



Document Q410

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PHO-TRONICS Quality Manual

Pho-Tronics, Inc. (Pho-Tronics) has developed a quality management system described in this quality manual, and the associated procedures and work instructions, to be compliant to ISO 9001:2008. Utilizing this quality management system, Pho-Tronics intends to follow a path of continuous improvement. All Pho-Tronics employees are required to follow the procedures referenced in Pho-Tronics quality management system documentation.

DOCUMENT APPROVAL

Signature: _____

Name: Paul Godbout
Title: CEO/President
Date: 10/6/09

Signature: _____

Name: Jeff Godbout
Title: Executive Vice President
Date: 10/6/09

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Quality Manual Maintenance and Control

The primary objective of the quality manual is to document the quality management system of Pho-Tronics. The Management Team Members will review this manual at least once per year. The review committee is comprised of:

- CEO/President
- Executive Vice President
- General Manager
- Quality Manager
- Engineering Manager
- Production Manager

The Quality Manager will ensure proper document control of the revised Quality Manual (where appropriate).

Quality Manual Distribution:

The Quality Manager will maintain the Quality Manual approved master copy. A soft copy will be accessible as a "Read Only" online document on a shared drive and "Controlled Copies" are under distribution control and available to other team members. Copies of the Quality Manual given to customers and other interested parties are identified as "Uncontrolled Copy".

The Pho-Tronics Quality Manual conforms to American National Standards Institute/American Society for Quality ANSI/ISO/ASQ Q9001:2008 Quality Management Standard.

In keeping with the philosophy that quality is an integral part of our business plan and structure, we adopted this ISO standard to emphasize our commitment to the development and improvement of our quality management system. We shall supply products that meet or exceed customers' expectations and requirements.

We realize the need to effectively implement and continuously improve our quality management system in accordance with ISO 9001:2008 to maintain the highest level of quality.

The Management Representative is responsible for ensuring that the quality management system is established, implemented and maintained.

It is essential that we remain focused on the customer's needs and requirements to ensure their total satisfaction in the use of our product in order to achieve our business goals.

The sections of this quality manual define the methodology we utilize to adhere to ANSI/ASQ/ISO 9001: 2008.

Permissible Exclusions

List all Exclusions here i.e.

Pho-Tronics does not perform any Design and Development activity. Section 7.3 (Design and Development) of ISO 9001:2008 is therefore excluded from the quality management system.

Pho-Tronics can verify the resulting output of all processes through inspections and verifications, therefore section 7.5.2 from the ISO 9001:2008 standard was excluded from the quality management system.

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QUALITY MANAGEMENT SYSTEM

General Requirements

Pho-Tronics has established, documented, implemented, and will maintain a quality management system and continually improve its effectiveness with the requirements of ISO 9001:2008

Pho-Tronics quality management system is based upon the eight quality management principles:

⊙ Customer Focus

We depend on our customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

⊙ Leadership

Leaders establish unity of purpose and direction of our organization. They create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

⊙ Involvement of people

People at all levels are the essence of our organization and their full involvement enables their abilities to be used for the organization's benefit.

⊙ Process approach

A desired result is achieved more efficiently when activities and related resources are managed as a process.

⊙ System approach to management

Identifying, understanding and managing interrelated processes as a system contributes to our organization's effectiveness and efficiency in achieving its objectives.

⊙ Continual improvement

Continual improvement on our organization's overall performance is a permanent objective of the organization.

⊙ Factual approach to decision making

Effective decisions are based on the analysis of data and information.

⊙ Mutually beneficial supplier relationships

Our organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

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This is demonstrated by our commitment to:

- Identify the processes needed for the quality management system and their application throughout the organization,
- Determine the sequence and interaction of the processes,
- Determine criteria and methods needed to ensure that both the operation and control of these processes are effective,
- Ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- Monitor, measure and analyze these processes, and
- Implement actions necessary to achieve planned results and continual improvement of these processes.

The following processes have been identified as critical to our quality management system and their sequence and interaction in the quality management system is shown in [QP400-1](#). In addition to identifying these processes top management has established measurable quality objectives for critical processes. A list of the active objectives may be found in Appendix 'C'.

