

Title	Fault-find, test, and commission electric motors		
Level	4	Credits	4

Purpose	<p>This unit standard covers fault-finding and testing of electric motors, and is for people wishing to qualify in the electrical industry as electricians or electrical service technicians.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – fault-find electric motors; and – test and commission electric motors
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Classification	Electrical Engineering > Electrical Machines
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Available grade	Achieved
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Guidance Information

- 1 This unit standard has been developed for learning and assessment on-job.
- 2 This unit standard and unit standards 29443 and 29444 together meet the assessment requirements of ERAC CEPC 14.
This unit standard and unit standards 29443, 29444, and 29483 together meet the assessment requirements of ERAC EPC 15.
This unit standard and unit standards 15848, 29421, 29422, 29443, 29444, 29481, 29483, and 29557 together meet the assessment requirements of ERAC CEPC 54.
- 3 Definitions
CEPC – Critical Essential Performance Capabilities.
EPC – Essential Performance Capabilities.
ERAC – Electrical Regulatory Authorities Council.
EWRB – Electrical Workers Registration Board.
Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.
- 4 Range
 - a Motor types may include single-phase and three-phase motors and d.c.
 - b Evidence is required for any two types of motors with genuine faults.
 - c Candidates may refer to current legislation and Standards during assessment.
 - d Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.

- e All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:
 - i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - v applicable site, enterprise, and industry practice; and,
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Fault-find electric motors.

Performance criteria

- 1.1 Identify visible and audible defects.
- 1.2 Use logical techniques to analyse symptoms and where necessary, take electrical measurements to locate faults and/or faulty components.
 - Range mechanical, supply, windings, load.
- 1.3 Assess repair viability in terms of repair or replacement.

Outcome 2

Test and commission electric motors.

Performance criteria

- 2.1 Test to confirm that all requirements of current regulations and standards have been met and that the motor is safe to reconnect to the supply.
- 2.2 Test motor performance against specifications or records of previous performance.
 - Range dynamometer or in-situ connected-load tests, power factor, line current, speed, output.
- 2.3 Document test results in accordance with company requirements.

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	21 July 2016	31 December 2027
Review	2	24 March 2022	31 December 2027
Rollover and Revision	3	25 May 2023	31 December 2027

Consent and Moderation Requirements (CMR) reference

0003

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