

the leading electrical & electronics monthly

ieema journal

Volume 13 Issue No. 2 October 2021 CIN U99999MH1970GAP014629
Official Organ of Indian Electrical & Electronics Manufacturers' Association
Member: The Indian Newspaper Society

5

From the President's Desk

6

Samvaad

11

Interaction

Announcing second edition of Digielec Bharat



With more than 6,000 registered participants and 34,000 views, the first digital event by IEEMA named as

Digielec Bharat was a complete success. IEEMA Journal speaks to Digielec Bharat Chairman, Mr Vijay Karia for an insight on the second edition of this exhibition.

13

Cover Story

ELROMA 2021 Post Show Report

“Smart Efficient Rotating Machines and Control Solutions for a Greener World”

IEEMA Rotating Machines Division organized the 10th edition of ELROMA(virtual) Conference and Exposition from 6th to 8th September 2021 with theme “Smart Efficient Rotating Machines and Control Solutions for a Greener World”.



ELROMA 2021 Post-Show Report

“Smart Efficient Rotating Machines and Control Solutions for a Greener World”

22

In Focus

Impact of IEEE-650 voltage transient on induction motors fed through UPS and VVVF starter



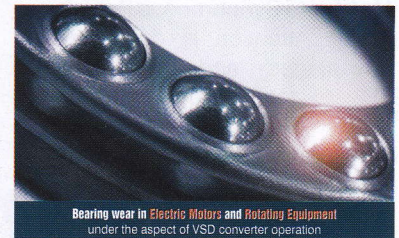
Impact of IEEE-650 Voltage Transient on Induction Motors Fed Through Ups and VVVF Starter

In a Nuclear Power Plant (NPP), the critical loads like fans, pumps, motorised valves are fed from Power UPS or Variable Voltage Variable Frequency (VVVF) starter. These power electronic sources need to be qualified as per IEEE-650 standard. A transient test is proposed in revised IEEE-650 based on the transient incident reported at the NPP of Forsmark, Sweden.

30

In Depth

Bearing wear in electric motors and rotating equipment under the aspect of VSD converter operation



Bearing wear in Electric Motors and Rotating Equipment under the aspect of VSD converter operation

This paper deals with the bearing wear and the early detection of possible damages in bearings of variable-speed, converter-fed electrical motors. A description covering the issue of bearing currents in converter-fed drives along with possible countermeasures to avoid these parasitic effects is presented. However, this work focuses on the practical experiences of bearing wear influence on electric motors performance.

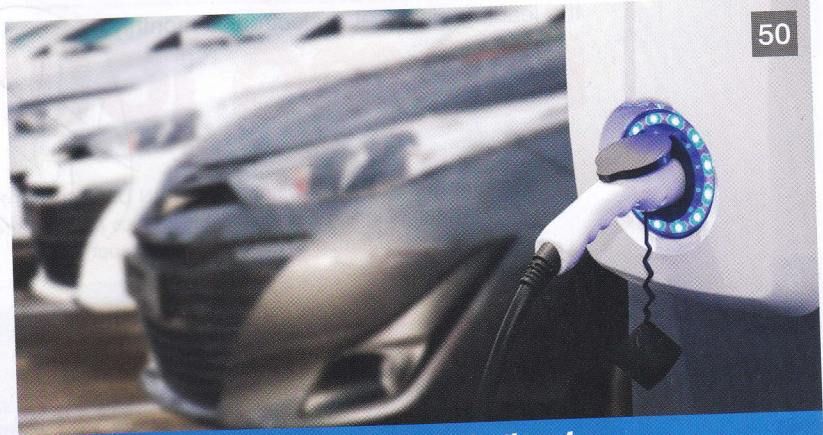
For suggestions and feedback please write to us on shalini.singh@ieema.org

50

In Focus

Comparison & Evaluation of Electric Motor Designs for EV Application

This paper reports the significance of various motor topology that can be explored in comparison with conventional brushless motors using surface mounted neodymium magnets in electric vehicle applications. The peak power rating of the motor considered for this case study is 5 kW @ 3000 rpm. This paper compares and evaluates the performance of spoke type using ferrite magnets, Interior V-shaped rotor designs.es India's potential to be 748 GW.



