

ME4000 2006-2007



Titan-40w Automation



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1 Front Matter



1.1 Executive Summary

The company EFI Electronics is a design, manufacturing, and testing facility that builds surge suppression devices for various applications. One of their products, the Titan-40w, is designed to protect a building from electrical surges. These buildings, usually commercial, utilize a large scale 3-phase power system.

While building the Titan-40w, a test is completed to make sure that it will ground a 3-phase electrical surge. In the event of an electrical surge, the Titan-40w will ground the charge, saving the remainder of the building's electronics. The current testing procedure involves an operator going step-by-step testing each phase, including full-power-up. This procedure is time consuming and can involve operator error.

The goal for Team EFI is to redesign both the Titan-40w's *test procedure* and its *test fixture*, making them completely automated. This will eliminate operator error as well as save more time for the operator to continue building the product. The test fixture will also record results and notify the operator of the results of the test.

The Titan-40w project will incorporate the results of each test into a quality control system. EFI has a strong need for quality control in order to guarantee a working and reliable product. Saving and analyzing the results of each test will help ensure this. This can be done either by saving the results to a memory file or by attaching them directly to the product. Team EFI will evaluate these different methods and decide how best to incorporate the test results.

The Titan-40w Cell Redesign project will focus on improving the test quality of the Titan-40w. The improvements will be made in accuracy, time savings, result reporting, and safety. It is the goal of Team EFI to complete the project by the Spring '07 semester, and to produce a product that can be applied to other products and testing procedures at EFI.

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