

Airflow Bulletin Update No. I

TO: DISTRIBUTORS OF WARREN ELECTRIC HEATERS

Since the original Airflow Bulletin (attached) was issued on February 6, 2009, the field is now realizing that the open service loops (fuse links) events on Warren heaters are, with rare exception, the result of low (insufficient) air flow in heat pump systems and *not* electric heater failures. Most of the troubled systems were identified, by tripping of the fuse links, within a week after the first cold weather in any given territory. The fuse links performed their intended function to de energize the heaters in low airflow conditions. Subsequent to these events it has been found by actual measurements on site that in many of these systems the airflow was between 25% to 75% *less* than that required for proper operation of both the heat pump and the electric heater.

Research has shown that low airflow in heat pumps is a major industry wide problem. One of the most common problems found in service work is **low airflow** across the indoor coil. A detailed description can be found on : <http://wayneshirley.wordpress.com/category/diagnosticsheat-pumps/> (pages 7&8). According to a report funded by ENERGY STAR, "more than 50% of all heat pumps have significant problems with airflow, leaky ducts, and incorrect refrigerant charge". There is also evidence that the recently marketed high- efficiency filters have been added to systems which cause high pressure losses and reduced airflows. More information to help identify and correct low airflow will be included in the next bulletin.

On service calls where the heaters fuse link(s) are open, and there is no detectable failure of the heater itself, it is an indicator that the system most likely has low airflow. Before replacing the fuse link(s) or heater, the system should be checked for low airflow. **Actual airflow measurements should be taken and compared to the required minimum airflow of the AHU manufacturer and adjustments should be made accordingly.** Those adjustments should include a safety factor to allow for filter "loading". As a final check, be sure that the heater automatic reset limit is not cycling on-off when full heat pump and electric heat are on. Systems where this was not done should be revisited to ensure proper system operation and prevent call backs in the future.

Thank you for your cooperation from the field. It has been very useful to help improve the industry. We appreciate any further information that you can provide and we can pass along.

Regards,
Ed Trout
Operations Manager
Warren Technology
305-556-6933 Ext. 103
Email: etrout@warrenhvac.com