) Applied To:	<u>Fluoropolymer (PTFE) and Quartz heater tubes with model numbers containing one of the following thermal protector designators: P1, P2, P4, P5, P6, P7 and replacement thermal protectors sold with a PT or PQ item number prefix.</u>
Heater Model Number Prefixes Affected:	<u>HX, HXL, HXF, HXFL, HXO, 3HXO, 3HXOL, 3HX, 6HX, 9HX, HXOL, HXRL, HXSL and QM.</u>
Replacement Thermal Protectors Affected:	<u>PT-I/PQI, PTL-I, PT-II/PQII, PTL-II, PT-IM/PQIM, PTL-IM, PT-IH/PQIH and PT-IIM/PQIIM.</u>
Manufactured Between:	<u>December 15, 2009 - November 4, 2010</u>
Serial Numbers:	<u>SN2499 - SN103416, SN647743</u>

Reason:



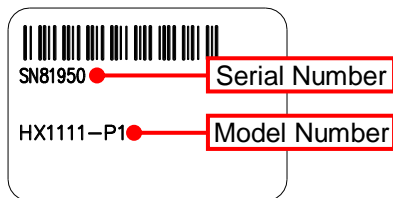
Some thermal protectors may not be properly grounded which could pose a severe electric shock or electrocution hazard to consumers.

Instructions for Field Inspection:

Estimated Time: 15 Minutes

1. Locate the heater's or the replacement thermal protector's serial number tag and confirm it meets the criteria listed at the top of the bulletin.

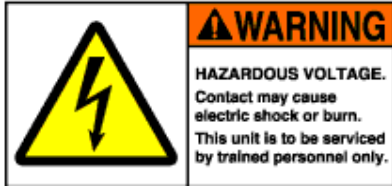
Note:



- On HX-Series heaters noted above, the serial number tag is located inside the heater's electrical junction box (Ref: Figure 1).
- On QM-Series heaters, the serial number tag is located on the exterior side of the junction box.
- On replacement thermal protectors, the serial # tag is located on the Warning label at the end of the protector's wire lead.

2. Remove power to the heater.

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Before servicing any electrical equipment, be sure you have followed standard safety procedures for your facility.
Make sure power is off and the electrical service disconnect is secured in the off position.

3. Remove the heater's junction box cover and retain for reuse.
4. Mark the insulation of the thermal protector leads at the point they exit the protector-well within the Heater Head. This mark will be used as a reference later to ensure proper reinsertion depth.



Failure to follow this procedure may result in a fire or heater burn-out.

5. Remove wire nuts secured to the thermal protector leads, noting where the wires are to be reconnected. Retain Wire Nuts for reuse.
6. Remove the electrical insulation putty from the thermal protector and retain for reuse.

