

WHITE PAPER: Better Predicting Terminal Enclosure Temperature to Improve Heater Reliability

By: - April 20, 2020

Summary

One of the most common failures in electric process heaters used in various industrial applications involves electrical terminations and not the heating elements. Engineers at Watlow® believe designers across the industry are underestimating the temperature profile from the heater flange to terminal enclosure in these thermal systems.

Download White Paper (/-/media/documents/white-papers/wp_predicting-enclosure-temp-reliability-0818.ashx?la=en&hash=7BC99C9EA189D7D73BE52F15A12C5D888A10CE85)

The image is a thumbnail for a white paper. At the top, there is a dark grey navigation bar with the text "white paper" repeated four times, separated by small white diamonds. Below this is a yellow banner containing the text "industry: energy processes" and "author: scott boehmer & mike bange" on the left, and the Watlow logo (a red diamond with a white 'W') and the text "WATLOW Powered by Possibility" on the right. The main content area has a light grey background. On the left side of this area, the words "subject:" and "summary:" are written in orange. The "subject:" text is followed by the title "Better predicting terminal enclosure temperature to improve heater reliability". Below the title is a decorative horizontal line with a small orange diamond in the center. The "summary:" text is followed by two paragraphs of black text. The first paragraph states: "One of the most common failures in electric process heaters used in various industrial applications involves electrical terminations and not the heating elements. Engineers at Watlow® believe designers across the industry are underestimating the temperature profile from the heater flange to terminal enclosure in these thermal systems." The second paragraph states: "Research into the impact of terminal pins, incoming electric supply cables, internal electrical wiring and heating element termination/bussing has shown dramatic levels of unexpected heat generation. This underprediction is leading to designs that will contribute to more rapid degradation and failure of heater electrical termination/bussing inside the terminal enclosure. Watlow engineers have a new temperature prediction tool based on extensive research and testing intended to guide design decisions to improve heater operation and minimize process downtime." At the bottom of the thumbnail is a yellow banner with a large, stylized orange diamond logo in the center.

(abcimg://Enclosure%20Temperatures%20%20White%20Paper%20Thumbnail)