List critical processes here:

- CHEMICAL ANALYSIS OF CHEMISTRIES AND CHEMICAL BATHS
- AUTOMATED OPTICAL INSPECTION OF INNER LAYERS
- ELECTRICAL TEST
- FINAL INSPECTION

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4 Documentation Requirements

4.1 General

The general principle of the quality manual is that the documentation of the quality management system shall be sufficient to ensure effective and consistent operations of the system.

The quality management system documentation includes:

- Documented statements of a quality policy and quality objectives,
- A quality manual,
- Documented procedures required by ISO 9001:2008,
- Documents needed by Pho-Tronics to ensure the effective planning, operation and control of its processes such as Departmental Procedures, Forms, Logs and Specifications,
- Both hardcopy and electronic records required by ISO 9001:2008.

4.2.2 Quality Manual

At Pho-Tronics, the Quality Manual is the cornerstone of our quality management system. The Quality Manual, issued and controlled by Pho-Tronics, defines the Quality System that is effective across all disciplines and at all levels within the company. Documented procedures necessary to meet the specified policies and methodologies utilized by Pho-Tronics are referenced in the applicable sections and paragraphs. The interaction between the processes of the quality management system is described in Appendix B and C. The methodology for operating the interrelated processes constituting our quality management system is the Plan-Do-Check-Act cycle illustrated below:



4.2.3 Control of Documents

Pho-Tronics identifies and controls documents and data in any media that relate to the requirements of ISO 9001:2008. The control of these documents is performed in accordance with [QP400](#) this procedure addresses the following requirements:

- Review and approval of documents for adequacy prior to issue,
- Frequency for review and revision of documents, including the processes for re-approval and re-issuing of documents,
- Identification of the current revision status of documents,
- Tracking and controlling distribution of applicable documents to ensure that relevant versions are available at points of use,
- Legibility, identification and retrievability of quality management system documents,

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- Identification and control of documents originating externally to Pho-Tronics ,
- Identification and/or destruction of obsolete documents to prevent their unintended use.

A master list indicating the current revision levels of documents and their status is maintained by the QA Manager and is available for reference by Pho-Tronics Staff members.

Applicable Procedures:	
QP400	Quality Documentation System
Q420	Control of Documents

4.2.4 Control of Records

Pho-Tronics quality management system is documented through the use of records:

- They provide assurance that the quality requirements for the products were satisfied,
- They show the degree of implementation and success of our quality management system,
- They provide a basis for measurement and feedback essential for continual improvement.

Records are controlled ensuring the proper identification, storage, retrieval, protection, retention time and disposition of quality records.

Applicable Procedures:	
Q430	Control of Records

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5 MANAGEMENT RESPONSIBILITY

5.1 Management Commitment

The commitment to the development and improvement of the quality management system by Pho-Tronics top management is reflected in our company's quality policy and objectives. Pho-Tronics commitment to meeting customer needs and regulatory/legal requirements is clearly embodied in our quality policy and objectives. The quality policy and objectives are displayed openly as a sign of our pride and commitment, and as a clear reminder of our vision and direction. This information is also presented to new employees in our quality awareness training, and is continuously reinforced by management to ensure understanding and commitment at appropriate levels within our company.

Pho-Tronics top management is dedicated to the development of the quality policy and quality objectives as described in section 5.3 and 5.4.1.

Pho-Tronics Technology Group is a team of representatives that have the responsibility to provide analysis, input and direction for all issues to be addressed by the company, both now and in the future. The team is responsible for providing input to the management review process as well as resource management representatives as described in section 5.4.2

Management reviews are conducted according to section 5.6

Pho-Tronics top management ensures the necessary resources are available according to, Section 5.4 (Planning), Section 5.6 (Management Review), and Section 6.0 (Resource Management).

5.2 Customer Focus

Top Management at Pho-Tronics ensures that the customer and consumer needs and expectations are determined, converted into requirements, and are achieved according to the following sections:

- Determination of requirements related to the products: section 7.2.1,
- Review of requirements related to the products: section 7.2.2,
- Customer satisfaction: section 8.2.1,
- Monitoring and measurement of product: section 8.2.4.

