

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.

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The image is a thumbnail for a white paper. At the top, there is a dark grey navigation bar with four white dots and the text "white paper" repeated four times. Below this is a yellow banner with 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, there are two labels: "subject:" and "summary:" in orange. The "subject:" label is followed by the text "Better predicting terminal enclosure temperature to improve heater reliability". Below this is a decorative horizontal line with a small diamond icon in the center. The "summary:" label is followed by two paragraphs of 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, there is a yellow banner with the Watlow logo in the center.

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