

Title	Demonstrate knowledge of circuit protection and distribution board wiring		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to demonstrate knowledge of: <ul style="list-style-type: none"> – circuit protection for electrical installations; and – distribution board wiring.
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Classification	Electrical Engineering > Core Electrical
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Available grade	Achieved
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Guidance Information

- 1 Unit standard or equivalent prior knowledge and skills recommended:
Unit 32614, *Demonstrate knowledge of electrical faults, circuit protection, de-commissioning, and commissioning.*
- 2 Reference
AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*; or any current subsequent amendments and replacements.
- 3 Definitions
DC – direct current.
Medium complexity switchboard – a switchboard supplying a submain, cooker, an externally controlled circuit such as controlled hot water or heating and at least eight other RCD protected subcircuits or similar.
- 4 This unit standard can be used together with other relevant unit standards, additional learning and workplace training to meet the requirements of the Electrical Workers Registration Board (EWRB) core competencies, available at <https://www.ewrb.govt.nz>.
- 5 This unit standard applies to installations and equipment rated above extra-low voltage unless specifically stated.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of circuit protection for electrical installations.

Performance criteria

1.1 Define circuit protection device terms.

Range three terms;
may include but is not limited to – current rating, voltage type and rating, fusing/tripping current, utilisation category, tripping factor, time verses current characteristic, category of duty, back-up protection, rupturing capacity, prospective short-circuit current.

1.2 Describe the fundamental design and layout of circuit protection throughout an electrical installation.

Range must include – main switchboard, sub-board, sub-circuits, disconnection times for circuit protection devices, co-ordination of protection devices.

1.3 Identify the installation requirements for electrical fault protection from AS/NZS 3000.

Range three requirements.

Outcome 2

Demonstrate knowledge of distribution board wiring.

Performance criteria

2.1 Explain the design of circuit protection and wiring for a medium complexity distribution switchboard.

2.2 Identify general requirements for distribution boards from AS/NZS 3000.

Range three requirements.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at qualifications@waihanga.nz if you wish to suggest changes to the content of this unit standard.