

## Project Summary:

### Initial Assessment of Outdoor Condenser Controller

The circuit card assembly of an outdoor condenser controller was analyzed in order to identify any possible failure mechanisms and correct them. The components, board, solder joints and connectors were reviewed while the expected use environment and desired lifetime were considered. DfR Solutions recommended increasing humidity and bias exposure in the manufacturer's current qualification plan. Other recommendations included virtual qualification and further analysis of high current connectors.

Keywords: components, parts, printed board, solder joints, interconnects, connectors, materials, architecture, premature failure, design changes, accelerated testing, rigorous reliability analysis, single sided, outdoor, 15 year lifetime, heating, cooling, active, passive, relays, electrolytic capacitors, fuses, critical to quality parameters, CTQ, ripple current, oxide thickness, relative surge rating, no-clean flux residues, conformal coating, virtual qualification, non-conductive material, tin oxide, masking, sealed switches, gold-plated, capacitors, voltage, vibration loads, temperature rise, high current relay, thermal cycle