Pho-Tronics top management ensures, through management reviews and communication with our employees, that customer satisfaction is a continuous focus of our efforts.

5.3 Quality Policy

Pho-Tronics quality policy is displayed openly as a sign of our pride and commitment, and as a clear reminder of our focus and direction.

Quality Policy is as follows:

THROUGH CONTINUOUS QUALITY IMPROVEMENT, EXCEED THE EXPECTATIONS OF OUR CUSTOMERS FOR TOTAL VALUE

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The quality policy is communicated at all levels in the organization via new employee orientation and on-the-job exposure to the quality management system. Verification of understanding is assessed as part of the quality management system through internal quality audits. On-going communication is accomplished via:

- Posters /postings
- Employee presentations and training

The quality policy provides a framework for establishing and reviewing quality objectives. The periodic review of the policy determines its continuing suitability and consequently the improvements for the continuing relevance with new or modified objectives.

5.4 Planning

5.4.1 Quality Objectives

Top Management, at its management review, establishes a list/matrix of measurable quality objectives. The associated metrics allow the progress towards the attainment of objectives to support the quality policy. This also ascertains whether the objectives have been reached. Percentages, comparative indicators, scoring/ratings and their applicability to performance, demonstrates measurements.

For a current list of the objectives see Appendix C.

5.4.2 Technology Group

The Technology Group is a management team comprised of representatives from various disciplines within the organization and serves as one of the inputs to the management review.

The Technology Group will be comprised of members that:

- Represent one or more of the following interests:
 1. Executive Management
 2. Preproduction Engineering
 3. Production Management
 4. Quality Assurance
- Have management level decision making authority
- Have a high level industry and process understanding
- Have a strategic level perspective
- Have a fundamental understanding of the importance of communication, the role of leadership action and competence in creating the appropriate climate for change

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5.4.3 Quality Management System Planning

It is the responsibility of the management team to ensure, during the management review, that quality planning is executed at Pho-Tronics. Quality planning is performed to ensure that the necessary resources are available to achieve the quality objectives. Quality planning assesses the following:

- That planning of the quality management system is carried out in order to meet the requirements given in section 4.1 as well as the quality objectives,
- The integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

For each listed objective there is a specific quality plan on how Pho-Tronics is to meet that objective. For the current list of objectives and quality plans reference Appendix C.

At the Management Review Meeting, Upper Management along with department managers may establish project or department specific quality plans. These plans will be listed in the procedure format and noted on the master list as a specific quality plan.

5.5 Responsibility, Authority and Communication

5.5.1 Responsibility and Authority

The organization chart, Appendix A, summarizes how Pho-Tronics is structured to ensure the responsibilities and authorities are defined and communicated within the organization. Along with Appendix A, within each procedure the responsibilities are laid out for the respective procedures.

Responsibilities:

The Quality Manager is the Management Representative.

The Management Representative oversees the ISO 9001:2008 program.

All departments are responsible for development and maintenance of ISO 9001:2008 level 2 and level 3 documentation and for documenting product non-conformances and initiating and completing corrective actions.

Authority for executing the requirements resides with the respective supervisors of the departments.

5.5.2 Management Representative

The Management Representative ensures that the quality management system meets or exceeds the requirements of ISO 9001:2008, reports the quality management system performance to the management team, and ensures the promotion of awareness of customer requirements throughout the organization through departmental meetings and quality plans for each contract/order.

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The Management Representative is also obligated to communicate and provide evidence of such communication to the organization, the importance of:

- Meeting and exceeding customer requirements,
- Appropriate quality plans,
- The quality objectives.

The communication can be conveyed via the same modes described above for the quality policy.

5.5.3 Internal Communication

Employees at Pho-Tronics have sufficient authority and the organizational freedom to identify, document, and communicate any issues related to the processes of the quality management system and their effectiveness. Forms of communications shall be as follows:

- Employee meetings
- Periodic meetings with departments supervisors
- Corrective and preventive action requests
- Engineering change notice requests

5.6 Management review

5.6.1 General

A management review meeting shall be held semi-annually.

