



Australian Government

**Assessment Requirements for AURETA001
Analyse and evaluate electrical and
electronic faults in electronic over hydraulic
systems**

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Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- analyse and evaluate an electrical or electronic fault in the electronic over hydraulic systems of two different vehicles or machinery
- the above faults must involve two of the following systems:
 - traction motion control
 - excavator bucket control
 - steering control
 - crane ram control
 - garbage compactor control.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) or occupational health and safety (OHS) requirements relating to analysing and evaluating electrical and electronic faults in electronic over hydraulic systems, including procedures for:
 - identifying hazards and controlling risks associated with wearing jewellery while working around high current wiring systems
 - working with high pressure fluid hazards
 - tagging out and isolating machines, and wheel chocking
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from electronic over hydraulic systems
- principles and processes involved in planning and implementing analysis and evaluation of electrical and electronic faults in electronic over hydraulic systems

- design and planning of diagnostic procedures of electronic over hydraulic system faults, including procedures for diagnosing:
 - hydraulic faults
 - mechanical faults
 - electrical faults
- procedures for analysing and evaluating electronic over hydraulic system faults, including:
 - system failure analysis
 - component failure analysis
- types, functions, operation and limitations of electronic over hydraulic systems, including:
 - gateway network control module
 - bus network topography
 - hydraulic control module functions
 - associated network electronic over hydraulic system components
 - sensor and actuator control and monitoring systems
 - control signal circuits
 - operator joystick control devices
 - solenoid and proportional valve control of hydraulic fluid
- testing procedures for electronic over hydraulic systems, including the use of:
 - digital multimeter
 - scan tool
 - oscilloscope
- types, functions, operation and limitations of diagnostic testing equipment required to analyse and evaluate electrical and electronic faults in electronic over hydraulic systems
- procedures for accessing and interpreting scan tool system data, including:
 - diagnostic trouble codes (DTCs), including:
 - conditions that set the DTCs
 - conditions for running DTCs
 - live data
 - freeze frame data
 - waveforms
- procedures for documenting and reporting the analysis and evaluation process
- requirements of Australian Design Rules (ADRs) relating to electronic over hydraulic systems.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the electronic over hydraulic systems that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer electronic over hydraulic system specifications
- two different vehicles or machinery with faults in the electronic over hydraulic systems specified in the performance evidence
- diagnostic tools and equipment for vehicle or machinery electronic over hydraulic system fault diagnosis, including:
 - digital multimeter
 - scan tool
 - oscilloscope
- tools, equipment and materials appropriate for analysing and evaluating electronic over hydraulic systems.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

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