

<b>Title</b>	<b>Demonstrate knowledge of electrical test instruments and carry out electrical testing</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>4</b>

<b>Purpose</b>	People credited with this unit standard are able to: demonstrate knowledge of electrical test instruments; and carry out electrical testing.
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<b>Classification</b>	Electricity Supply > Electricity Supply - Core Skills
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<b>Available grade</b>	Achieved
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### Guidance Information

- Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable legislative and industry requirements.
- Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the current version of the Health and Safety at Work Act 2015; Electricity Act 1992; Electricity (Safety) Regulations 2010; and any subsequent amendments and replacements; Electricity supply industry codes of practice and documented enterprise procedures, including *Safety Manual – Electricity Industry (SM-EI)* (2015) available from [www.eea.co.nz](http://www.eea.co.nz).
- Definitions  
*Asset owner* refers to a participant who owns or operates assets used for generating or conveying electricity.  
*Industry requirements* include all asset owner requirements; manufacturers' specifications; and enterprise requirements which cover the documented workplace policies, procedures, specifications, business, and quality management requirements relevant to the workplace in which assessment is carried out.
- The *prove-test-prove method* refers to proving the instrument before and after a test to ensure that it works properly and is particularly important when confirming electrical isolation.

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### Outcomes and performance criteria

#### Outcome 1

Demonstrate knowledge of electrical test instruments.

**Range** may include but is not limited to – voltmeter, ammeter, ohmmeter, multimeter, clip-on ammeter, insulation tester, phase rotation meter, earth resistance tester, high voltage proximity voltage detector, earthing loop impedance tester, ground earth resistance tester. Instruments may be digital or analogue; evidence of four test instruments is required.

### Performance criteria

- 1.1 The types of test instruments used and their function within the electricity supply industry are described.
- 1.2 The different electrical categories of test instruments are listed and described.
- Range** I, II, III, IV.
- 1.3 The types of measurements taken by test instruments are physically identified and described.
- 1.4 Consequences of incorrect use of test instruments are described in terms of polarity reversal.
- 1.5 Test instruments are set up and their connections to circuit under test are sketched.

### Outcome 2

Carry out electrical testing.

**Range** tests include – voltage, current, resistance, insulation resistance, earth resistance, loop resistance, rotation, phasing and polarity, instrument category; evidence of three different types of measurements with different instruments is required.

### Performance criteria

- 2.1 Test instrument is selected to match the type of measurement or indication required and visually inspected for safety.
- 2.2 Instrument is set for measurement or indication by selection of function and range.
- 2.3 The ‘prove-test-prove’ method is demonstrated during testing.
- 2.4 Measurements or indications are taken.
- 2.5 The results are recorded and analysed for validity.

<b>Planned review date</b>	31 December 2024
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	26 July 2003	31 December 2016
Rollover and Revision	2	25 October 2007	31 December 2016
Review	3	19 November 2010	31 December 2016
Review	4	20 March 2014	31 December 2021
Review	5	28 November 2019	N/A
Revision	6	28 January 2021	N/A

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

0120

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

**Comments on this unit standard**

Please contact Connexis - Infrastructure Industry Training Organisation at [qualifications@connexis.org.nz](mailto:qualifications@connexis.org.nz) if you wish to suggest changes to the content of this unit standard.