The CEO/President shall chair all management review meetings. The Managers, who directly report to the CEO/President per the organizational chart in Appendix A, or their designee, shall attend all management review meetings. At the management review meetings the Management Representative shall report on the performance of the quality management system, along with the recommendations/directives of the Technology Group and other opportunities for improvements and need for changes, to ensure the current suitability and effectiveness of the quality management system is satisfying the requirements of ANSI/ASQ/ISO 9001:2008. The Management Representative or his/her designee shall maintain records of each review.

5.6.2 Review Input

- Feedback and input from the Technology Group
- Data analysis on customer feedback
- Results of internal and external audits
- Status of preventive and corrective actions
- Data analysis on vendors and subcontractors
- Quality plans for any non-routine project or contract
- Data analysis on product conformity to requirements

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- Data analysis on characteristics and trends of processes
- Planned changes that could affect the quality management system
- Records for demonstrating product and process conformance
- Follow-up actions from earlier management reviews
- Resource requirements for product realization.
- Recommendations for improvement
- Training effectiveness
- Quality objectives
- Quality Policy

5.6.3 Review Output

The outputs from the management review shall include any decisions and actions related to:

- Action items identified by the Technology Group
- Improvement of the effectiveness of the quality management system and its processes,
- Improvement of products related to customer requirements,
- Resource needs.

Applicable Procedures:	
Q500	Management Review
QP500	Management Responsibility

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6 RESOURCE MANAGEMENT

6.1 Provision of Resources

The resource requirements for the implementation, management, and continual improvement of the quality management system and activities necessary to address customer satisfaction are explicitly defined in our procedures, work instructions, and the following sections of our quality manual:

- Planning- section 5.4,
- Technology Group- section 5.4.2
- Management review- section 5.6,
- Planning of product realization- section 7.1,

6.2 Human Resources

General

Pho-Tronics has identified various in-house verification activities including inspection of incoming products such as new application installs, and in-process verifications, and the personnel responsible for carrying out these activities in order to meet customer satisfaction. Personnel performing the above mentioned activities shall be competent on the basis of appropriate education, training, skills and experience.

Procedures for carrying out verifications of processes and products, and assessment of the quality management system, have been developed and implemented. Personnel independent of the activity being audited conduct audits of the quality management system.

Competency, Awareness & Training

The management team has determined the necessary competence for personnel performing activities affecting product quality, and shall provide training for them. Through out this training, personnel are made aware of the importance of their activities and how they contribute to the achievement of the quality objectives. Training records for each employee shall be maintained.

Pho-Tronics has determined the necessary competence for personnel performing work affecting product quality as well as Awareness and Training procedures through HR010 and HR020.

Applicable Procedures:	
HR010	Personnel Qualification and Training
HR020	Employee Orientation

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6.3 Infrastructure

To ensure that our facilities are suitable to create conforming products, critical components (i.e. machines, equipment, etc.) are identified and maintained in the procedures listed below. Each supervisor and manager assesses the facilities in their area(s) of responsibility to ensure that the conformity of products can be achieved. Each facilities assessment determines the following:

- Facilities needed to achieve product conformity, including workspace and associated utilities, equipment, and supporting services,
- The ability of the facility to achieve products conformity,
- Necessary facility improvements.

All network files are systematically secured, backed-up and protected from viruses.

Applicable Procedures:	
MT010	Preventive Maintenance (Equipment and Facilities)
MT020	Lockout/Tag out program

6.4 Work Environment

It is the responsibility of each manager to identify and manage both the human and physical factors of the work environment that are necessary to achieve conforming products. At Pho-Tronics such factors include, but are not limited to, the following:

- Safety
- Heat and Humidity
- Light
- Space
- Cleanliness

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7 Product Realization

7.1 Planning of Product Realization

Pho-Tronics has planned and developed processes needed for product realization. They are as follows:

- Quality objectives - reference section 5.4
- Requirement for the product - reference sections 7.2.1 and 7.2.2
- Product specific processes, documents and resources - reference section 7.5.1
- Product specific verification, monitoring, inspection and test activities - reference section 8.2.4
- Records needed to provide evidence that the realization processes and resulting products meet requirements - reference section 4.2.4

Applicable Procedures:	
PE010	Planning of Product Realization

7.2 Customer Communication

Pho-Tronics seeks to identify and anticipate customer requirements. Pho-Tronics shall research customers' needs and expectations, customer feedback, conduct surveys, analyze trends.

