

Title	Draw and explain simple electrical diagrams		
Level	2	Credits	4

Purpose	<p>This unit standard covers drawing practice for electricians and related trades.</p> <p>People credited with this unit standard are able to draw:</p> <ul style="list-style-type: none"> – and explain simple electrical circuit diagrams; – electrical location diagrams; – single-line diagrams for electricity distribution; – a schematic circuit diagram from inspection of a given electrical product; – an electrical block diagram of a given electrical product; – an electrical wiring diagram of a given electrical product.
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Classification	Electrical Engineering > Core Electrical
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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 Reference
AS/NZS 1102:1997, *Graphical symbols for electrotechnical documentation*.
- 3 Useful information, particularly with respect to symbols is contained in the publication SAA/SNZ HB#3:1996 – *Electrical and electronic drawing practice for students*, available from Standards New Zealand, Private Bag 2439, Wellington 6020.

Outcomes and evidence requirements

Outcome 1

Draw and explain simple electrical circuit diagrams.

Range circuit diagrams – series, parallel, and series-parallel connections; using switches, outlets, lamps, ammeters, voltmeters, fuses, resistors, batteries, single-phase supply.

Evidence requirements

- 1.1 Circuitry is electrically functional.
- 1.2 Standard symbols are used.

1.3 Operation of circuits is explained with reference to current paths.

Outcome 2

Draw electrical location diagrams.

Range location diagrams for domestic or small commercial installation.

Evidence requirements

2.1 Location diagrams are drawn to scale.

2.2 Standard symbols are used.

2.3 A legend of symbols is included.

Outcome 3

Draw single-line diagrams for electricity distribution.

Range examples of diagrams – single-phase domestic installation, three-phase industrial installation, power generation distribution.

Evidence requirements

3.1 Circuitry is electrically functional.

3.2 Equipment ratings and cable sizes are shown.

3.3 Standard symbols are used.

3.4 Purpose of line diagrams is explained according to industry practice.

Outcome 4

Draw a schematic circuit diagram from inspection of a given electrical product.

Range product may be any one of – electrical appliance, complete installation or any process, machine or equipment featuring electrical control.

Evidence requirements

4.1 Circuit diagram is drawn by inspection of the physical product.

4.2 Drawn circuit is electrically functional and a true representation of the physical product.

4.3 Standard symbols are used.

Outcome 5

Draw an electrical block diagram of a given electrical product.

Range product may be any one of – electrical appliance, complete installation or any process, machine or equipment featuring electrical control.

Evidence requirements

5.1 Block diagram correctly depicts the functional units of the product.

5.2 Standard symbols are used.

Outcome 6

Draw an electrical wiring diagram of a given electrical product.

Range product may be any one of – electrical appliance, complete installation or any process, machine or equipment featuring electrical control.

Evidence requirements

6.1 Wiring diagram correctly depicts the physical interconnection of components of the product.

6.2 Wiring diagram is functionally correct.

Replacement information	This unit standard replaced unit standard 743 and unit standard 745. This unit standard and unit standard 15854 have been replaced by unit standard 29479 and unit standard 29480.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	10 February 1999	31 December 2013
Revision	2	3 April 2001	31 December 2013
Review	3	26 May 2005	31 December 2021
Rollover and Revision	4	15 March 2012	31 December 2021
Revision	5	15 January 2014	31 December 2021
Review	6	21 July 2016	31 December 2021

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.