

<b>Title</b>	<b>Find and repair electrical faults and perform test routines on robotic equipment</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	<p>This unit standard is for qualified electricians who need to attend to electrical faults in robotic equipment.</p> <p>People credited with this unit standard are able to: find and repair electrical faults in robots, associated input/output devices, and robotic safety circuits; and perform test routines on robotic equipment.</p>
----------------	--

<b>Classification</b>	Mechanical Engineering > Engineering - Robotics
-----------------------	---

<b>Available grade</b>	Achieved
------------------------	----------

---

### Guidance Information

- 1 Legislation, codes of practice and standards relevant to this unit standard:
  - Health and Safety in Employment Act 1992, and associated regulations;
  - Electricity Act 1992;
  - Electricity Regulations 1997;
  - New Zealand Electrical Codes of Practice (Ministry of Commerce, ISSN 0114-0663);
  - AS/NZS 3760:2001, In-service safety inspection and testing of electrical equipment;
  - Safe Working Practices for Electricians and Electrical Workers, (Ministry of Commerce, 1990);
  - and their subsequent amendments and replacements.
- 2 Definitions
  - Organisational procedures* refer to documents that include: worksite rules, codes, and practices; equipment maintenance instructions and status requirements; and health and safety requirements.
  - Robotic equipment* for the purposes of this unit standard refers to robots, input/output devices, and safety circuits.

---

### Outcomes and performance criteria

#### Outcome 1

Find and repair electrical faults and perform test routines on robots.

Range AC drive, DC drive.

**Performance criteria**

- 1.1 Documentation for robot is assembled in the work area before fault diagnosis is commenced.
- Range manufacturer's information, maintenance instructions, safety procedures.
- 1.2 Testing for faults is conducted in accordance with organisational procedures.
- 1.3 The cause/s of electrical faults are correctly diagnosed.
- 1.4 Robot is repaired and tested in accordance with organisational procedures.
- 1.5 Fault and repair details are documented in accordance with organisational procedures.

**Outcome 2**

Find and repair electrical faults and perform test routines on robotic input/output devices.

Range input, output.

**Performance criteria**

- 2.1 Documentation for input/output device is assembled in the work area before fault diagnosis is commenced.
- Range manufacturer's information, maintenance instructions, safety procedures.
- 2.2 Testing for faults is conducted in accordance with organisational procedures.
- 2.3 The cause/s of electrical faults is/are correctly diagnosed.
- 2.4 Input/output device is repaired and tested in accordance with organisational procedures.
- 2.5 Fault and repair details are documented in accordance with organisational procedures.

**Outcome 3**

Find and repair electrical faults and perform test routines on robotic safety circuits.

Range a minimum of two circuits.

**Performance criteria**

- 3.1 Safety issues to be considered when working on hardwired emergency stop circuits are described.

- 3.2 Documentation for safety circuit is assembled in the work area before fault diagnosis is commenced.  
 Range manufacturer's information, maintenance instructions, safety procedures.
- 3.3 Testing for faults is conducted in accordance with organisational procedures.
- 3.4 The cause/s of electrical faults is/are correctly diagnosed.
- 3.5 Safety circuit is repaired and tested in accordance with organisational procedures.
- 3.6 Fault and repair details are documented in accordance with organisational procedures.

**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	26 August 2002	31 December 2026
Review	2	26 September 2024	31 December 2026

<b>Consent and Moderation Requirements (CMR) reference</b>	0013
--	------

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