

Title	Demonstrate knowledge of electric switchboards and lighting and power circuits		
Level	3	Credits	2

Purpose	<p>This unit standard is intended for training and assessment of electrical workers and covers knowledge and application of electric electromagnetic production and management of electricity.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of switchboards; and – demonstrate knowledge of basic lighting and power circuits including associated electrical protection.
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Classification	Electrical Engineering > Electrical Installation and Maintenance
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Available grade	Achieved
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Explanatory notes

- 1 This unit standard has been developed for learning and assessment off-job;
- 2 This unit standard and unit standards 5931, 5932, 15848, 15855, 29419, 29430, 29440, and 29480 together meet the assessment requirements of ERAC EPC 24. This unit standard and unit standards 5926, 29422, 29475, 29481, and 29482 together meet the assessment requirements of ERAC EPC 51.
- 3 Definitions
 - a.c.* – alternating current.
 - CEPC* – Critical Essential Performance Capability.
 - d.c.* – *direct current*.
 - EPC* – Essential Performance Capability.
 - ERAC* – Electrical Regulatory Authorities Council.
 - EWRB* – Electrical Workers Registration Board.
 - Industry practice* – those practices that competent practitioners within the industry recognise as current industry best practice.
 - MEN* – multiple earth neutral.
 - RCD* – residual current device.
 - Safe and sound practice* – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.
- 4 Range
 - a Candidates may refer to current legislation and Standards during assessment.
 - b Demonstration of safe working practices and installation in accordance with *safe*

- and sound practice* are essential components of assessment of this unit standard.
- c All activities and evidence presented for all outcomes and evidence requirements in this unit standard must be in accordance with:
- i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - v applicable site, enterprise, and industry practice; and,
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of switchboards.

Evidence requirements

- 1.1 Describe types of electrical switchboards and equipment.
- Range main switchboard, multiple earth neutral (MEN) switchboard, distribution board, switchgear.
- 1.2 With the aid of diagrams outline the function of switchboards and where they fit in the circuit.
- Range domestic, commercial, industrial, electricity supply.
- 1.3 Identify components found on switchboards and outline their purpose.
- 1.4 Summarise switchboard installation requirements.
- 1.5 Describe requirements for the installation of RCD on switchboards.
- 1.6 Summarise switchboard internal arc fault and fire prevention measures.
- 1.7 Describe visual checks and electrical test procedures for main switchboards.
- Range electrical test – polarity, phase rotation, insulation resistance, bonding.

Outcome 2

Demonstrate knowledge of basic lighting and power circuits including associated electrical protection.

Evidence requirements

- 2.1 Identify components and equipment found in lighting circuits and outline their purpose and operation.

- 2.2 Identify components and equipment found in power circuits and outline their purpose and operation.
- 2.3 Explain connection methods used in lighting and power circuits.
- 2.4 Describe electrical protection requirements for basic lighting and power circuit.

Replacement information	This unit standard replaced unit standard 1205.
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Planned review date	31 December 2019
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2016	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>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact The Skills Organisation at reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.