

## Project Summary:

### Root-Cause Analysis of IC Field Failures

DfR Solutions was asked to perform root-cause analysis of failed printed boards used in flow meter units. Optical inspection showed no red phosphorus, but further analysis of the potting material showed cracks in the potting material were filled with conformal coating. Recommendations for improvement to the design included fully curing the conformal coating before applying potting and to increase spacing between board edge and case wall. These changes should greatly decrease the rate of field failures.

Keywords: flow meter units, printed board, transceiver chip, red phosphorus, voltage spike, gray potting, conformal coating, curve trace, electrical testing, signal pins, transient energy rating, energy of discharging impulse, telemetry, PCB close to case, dangerous pulses, replacement of protection block, protection schematics, overvoltage