Applicable Procedures:	
Q810	Customer Satisfaction

7.2.1 Determination of Requirements Related to the Product

Pho-Tronics shall determine requirements specified by the customer, including the requirements for delivery and post-delivery activities through contract review prior to the acceptance of the contract. Pho-Tronics shall continually evaluate requirements not stated by the customer but necessary for specified use or known intended use along with the statutory and regulatory requirements related to the products and any additional requirements determined by Pho-Tronics.

Applicable Procedures:	
S100	Quoting Process
S200	Sales Order

7.2.2 Review of Requirements Related to the Product

7.2.2.1 General

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The process of the determination and review of requirements related to the products shall be accomplished through the contract review process.

7.2.2.2 Review

Prior to the acceptance of a sales order, the bid or order shall be reviewed to ensure that:

- The requirements are adequately defined and documented;
- Orders received by verbal means shall be documented and agreed before final acceptance;
- Any requirements differing from those in the accepted order and those in the bid are resolved and records kept in the form of concessions, waivers and deviations.
- The facility has the capability to meet the accepted sales order requirements.

Applicable Procedures:	
S100	Quoting Process

7.2.2.3 Amendment to Sales Orders

Amendments to sales orders are documented, reviewed, and approved in accordance with documented procedures. The amendment can come from customer requests, or can be internally driven such as a change in quantity, delivery date or product specification.

The concerned internal organizations shall be consulted, when necessary for capability determination, and receive notification of the final amendment.

Applicable Procedures:	
S200	Sales Order Processing

7.2.3 Customer Communication

Pho-Tronics will put in place effective customer communications channels, to allow dialogue regarding product information, questions about contracts, order handling, changes, and receiving customer feedback, including complaints.

. Pho-Tronics handles all customer satisfaction issues in accordance with Q810.

Applicable Procedures:	
S200	Sales Order Processing

7.4 Purchasing

The Pho-Tronics purchasing system includes procedures that define methodologies for the assessment of vendors, the control of purchasing information, and verification of conformance of purchased product.

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7.4.1 Purchasing Process

A list of acceptable critical vendors is maintained and controlled and constitutes an approved suppliers [list](#).

Vendors are selected and/or evaluated based on their ability to meet product requirements and specifications.

The extent of the control of the vendors is dependent on the type of product provided and the importance of the products; or the quality of the final product; on available quality audit reports, and on records of the vendors previously demonstrated capability, conformance and performance to the planned arrangements. Records of acceptable vendors shall be established and maintained with an approved vendor's list.

7.4.2 Purchasing Information

Purchasing documents are maintained to provide a record of items purchased; quantities, and purchase dates.

Purchasing information shall clearly describe the product being ordered, including where appropriate:

- Requirements for approval of product, procedures, processes and equipment,
- Quality management system requirements.

Pho-Tronics shall ensure the adequacy of specified purchase requirements prior to their communication to the supplier in accordance with the following procedures.

Applicable Procedures:	
PC010	Purchasing
PC020	Qualified Supplier System

7.4.3 Verification of Purchased Product

Pho-Tronics shall verify all purchased products to assure that they meet specified purchase and regulatory requirements in accordance with procedure RC020.

The purchase order documents shall specify verification requirements if we choose to verify purchased products on the subcontractor's premises.

When specified in the sales order, we shall arrange for our customer the right to verify the product at the sub-contractor's premises. The purchase documents shall impose these verification requirements on the subcontractor, if applicable. Outside services performed will be inspected against the requirements stated on the purchase order.

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Verification by the customer does not absolve Pho-Tronics of the responsibility to provide acceptable product, nor does it preclude subsequent rejection by the customer.

Applicable Procedures:	
RC020	Receiving Inspection
RC010	Receiving

7.5 Production and Service Provisions

7.5.1 Control of Production and Service Provision

Pho-Tronics identifies and plans the production processes for executing control on the operations. Controlled conditions considered shall include the following:

- The availability of information that describes the characteristics of the product,
- The availability of work instructions in the form of departmental procedures,
- The use of suitable equipment,
- The availability and use of monitoring and measuring devices,
- The implementation of monitoring and measurement, and
- The implementation of release, delivery and post-delivery activities.

