

Title	Draw and explain electrical diagrams		
Level	3	Credits	4

Purpose	<p>This unit standard is for electricians and related trades, who need to draw and to understand electrical installation and control diagrams.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of electrical symbols, labelling techniques, and terminology – draw, label, and explain diagrams of simple electrically functional systems.
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Classification	Electrical Engineering > Core Electrical
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment off-job.
- 2 This unit standard and unit standard 29426 meet the assessment requirements of ERAC CEPCs 40.
- 3 Definitions

CAD – computer aided design.

CEPC – Critical Essential Performance Capability.

ERAC – Electrical Regulatory Authorities Council.

Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.

Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.
- 4 Range
 - a Both hand drawing or CAD can be used during assessment.
 - b Standard symbols to be used for all assessments.
 - c Candidates may refer to current legislation and Standards during assessment.
 - d Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.

- e All activities and evidence presented for all outcomes and performance criteria 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
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of electrical symbols, labelling techniques, and terminology.

Performance criteria

1.1 Identify fifteen standard electrical drawing symbols from diagrams.

1.2 Describe standard labelling conventions.

1.3 Define control circuit terminology.

Range normal position, energised position, holding contacts, overload contacts, make contacts, break contacts, manual, automatic, semi-automatic.

Outcome 2

Draw, label, and explain diagrams of simple electrically functional systems and include symbol legend.

Performance criteria

2.1 Draw and interpret two simple control circuit diagrams.

2.2 Draw and explain two simple scale location diagrams for an installation.

2.3 Draw and explain two simple single line electricity distribution diagrams showing equipment ratings and cable sizes.

Replacement information	This unit standard and unit standard 29480 replaced unit standard 15845 and unit standard 15854.
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Planned review date	31 December 2027
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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	31 December 2025
Review	2	25 May 2023	31 December 2025
Review	3	30 November 2023	N/A

Consent and Moderation Requirements (CMR) reference

0003

This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

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