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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Overview: VFD Motor Controller -- Propulsion System Adjustable Speed Drive -- VFD Motor Controller for Ship Service Auxiliaries -- Shipboard Power System With LVDC and MVDC for AC and DC Application -- Shipboard VFD Application and System Grounding -- Shipboard Power Quality and VFD Effect -- Shipboard Power System FMEA for VFD Motor Controller -- Shipboard VFD Cable Selection, Installation, and Termination -- Ship Smart System Design (S3D) and Digital Twin -- Appendices -- Glossary.
Sommario/riassunto	An in-depth exploration of shipboard power generation and distribution system design that utilizes variable frequency drives The variable frequency drive (VFD) application is a proven technology for shore-based applications. However, shore-based VFDs often are unsuitable for shipboard applications because the power generation and distribution fundamentals are completely different. VFD Challenges for Shipboard Electrical Power System Design explores the problems presented by variable frequency drives as they are applied in shipboard power generation and distribution system design and offers solutions for meeting these challenges. VFDs with configurations such as six pulse drive, 12 pulse drive, 18 pulse drive, active front end, pulse width modulation and many others generate many different levels of

harmonics. These harmonics are often much higher than the regulations allow. This book covers a range of techniques used to provide ships with efficient energy that minimizes mechanical and electrical stress. This important book: . Offers a comparison of shipboard grounding and VFD grounding. Contains an analysis of the VFD effect in terms of shipboard power quality. Includes specific examples of Department of Transportation standards regarding VFDs Written for commercial and naval engineers designing ships and/or shipboard power systems, VFD Challenges for Shipboard Electrical Power System Design is a comprehensive resource that addresses the problems and solutions associated with shipboard applications of VFD.