

Australian/New Zealand Standard™

Tap-changers

Part 1: Performance requirements and test methods (IEC 60214-1:2014 (ED.2.0) MOD)



AS/NZS 60214.1:2020

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- Energy Efficiency & Conservation Authority of New Zealand
- Energy Networks Australia
- Engineers Australia
- Rail Industry Safety and Standards Board

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Australian/New Zealand Standard™

Tap-changers

Part 1: Performance requirements and test methods (IEC 60214-1:2014 (ED.2.0) MOD)

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-008, Power Transformers, to supersede AS 60214.1—2005, *Tap-changers, Part 1: Performance requirements and test methods*.

The objective of this Standard is to specify performance requirements and test methods for on-load tap-changers of both resistor and reactor types, de-energized tap-changers, and their motor-drive mechanisms.

This Standard applies mainly to tap-changers immersed in mineral insulating oil according to AS 60296 but may also be used for tap-changers with air or gas insulation or immersed in other insulating liquids insofar as conditions are applicable.

This Standard applies mainly to tap-changers with arcing contacts but may also be used for arcing-free on-load tap-changers (such as electronic switching) insofar as conditions are applicable.

This Standard applies to power and distribution transformers of all types and to reactors.

This Standard does not apply to transformers and reactors mounted on railway rolling stock.

This Standard is an adoption with national modifications, and has been reproduced from, IEC 60214-1:2014, *Tap-changers— Part 1: Performance requirements and test methods*. The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variations to IEC 60214-1:2014, for the application of this Standard in Australia and New Zealand.

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The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TAP-CHANGERS –

Part 1: Performance requirements and test methods

FOREWORD

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International Standard IEC 60214-1 has been prepared by IEC technical committee 14: Power transformers.

This second edition cancels and replaces the first edition published in 2003. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- incorporation of requirements on vacuum type on-load tap-changers,
- incorporation of requirements on gas insulated tap-changers,
- changes in the type tests to fit with the service conditions,
- reference to the newest edition of IEC 60076-3:2013.

The text of this standard is based on the following documents:

CDV	Report on voting
14/746/CDV	14/767A/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60214 series, published under the general title *Tap-changers*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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TAP-CHANGERS –

Part 1: Performance requirements and test methods

1 Scope

This part of IEC 60214 applies to on-load tap-changers of both resistor and reactor types, de-energized tap-changers, and their motor-drive mechanisms.

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This part of IEC 60214 applies to power and distribution transformers of all types and also to reactors.

It does not apply to transformers and reactors mounted on railway rolling stock.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050 (all parts), *International Electrotechnical Vocabulary* (available at <http://www.electropedia.org>)

IEC 60050-421, *International Electrotechnical Vocabulary – Chapter 421: Power transformers and reactors*

IEC 60060-1, *High voltage test techniques – Part 1: General definitions and test requirements*

IEC 60076-3:2013, *Power transformers – Part 3: Insulation levels, dielectric tests and external clearances in air*

IEC 60076-7:2005, *Power transformers – Part 7: Loading guide for oil-immersed power transformers*

IEC 60076-21:2011, *Power transformers – Part 21: Standard requirements, terminology, and test code for step-voltage regulators*

IEC 60137:2008, *Insulated bushings for alternating voltages above 1 000 V*

IEC 60214-2:2004, *Tap-changers – Part 2: Application guide*

IEC 60270, *High-voltage test techniques – Partial discharge measurements*