The production shall be planned and carried out under controlled conditions in accordance with a series of proprietary work instructions.

7.5.2 Validation of Processes for Production and Service Provision

Pho-Tronics shall validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement. This includes any processes where deficiencies may become apparent only after the product is in use or the service has been delivered. Validation shall demonstrate the ability of the processes to achieve planned results. We shall establish arrangements for these processes including, as applicable:

- defined criteria for review and approval of the processes
- approval of equipment and qualification of personnel
- use of specific methods and procedures
- requirements for records and
- revalidation

Applicable Procedures:	
Q841	Process Validation Guidance
Q420	Document Control
HR010	Personal Training & Qualification
Q430	Control of Records

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7.5.3 Identification and Traceability

Product identification and traceability will be maintained throughout the product realization process in accordance with receiving, production and delivery related procedures. Identification and traceability of raw materials in the stockroom is documented in RC020.

Product inspection and test status, with respect to required measurement and monitoring requirements, information is also provided through the nonconforming material reports and inspection/test records, which indicate the conformance or nonconformance of the product with regard to the inspections and tests performed.

The status is maintained throughout the production cycle to ensure that only product that has passed the required inspections and tests are delivered to the customer.

Applicable Procedures:	
Q709	Product Traceability

7.5.4 Customer Property

Pho-Tronics shall exercise care with customer property including customer intellectual property while it is under our control. We shall identify, verify, protect and safeguard customer property provided. If any customer property is lost, damaged or otherwise found to be unsuitable for use, it shall be reported to the customer and records maintained.

7.5.5 Preservation of Product

Preservation of product shall be established and maintained for handling, storage, and delivery of the product. Methods shall be established to prevent damage or deterioration of the product during handling operations.

Applicable Procedures:	
SH010	Packaging & Shipping

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7.6 Control of Monitoring and Measuring Devices

Pho-Tronics has determined the monitoring and measuring devices needed to provide evidence of conformity of product to determine requirements.

Pho-Tronics has also established processes to ensure that monitoring and measurement activities can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

Where necessary to ensure valid results, measuring equipment shall:

- Be calibrated or verified at specified intervals or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded;
- Be adjusted or re-adjusted as necessary;
- Be identified to enable calibration status to be determined;
- Be protected from damage and deterioration during handling, maintenance and storage.

Applicable Procedures:

Q760

Control of Monitoring & Measurement Devices

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8.0 MEASUREMENTS, ANALYSIS AND IMPROVEMENT

8.1 General

Pho-Tronics is committed, through the use of factual data, to planning and implementing the measurements, analysis, monitoring, and improvement processes needed for the following:

- To demonstrate conformity of the products,
- To ensure conformity of the quality management system, and
- To continually improve the effectiveness of the quality management system.

8.2 Measurements and Monitoring

8.2.1 Customer Satisfaction

Customer Satisfaction is measured using customer surveys, ratings related to customers perception of quality and delivery and the data analyzed in accordance to Q840. The information on customer satisfaction shall be used as one of the measurements of the performance of the quality management system.

8.2.2 Internal Audits

Pho-Tronics shall conduct internal audits at planned intervals to determine compliance to documented work instructions.

Personnel independent of those that have direct responsibility for the work center being audited shall perform audits.

The scheduling of audits shall be on the basis and importance of the activity to be audited. Management personnel responsible for the audited activity shall take timely corrective action on deficiencies found during the audit.

The implementation and effectiveness of the corrective action taken shall be recorded and subsequently verified during follow-up audit activities.

Internal audits and follow-up audit reports and Corrective Action Requests (CARs), shall be retained as a quality records.

Applicable Procedures:	
Q820	Internal Process Audits
Q821	Product Audits
Q822	Quality System Audits

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Pho-Tronics shall conduct internal audits at planned intervals to determine whether the quality management system:

- Conforms to the planned arrangements, to the requirements of ISO 9001:2008 and to the quality management system requirements established by the organization, and
- Is effectively implemented and maintained.

