

Ideals for Electrical Manufacturers

Sotcher Measurement Inc. can assist appliance manufacturers by offering products that contain some combination of the features listed below. The list should be useful when planning new or revised manufacturing facilities.

Work Cells

When the concept of just-in-time inventory is important to your operation, manufacturing cells should be considered. Cells allow immediate feedback if a problem develops and promotes a strong team spirit. Individual test stations can be provided as stand alone testers or networked to a host computer.

Connect Once Only

To achieve the fastest test cycle time, with lowest operator fatigue, perform all tests with a single connection. With careful design of the test area the operator can plug in the product once and perform any cycle tests, safety tests and performance tests.

Run-in

If the product is a motor driven or a heating appliance, a run-in period may be desired. If so, design the test area so the product remains connected from run-in through final test. Automatic circuits can be used to control the timing period. A turntable with rotating receptacles may improve efficiency.

Mixing Domestic and Exported Products

Appliances for North American and the International market are manufactured and tested in the same cell by using quick change test receptacles. An outlet strip containing the various receptacles may be used. The test station can furnish the proper voltage to each. The correct frequency can be supplied if necessary.

Teach the Tester

If you manufacture products such as hair dryers or fans but the product mix changes frequently, use a special feature that teaches the tester. A good sample product is cycled through its various speeds and heat settings. The tester measures the results and uses them, (with tolerances applied), as test parameters to test similar products. Safety tests such as dielectric strength are not affected.

Central Data Collection Point

Networking all test stations within a product group to a host computer allows all test data to be retained at a single point. This supports your data acquisition and statistical process control efforts.

Central Control of the Test Parameters

Networking test stations insure that uniform test parameters are applied to all products.

Bar Coding of Products

If bar codes are available on the products, they provide an ideal way of programming the test station for the proper series of tests.

Dielectric Testing of Powered Products

If the product contains safety circuits, or if a minimum total test cycle time is desired, simultaneous testing should be considered. This feature allows the product to be in operation during the performance of the dielectric test.

Ground Verification

For operator safety, a second test circuit verifies that the frame of the product is held at a true ground potential whenever power is applied.

Ground Fault Circuit Interrupters

When a product is plugged in the first time, or the operator is required to make adjustments to the electrical circuit, the use of GFCI's should be considered. Full time ground fault interrupter circuits protect the operator, should they contact the electrical circuit.

Short Circuit Detection

With the initial application of power to a product there is always a possibility that the input power line to the product is short-circuited. To protect the operator and the product, a short circuit detector can be used. It operates faster than a circuit breaker and its level can be an adjustable test parameter.

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Audit Station

When a high volume of appliances is being manufactured and tractability of each product is not required, an audit station becomes a practical solution. Basic test stations without data acquisition is used in the manufacturing cells. A single audit station is used to test samples from the line. The audit station has extended test capacity and provides statistical analysis of the data for quality control.

Long Term Cycle Testing

A complete quality monitoring system calls for life cycle testing. Cycle test stations allow continuous testing while monitoring and recording critical parameters. Automatic controls assure functional tests are performed on schedule and out of tolerance products are turned off. The automatic data collection system provides MTBF data as well as statistical analysis of the product's performance.

Tracing Repair Actions

If a total product history is desired, repair actions and audit results on non-conforming products can be recorded. These can be traced to the affected product by model and serial number.