River Publishers

Grounding and Bonding Photovoltaic and Energy Storage Systems

Author: Gregory P. Bierals, Electrical Design Institute, USA

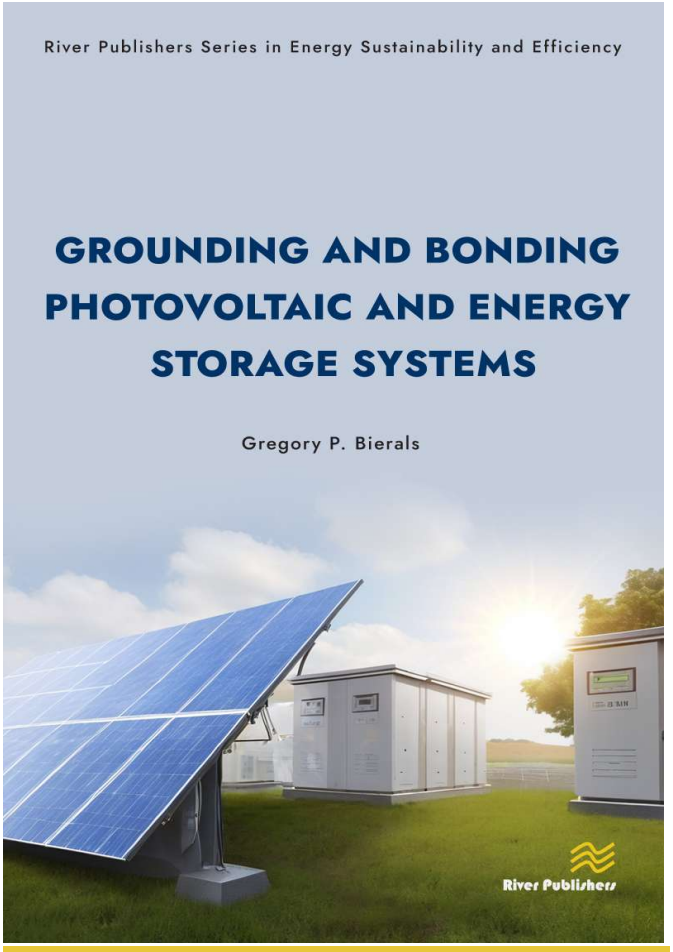
This book is designed for energy professionals to expand their understanding of proper grounding and bonding methods for photovoltaic (PV) and energy storage systems. While grounding and bonding are critical for any electrical distribution system, it is especially pertinent for PV systems due to the potential of high short circuit and ground-fault currents, as well as the possible and likely exposure to high magnitude and short duration lightning currents. This course will offer an in-depth exploration of these essential applications in the context of solar renewable and battery storage systems.

This text includes an in-depth study of the terms and definitions applicable to grounding and bonding. In addition, there is a complete analysis of single-phase and three-phase distribution systems, beginning at the supply transformer and terminating at the utilization equipment supplied by a branch circuit. This summary includes the proper system and equipment grounding and bonding methods. In addition, the lightning protection system is explained in detail (NFPA 780).

In the final chapter there is a 50 question quiz and an answer key to further enhance the reader's understanding of this subject.

TABLE OF CONTENTS

1. Introduction
2. PV Source and Output Circuit Calculations
3. Single-phase Fault Current Analysis
4. Three-phase Fault Current Analysis
5. Exercise



River Publishers Series in Energy Sustainability and Efficiency

ISBN: 9788770041454
e-ISBN: 9788770041157
Available From: February 2025
Price: $ 84.99

KEYWORDS:
Conductor insulation withstand ratings, Conductor fusing currents, AWG to metric conversion chart, Voltage-drop example, Types of ground-fault protection, Types of grounding electrodes, Bonding systems and equipment, PV source and output circuit calculations, PV system-grounding and bonding, Surge protection, The grounding electrode system, Backup-up generators, Overvoltage protection,

www.riverpublishers.com
marketing@riverpublishers.com