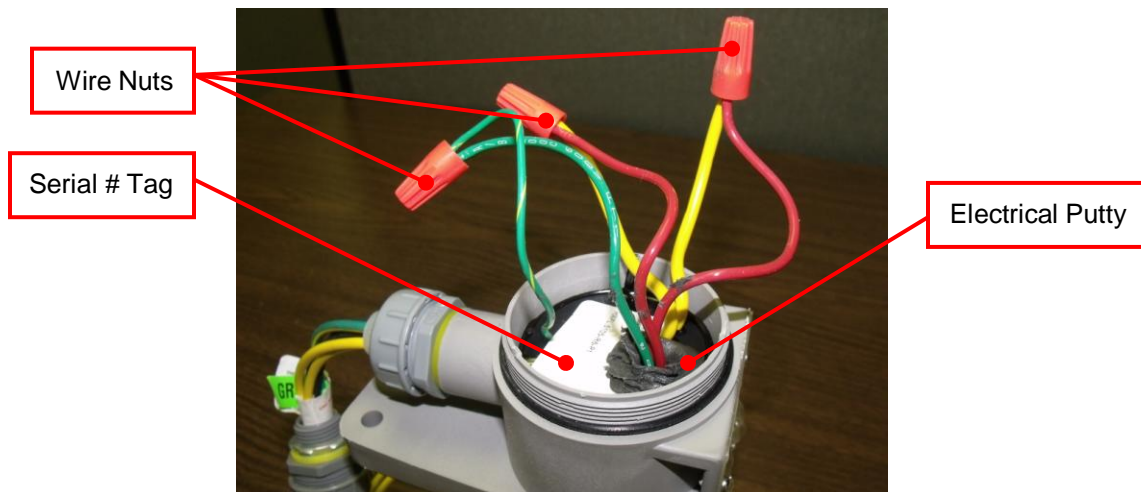


Figure 1: Typical Junction Box
(actual box and thermal protector wire colors may vary)

7. Gently remove the thermal protector by pulling the wires straight up and out of the protector-well.
Note: On Fluoropolymer (PTFE) series heaters, special care may be needed as to not damage the protector-well. **If you encounter difficulty removing the thermal protector, please contact the Process Technology Technical Service Department for assistance.**

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8. Once removed, use a multimeter to check for electrical continuity between the thermal protector's ground wire and the thermal protector's metal casing. Ref. Figure 2.

Note:

- If your meter has a continuity setting, (represented by a diode symbol ($\rightarrow|+$)), the meter will read "infinity" or "OL" (Open-Loop) if the circuit is open. A low reading (ex: .000) or an audible tone indicates the thermal protector has continuity.
- If using resistance to check for continuity, set the meter to the Ohm setting (represented by the " Ω " symbol). If there are multiple ohm options, set the meter to the X1 or 1X setting. If the meter reads "infinity" (∞) or "OL" (Open-Loop), the circuit is open. A reading close to zero (ex: .02 Ω) indicates the thermal protector has continuity.



Figure 2: Continuity Check Using Multimeter

Good Continuity

If a proper ground connection is detected, the thermal protector is considered to be good and can be reinstalled into the heater. Continue to Step 9.

No Continuity (Open Circuit):

If a proper ground connection is not detected, remove the heater from service immediately. Contact PROCESS TECHNOLOGY'S Customer Service Department at (800) 621-1998 or at info@process-technology.com for a Return Material Authorization (RMA) number and for a replacement thermal protector. Please have the heater's model and serial number available.

Note: Do not operate the heater with an ungrounded thermal protector or with the thermal protector bypassed. To do so may result in equipment damage, Fire, and/or personal injury or death.

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9. Before reinstalling either the good thermal protector or a new thermal protector, check that the heater's protector-well is dry by inserting a long wooden dowel or similar suitable device. If moist, thoroughly dry the protector-well using cloth swabs or other similar means. Ensure no material is left in the well. Once dry, ensure that no further moisture is seeping into the protector-well. If moisture reoccurs, **DO NOT RETURN THE HEATER TO SERVICE**. Contact the PROCESS TECHNOLOGY Customer Service Department for more information.
10. Insert either the good thermal protector or the new thermal protector into the dry, empty protector-well until it "bottoms out". Verify by feeling it through the protector tube or by using a push rod to ensure it is at the bottom of the well. The marks taken in Step 4, lined up with the top of the protector-well, will also indicate proper placement. If replacing a bad thermal protector, transfer the marks to the new protector. If the marks line up above the top of the protector-well, there is a possibility it has not been fully inserted.

Note: Using the heater without the thermal protector in the proper position will result in an unsafe operating condition. The Protector MUST be located at the bottom of the protector-well.
11. Reinstall the connecting wires using the saved wire nuts.
12. Reapply the electrical insulation putty. Seal the opening of the protector-well to prevent moisture from entering.
13. Examine and, if necessary, replace the Heater Head Cover, Head Gasket and, if provided, cover hold-down screws to ensure a moisture tight seal when reinstalled.
14. Reinstall the above assembly.
15. Examine conduit connection at heater head and repair, if necessary, to provide a liquid tight connection.
16. Return heater to normal operating service (reconnect power).