

Book review

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Book: Standards and standardization in electrical industry

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Abstract

In this book review, a recently published book titled: "Standards and standardization in electrical industry" is briefly presented. The review focuses on the content, application area and innovative aspects in the book.

Keywords Electrical engineering, Electrical industry, Standardization, Standard

Introduction

The electrical industry has been evolving since the last decades of the 19th century. This industry encompasses a wide range of application from electricity generation and distribution to electronic gadgets and computer hardware. Standardization activities in the electrical industry are focused on design, manufacture and operation of electrical and electronic systems including devices, appliances and accessories as well as installations.

The wide range of standards in electrical industry makes it crucial for any electrical engineer to have a generic understanding of the common aspects and purposes of these standards as well as their coverage and range of application. It is important for example, to know how to find the relevant standards for a specific type of cable which is to be used in an installation.

The book "Standards and Standardization in Electrical Industry" covers many important aspects of the subject. This book review is dedicated to introduce and discuss the significance, contents and readership of this book.

Book description

The bibliographical information of the book are as follows: Share Pasand, Mohammad Mahdi, Standards and Standardization in Electrical Industry, Standard Research Institute

Press, Nov. 2022, Karaj, Iran.

The book is published in Persian. The publisher; Standards Research Institute press, publishes applied and theoretical books relevant to the fields of testing, quality control, standardization and conformity assessment. The author has more than a decade experience in conformity assessment laboratories and have been collaborating in laboratory accreditation for ISO/ IEC 17025 [2] compliance in the fields of electrical and instrumentation engineering.

"Standards and Standardization in Electrical Industry" contains 400 pages, 46 figures and 83 tables. The book has 3 annexes exploring universal standardized tests and future directions in electrical standards.

Significance of the subject

Electrical engineering consists of design, installation, testing, commissioning and maintenance of electrical appliances and systems. Standardization is an active area in all of the aforementioned stages. Many regulatory organizations depend on these standards to evaluate electrical projects and products. As a result, an electrical engineer being a designer, a quality control personnel of a repairman needs to be familiar with the relevant standards because those standards will be used to assess and evaluate



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his/ her work. Laboratory and inspection experts require much deeper understanding and skill about the relevant standards. Engineers working at regulatory organizations need a wider knowledge regarding the relevance of each standard to a family of products, installations and systems. Therefore, the book subject is of utmost importance and significance and is a crucial text for almost all electrical engineers specially those in the beginning of the course of their profession.

Readership

“Standards and Standardization in Electrical Industry” is a self-study book. Though the book is written in simple language to facilitate the understanding of the concepts, the reader is occasionally encouraged to have a look at the relevant standard, world wide web or other related materials. The target audience of the book are fresh university graduates holding Bachelors’ degree in electrical engineering who seeks (has) a job related to inspection, quality control, laboratory testing or certification. The book may also be consulted by university and college professors who aim to provide complementary materials regarding testing and standardization in a specific field (e.g., electric motors). This book is also useful for those laboratory experts who are mostly focused on technical aspects of their works (for instance how to conduct a specific test) but need to have a wider understanding of the subject and deeper insight into other relevant fields. This will strengthen their knowledge and enable them to promote their career and embrace new

opportunities. For example, a laboratory personnel expert in testing of rated power of electric motors will find it useful to have a grasp of standards and quality indices for motor drives and cables used for motor windings.

Structure and organization

This book discusses several aspects of the existing standards and discusses tests, quality control concepts as well as standard categorization of electrical products.

This book begins with an introduction to standards and standardization and continues with several chapters each dedicated to a specific family of electrical devices. In the following, the main contents of each chapter will be given: The first chapter introduces and defines several important concepts and terms regarding standards, their content, aims and orientations of international standardization activities and some of the most prominent standardization organizations.

The second chapter discusses standards for electrical installations. This chapter discusses several standards and some of the conformance tests for residential and commercial electrical installations as well as electricity meters. The chapter also discusses several extremely low voltage installations used for communications, alarm and signaling. The third chapter deals with the essential requirements for developing a safety instruction in electrical installations of generic or specific premises. This chapter is most suited for readers who are planning to become an electrical safety officer or supervisor. This chapter will equip the reader with principles and methods of developing safety regulations

for an electrical installation.

The fourth chapter discusses in detail, batteries, their classification and corresponding standards. Some of conformity tests relevant to batteries are discussed in brevity.

The fifth through ninth chapters respectively discuss household electrical devices, lamps, uninterruptible power supplies and electric motors as well as their corresponding standards. Some of conformity tests are discussed in brevity. The tenth chapter discusses electrical devices for use in explosive atmospheres. The eleventh through thirteenth chapters discuss respectively transformers, capacitors and inductors, devices for use in electricity distribution systems and electrical transportation systems including vehicles.

The book contains three appendices. The first appendix is a brief review of statistical methods for product quality control. The second appendix is a useful introduction of frequently used standard tests. The third appendix provides a future perspective about the safety of electrical devices and installations. The book also contains an abbreviation table.

Novelty and Innovation

The book is written in simple and fluence Persian and provides a good beginning point for interested readers. It discusses several important tests which otherwise should be found in several different standards after years of testing experience.

Conclusion

In this book review, a recently published book titled: "Standards and Standardization in Electrical Industry" is introduced and reviewed. Content, chapters, practicality and innovative aspects of the book are briefly discussed.

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Consent for publication

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