

<b>Title</b>	<b>Describe and use complex electrical instruments</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>2</b>

<b>Purpose</b>	<p>This unit standard is for people in the electrical and related trades, who need to use and interpret the more complex types of instruments.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"><li>– describe complex electrical instruments; and</li><li>– use complex electrical instruments.</li></ul>
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<b>Classification</b>	Electrical Engineering > Core Electrical
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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 off-job.
- 2 References  
Electricity (Safety) Regulations 2010;  
Health and Safety at Work Act 2015;  
AS/NZS 3000:2018, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*, including Amendment 1;  
AS/NZS 3760:2010, *In-service safety inspection and testing of electrical equipment*, including Amendment 1;  
and all subsequent amendments and replacements.
- 3 Definition  
The term *complex electrical instruments* refers to instruments other than the basic instruments for the measurement of voltage, current, resistance, and insulation resistance.
- 4 Range  
  
Evidence is required for at least the following instruments – earth resistance tester, earth-fault loop tester, energy recording meter, oscilloscope, phase rotation indicator, power factor meter, residual current device (RCD) tester, wattmeter.

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### Outcomes and performance criteria

#### Outcome 1

Describe complex electrical instruments.

**Performance criteria**

- 1.1 The function and purpose of each instrument are described in accordance with industry practice.
- 1.2 One application for each instrument are described in accordance with industry practice.
- 1.3 Connection diagram, settings, and method of use of each instrument are described in accordance with industry practice.
- 1.4 Maintenance and care of each instrument are described in accordance with industry practice.

**Outcome 2**

Use complex electrical instruments.

**Performance criteria**

- 2.1 Instruments are zeroed and calibrated as appropriate in accordance with manufacturers' specifications.
- 2.2 Instruments are connected and settings selected as appropriate in accordance with manufacturers' specifications.
- 2.3 Measurements or indications are taken as appropriate and recorded in accordance with industry practice.
- 2.4 Instruments are used in a manner that causes no danger to persons or damage to instrument or equipment.

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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	22 April 1994	31 December 2013
Review	2	23 April 1996	31 December 2013
Review	3	10 February 1999	31 December 2013
Review	4	26 May 2005	31 December 2027
Rollover and Revision	5	15 March 2012	31 December 2027
Revision	6	15 January 2014	31 December 2027
Rollover and Revision	7	28 January 2021	31 December 2027
Review	8	25 May 2023	31 December 2027

**Consent and Moderation Requirements (CMR) reference**

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