

<b>Title</b>	<b>Install and commission extra-low voltage equipment</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>3</b>

<b>Purpose</b>	<p>This unit standard covers the installation and commissioning of a variety of electrical equipment operating at voltages not exceeding 32 volts alternating current or 115 volts direct current. It is intended for people wishing to qualify as electricians or in related trades.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> <li>– prepare for installation of extra-low voltage equipment;</li> <li>– install extra-low voltage wiring and equipment; and</li> <li>– commission extra-low voltage wiring and equipment.</li> </ul>
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<b>Classification</b>	Electrical Engineering > Electrical Installation and Maintenance
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<b>Available grade</b>	Achieved
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### Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job.
- 2 Achievement of this unit standard does not by itself imply that trainees may legally perform prescribed electrical work in their own right. Until they are registered and licensed under the Electricity Act 1992, trainees are assisting, and must work under the supervision of a Supervisor of Electrical Work when carrying out prescribed electrical work. If the prescribed electrical work in question is carried out for reward the Supervisor of Electrical Work must hold a valid practising licence.
- 3 References  
 Electricity Act 1992;  
 Electricity (Safety) Regulations 2010;  
 Health and Safety in Employment Act 1992;  
 AS/NZS 3000:2007, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*, including Amendment 1;  
 AS/NZS 3008.1.2:2010, *Electrical installations – Selection of cables – Cables for alternating voltages up to and including 0.6/1 kV – Typical New Zealand conditions*; and all subsequent amendments and replacements.
- 4 Definitions  
 The term *current regulations and standards* is used in this unit standard to refer to the requirements of the above references.  
 The term *safe and sound practice* relating to the installation of electrical equipment is defined in AS/NZS 3000:2007.

*Safe working practices* are described in the *Manual for Safety Training in the Electrical Industry*.

## 5 Range

- a Demonstration of *safe working practices* and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
- b Typical extra-low voltage equipment – telecommunications systems, security alarm systems, fire protection, emergency lighting, lift control circuitry, battery supply installation, extra-low voltage supply system to apparatus; evidence of one type of system or equipment is required.

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## Outcomes and performance criteria

### Outcome 1

Prepare for installation of extra-low voltage equipment.

#### Performance criteria

- 1.1 Customer requirements are confirmed through consultation.
- 1.2 Equipment specifications and installation drawings are obtained. Where installation drawings are not available, they must be developed before the work commences.
- 1.3 Cable sizes and protection requirements are determined from equipment ratings and specifications.
- 1.4 Current regulations and standards applicable to extra-low voltage equipment are identified, and the operating and installation principles of the particular type of equipment researched as necessary.

### Outcome 2

Install extra-low voltage wiring and equipment.

#### Performance criteria

- 2.1 The installation is completed in accordance with current regulations and standards, specifications, and safe and sound practice.
- 2.2 Installation meets customer requirements.
- 2.3 The work site is left free of installation waste and excess materials to the customer's satisfaction and in accordance with industry practice.

### Outcome 3

Commission extra-low voltage wiring and equipment.

**Performance criteria**

- 3.1 Testing confirms that all requirements of current regulations and standards have been met, and that the equipment is safe to connect.
- 3.2 Tests and adjustments are made to verify equipment operation and performance in accordance with specifications.
- 3.3 Equipment operation is explained to customer to promote effective use in accordance with company requirements.
- 3.4 Documentation is completed and handed to customer.  
  
Range documentation may include but is not limited to – as-built drawings, test records, handbooks, drawings, operating instructions.
- 3.5 Job documentation is completed to company requirements.

<b>Replacement information</b>	This unit standard replaced unit standard 2028.
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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	28 June 1999	31 December 2013
Review	2	26 May 2005	31 December 2021
Rollover and Revision	3	15 March 2012	31 December 2021
Revision	4	15 January 2014	31 December 2021
Review	5	21 July 2016	31 December 2025
Review	6	24 March 2022	31 December 2025

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