

Title	Describe and apply knowledge of electrotechnology fault-diagnosis procedures		
Level	4	Credits	5

Purpose	<p>This unit standard covers basic fault finding in electrotechnology products or systems in a systematic and logical manner.</p> <p>People credited with unit standard are able to:</p> <ul style="list-style-type: none"> - describe electrotechnology diagnostic processes; and - apply logical and systematic techniques to identify the location and cause of faults in electrotechnology equipment.
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Classification	Electrical Engineering > Electrotechnology
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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 with realistic simulations.
- 2 References
Electricity Act 1992;
Electricity (Safety) Regulations 2010;
Health and Safety at Work Act 2015 and associated regulations;
and all subsequent amendments and replacements.
- 3 Definition
Industry practice – practice used and recommended by organisations involved in the electrotechnology industry.
- 4 All measurements are to be expressed in Système International (SI) units, and, where required, converted from Imperial units into SI units.
- 5 All activities must comply with: any policies, procedures, and requirements of the organisations involved; the standards of relevant professional bodies; and any relevant legislative and/or regulatory requirements.

- 6 Range
- a faults may be at the level of components, printed circuit boards, cards, or other units or elements within larger systems;
 - b the emphasis is on diagnosis by use of logical analysis of symptoms, observation, and measurement, rather than by trial and error;
 - c observance of electrical and workshop or laboratory safety practices is an essential part of assessment;
 - d performance in relation to the outcomes of this unit standard must comply with the Health and Safety at Work Act 2015;
 - e laboratory and workshop safety practices are to be observed at all times.

Outcomes and performance criteria

Outcome 1

Describe electrotechnology diagnostic processes.

Performance criteria

- 1.1 Processes commonly used to diagnose faults in electronic equipment are described in accordance with industry practice.

Range confirm symptoms, look for the obvious, use previous fault data, use manufacturer's diagrams and servicing information, run built-in diagnostics or programmes, use diagnostic measurement techniques to isolate faulty components, substitute with good component or module, fault report.

Outcome 2

Apply logical and systematic techniques to identify the location and cause of faults in electrotechnology equipment.

Range evidence of three faults on different electrotechnology hardware products is required.

Performance criteria

- 2.1 Fault location and cause are found through analysis of symptoms, observation and measurement in accordance with industry practice.

Range manufacturers' data, trace circuits.

- 2.2 The logic of the method used to find the fault is documented in accordance with industry practice.

- 2.3 The diagnostic process does not compromise the integrity of the product or system in accordance with industry practice.

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	27 April 2000	31 December 2013
Review	2	18 December 2006	31 December 2024
Rollover and Revision	3	15 March 2012	31 December 2024
Revision	4	15 January 2014	31 December 2024
Rollover and Revision	5	25 March 2021	31 December 2024
Review	6	2 March 2023	31 December 2024

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>.