Personnel independent of those that have direct responsibility for the work center being audited shall perform audits.

The scheduling of audits shall be on the basis and importance of the activity to be audited. Management personnel responsible for the audited activity shall take timely corrective action on deficiencies found during the audit.

The implementation and effectiveness of the corrective action taken shall be recorded and subsequently verified during follow-up audit activities.

Internal audits and follow-up audit reports and Corrective Action Requests (CARs), shall be retained as a quality records.

Applicable Procedures:	
Q822	Quality System Audits

8.2.3 Monitoring and Measurement of Processes

Processes used for Product Realization are monitored and measured through inspections, testing and verifications according to the applicable work instructions. Pho-Tronics monitors performance of manufacturing process (key characteristics) to demonstrate compliance with customer requirements for quality. When planned results are not achieved, corrective actions and improvement actions are taken to ensure conformity of the products.

8.2.4 Monitoring and Measurement of Product

Monitoring and Measurement of products shall be established and maintained to ensure that specified requirements for the products are met.

Measuring and monitoring results verify the acceptability of products. Product is held until required measurement and tests have been performed and completed.

No product shall be dispatched until all activities specified for measurement and monitoring have been completed and accepted, and the associated data and documentation is available, validated and approved. Evidence of conformity to acceptance criteria is maintained as quality records.

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Pho-Tronics shall monitor and measure the characteristics of the product through inspections and testing to verify that the product requirements are fulfilled in accordance with specified requirements and specifications. The inspection and testing process is documented in receiving, and production procedures and in the following applicable procedures:

Applicable Procedures:	
Q703	Inner Layer Inspection (AOI)
Q711	Final Inspection
ET030 & ET040	Electrical Test & Probot Test
Q713	Microsection Lab

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8.3 Control of Nonconforming Product

8.3.1 General

Pho-Tronics shall ensure that product which does not conform to requirements is identified and controlled to prevent unintended use or delivery.

8.3.2 Review and disposition of non-conforming product

Pho-Tronics defines the personnel that have the responsibility and authority to review and authorize disposition of non-conforming products.

Non-conforming products disposition may be accomplished:

- a) By taking rework/repair actions to correct the detected nonconformity,
- b) By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer,
- c) By taking action to scrap the product as defective and unable to be reworked or repaired.

The proposed use of products that do not conform to requirement is reported for concession/waiver/deviation to the relevant authority or the customer. The description of the nonconformity that has been accepted and of any reprocessing, is recorded to define the actual condition, and is retained as a quality record.

Reworked or repaired products are re-verified in accordance with existing procedures.

Applicable Procedures:	
Q830	Control of Nonconforming Product
Q831	Repair and Modification of Printed Circuit Boards

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8.4 Analysis of Data

Data from the following areas are required to determine the effectiveness of the quality management system and to identify where improvements can be made.

- Customer Satisfaction
- Defect Trends
- Statistical Control of key characteristics of processes
- Management Review Inputs

This data shall be in accordance with the quality objective metrics and the management review shall determine whether Pho-Tronics has met the planned performance levels.

It shall be the Management Representative's responsibility to ensure that all data accrued is analyzed and reported to the management team for continual improvement purposes.

Applicable Procedures:	
Q840	Statistical Data Analysis
Q810	Customer Satisfaction

8.5 Improvement

8.5.1 Continual Improvement

The quality policy, objectives, defect trends, audit results, analysis of data, corrective and preventive actions and management reviews contribute to the planning for continual improvements. The department supervisors may recommend improvement activities but the Continuous Improvement Director has the overall responsibility for executing the activity.

Applicable Procedures:	
Q870	Continuous Improvement

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8.5.2 Corrective Action

Pho-Tronics shall take action to eliminate the cause of nonconformities in order to prevent recurrence. Corrective actions shall be appropriate to the effects of the nonconformities encountered. A documented procedure shall be established to define requirements for:

- a) reviewing nonconformities (including customer complaints),
- b) determining the causes of nonconformities,
- c) evaluating the need for action to ensure that nonconformities do not recur,
- d) determining and implementing the action needed,
- e) records of the results of action taken, and
- f) reviewing of corrective action taken.

