Outlook

Life Expectancy

I recently had to replace the dishwasher in my kitchen at home. If you think there isn't much difference between the major brands when it comes to kitchen appliances, get ready to learn more than you might expect—or perhaps ever want to hear—from an aerospace executive. Happily, in this household drama there are only two combatants which should speed things along. The first is the company whose product I've just had to replace (I won't mention their name, but it rhymes with KitchenAid). And in the other corner we have Miele, the brand I should have bought in the first place.

What is your expectation when you purchase an appliance? Mine is that it will last a reasonable length of time before "end-of-life" kicks in and it starts leaking on the floor—say ten years or so. Now don't get me wrong, I appreciate just how harsh an environment the inside of a dishwasher can be—steaming hot water, mineral salts, detergents—and that its electronics and wiring are all packaged in tight quarters immediately adjacent to all the action. But four years? Come on.

Here is the point. The same thermal, mechanical, and electrical aging that sent my dishwasher to the scrap heap impacts the Electrical Wire Interconnect Systems (EWIS) our customers rely on for durable, life-of-system performance. Further, that material science (the business of selecting the right material for every component part—from contacts to insulators to connector shells to shields) is one of the biggest factors impacting durability and product life expectancy.

In our industry, critical systems are subject to a process the FAA and others describe as a "reliability assessment." When products are qualified for use, a power connector for example, certain key variables such as the Dielectric Withstanding Voltage of its insulator or Thermal Aging Factor of its environmental sealing are tested and analyzed to determine their suitability for use in the target environment. This issue of *QwikConnect* explores one of the most critical material types subject to this kind of assessment (plating). But of course, many dozens of other materials and processes must be exactingly selected and qualified for use in the range of harsh environments—from outer space to subsea—where our products are used.

My "reliability assessment" of my erstwhile dishwasher is that the plastic material used in component parts throughout the machine became prematurely brittle and cracked due to exposure to hard water and high heat. Ditto the many O-ring seals and gaskets. I guess when all is said and done, I might of saved a few hundred dollars on the initial purchase price of the appliance but ended up with a far more expensive "cost-of-ownership" given the product's woefully short life span.

At Glenair, we believe we have a responsibility to design and produce interconnect hardware that delivers reliable and durable service. We do this—in large part—by using only those materials, processes, and designs that have been painstakingly tested and qualified for use in mission-critical application environments by the regulators that govern our industry. Not to beat a dead horse, but it seems to me that the folks producing products for consumer markets are playing by a different set of rules. Thank God they don't make airplane parts.

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