

Australian Standard[®]

**High-voltage alternating current
circuit-breakers—Inductive load
switching**

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Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Electricity Supply Association of Australia
Institution of Engineers, Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/7 on Power Switchgear. It is identical with and has been reproduced from IEC 1233:1994, *High-voltage alternating current circuit-breakers—Inductive load switching*.

This Standard is the result of a consensus among representatives on the Joint Committee to produce it as an Australian Standard.

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50(441) Chapter 441: Switchgear, controlgear and fuses	1852.441 Part 441: Switchgear, controlgear and fuses
56 High-voltage alternating-current circuit-breakers	2006 High voltage a.c. switchgear and controlgear—Circuit-breakers for rated voltages above 1000 V

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AUSTRALIAN STANDARD

HIGH-VOLTAGE ALTERNATING CURRENT CIRCUIT-BREAKERS — INDUCTIVE LOAD SWITCHING

Section 1: General

1.1 *Scope*

This report is applicable to circuit-breakers which are used for switching of:

- transformer magnetizing currents, or
- currents of high-voltage motors, or
- currents of shunt reactors.

It is also applicable to contactors used for switching the currents of high-voltage motors.

1.2 *Normative references*

The following normative documents contain provisions which, through reference in this text, constitute provisions of this technical report. At the time of publication of this standard, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this technical report are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 50(441): 1984, *International Electrotechnical Vocabulary (IEV) - Chapter 441: Switchgear, controlgear and fuses*

IEC 56:1987, *High-voltage alternating-current circuit-breakers*

1.3 *Auxiliary voltages and pressures*

Inductive load switching tests shall be made with rated supply voltage applied to the closing and opening devices and auxiliary circuits and with rated pressures of compressed gas supply for operation and for interruption.

NOTE - The re-ignition behaviour of the circuit-breaker may be checked at the minimum functional pressure of the extinguishing medium.

Section 2: Transformer magnetizing currents

2.1 *General*

Due to the non-linear behaviour of the transformer iron core it is not possible to correctly model the switching of transformer magnetizing current by linear components in a test station. Tests using a transformer (for example, a test transformer) will be only valid for the transformer tested and cannot be representative for other transformers.

2.2 *Transformer magnetizing current for circuit-breakers with rated voltages of 100 kV and above*

Experience indicates that when interrupting magnetizing currents of unloaded transformers under steady-state conditions and at voltages not exceeding their rated voltage, the overvoltages are small. Tests are therefore not specified to simulate this switching condition.