Applicable Procedures:	
Q850	Internal Corrective Action
Q851	Supplier Corrective Action
Q852	Customer Requested Corrective Action

8.5.3 Preventive Action

Pho-Tronics shall determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions taken shall be appropriate to the effects of the potential problems.

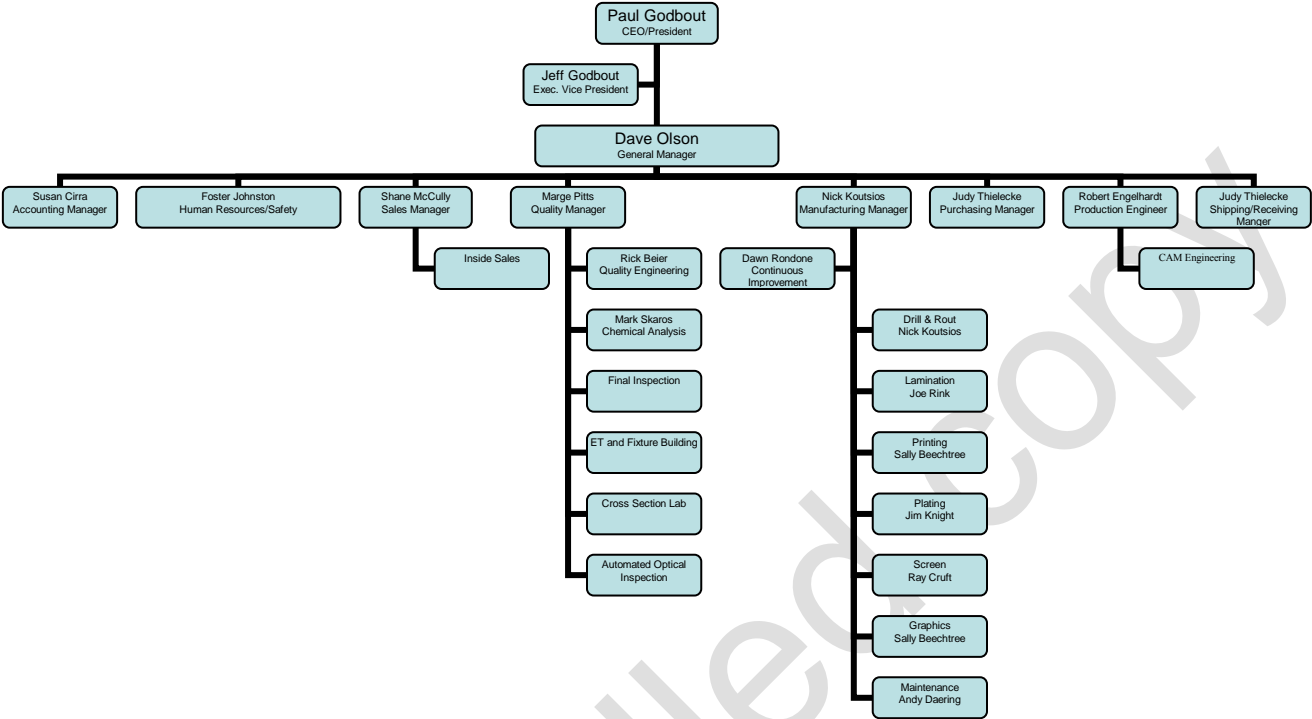
A documented procedure shall be established to define requirements for:

- a) determining potential nonconformities and their causes,
- b) evaluating the need for action to prevent occurrence of nonconformities,
- c) determining and implementing action needed,
- d) record of results of action taken, and
- e) reviewing of preventive action taken.

Applicable Procedures:	
Q860	Preventive Action
Q870	Continuous Improvement
MT010	Preventive Maintenance

PHO-TRONICS Quality Manual

APPENDIX A



APPENDIX B

QP400-1

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PHO-TRONICS Quality Manual

APPENDIX C

Active Quality Objectives

- Increase Inner layer Yields at AOI
- Improve Overall Product Realization Yield
- Improve On-Time Delivery
- Reduce Customer Returns

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