50

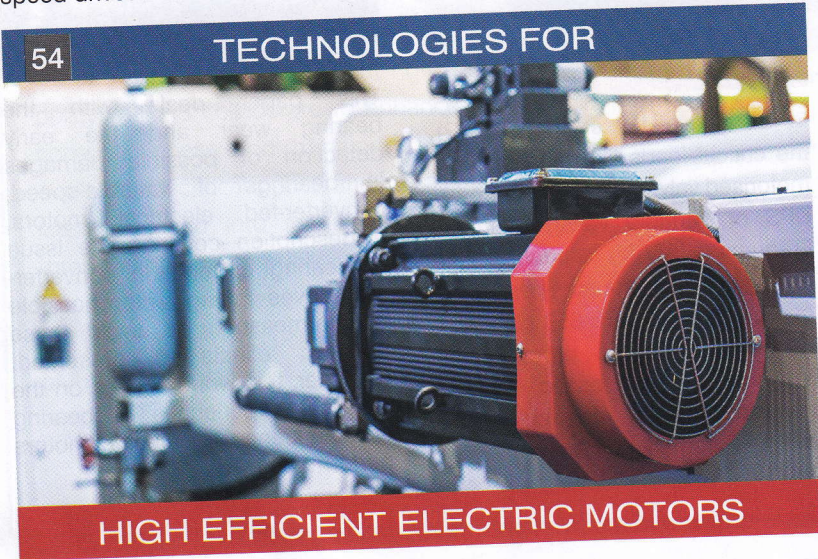
Comparison & Evaluation of Electric Motor Designs for EV Application

54

Expert Speak

Technologies for high efficient electric motors

This paper focuses on the main electric motor technologies to increase efficiency of pumping systems. Basically, three technologies are compared: Induction Motor, Permanent Magnet Motor and Synchronous Reluctance Motor. Attention is drawn to the advantages and disadvantages of each technology, especially for those motors designed for variable speed drives.



54

TECHNOLOGIES FOR

HIGH EFFICIENT ELECTRIC MOTORS

65

Insight

A novel wind - solar - VSDG hybrid controller



Present-day, off-grid systems are dominated by diesel generating sets and renewable energy sources like solar and wind generators. Diesel generating sets have low capital costs and high operating costs.

69

Guest Article

Lightning and Protection for Humans (& Animals) from Lightning

Lightning is certainly a very frequent and spectacular event of nature. Everyone would have seen it many many times. The actual number in any area seen by a person depends on the age (!) and region of the country. Globally speaking, it is estimated that there will be about 1400 million lightning flashes per year.

82

Opinion

Neutral to Earth potential, Safety Hazards and Digital Grounding

Current flowing through the protective conductor (earth wire) during normal conditions is always a threat to electrical safety in Low Voltage installations. A continuous current flow through protective conductor more than a threshold level creates accidents such as shock, sparks, and fire. Although functional earthing is essential to minimize the neutral to earth potential in sensitive devices and electronic gadgets, there is no compromise in the provision of protective earthing and equipotential bonding to safeguard the equipment and personnel.

86

Events and Eventualities

Case Studies on Transformer's Abnormal Situation (Part-9)

Last few months the case studies on Transformer's Abnormal situation is getting published under the section of EVENT and EVENTUAL series.

93

ERDA

95

Products showcase

96

Power Scenario

Global Scenario
Indian Scenario

98

IEEMA Database

Basic Prices & Indices
Production Statistics

100

International News

- Spain moves again to curb soaring power prices
- Kalpataru Power wins arbitration award of \$32 million against Rwanda Energy Group

102

National News

- India Adds 4,578 MW of Solar in 1H 2021, Surpassing Installations in All of CY 2020
- PM Modi discusses India's renewable energy landscape with CEO of First Solar

104

Corporate News

- Genus Power Infrastructures Limited signs MoU with Tata Power DDL to provide education and training related to AMI Deployment
- KEC International acquires an EPC company in the Oil and Gas Pipelines sector

106

IEEMA Activities

109

Advertiser's Index

110

Sparks Sans Shocks

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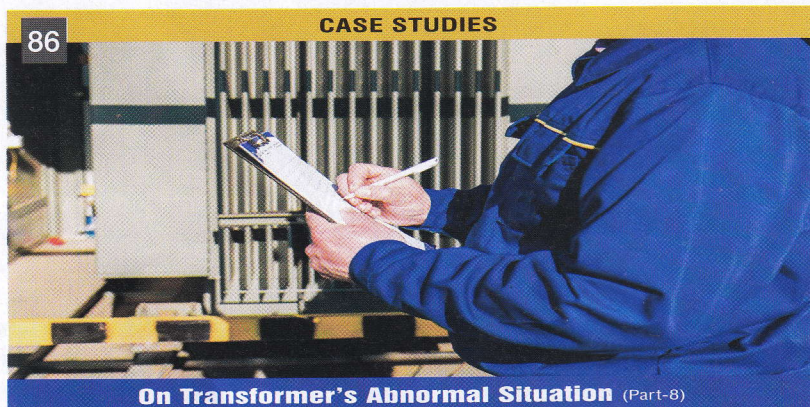
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86

CASE STUDIES

On Transformer's Abnormal Situation (Part-8)

Edited, Printed and published by Mr Sunil Kumar Misra on behalf of Indian Electrical and Electronics Manufacturers' Association, and Printed at India Printing Works, India Printing House, 42, G. D. Ambekar Road, Wadala, Mumbai 400 031 and Published at 501, Kakad Chambers, 132, Dr. Annie Besant Road, Worli, Mumbai 400 018.