



Australian Government

UEEIC0019 Diagnose and rectify faults in servo drive systems

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to diagnose and rectify faults in system controlling servo drive systems.

It includes applying safe working practices; interpreting technical data; applying knowledge of servo/stepper drives operating parameters to logical fault-finding processes; implementing fault rectification, safety and functional testing; and reporting work activities and outcomes.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, skills and knowledge described in this unit require a relevant contract of training, such as an Australian Apprenticeship.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Permits may also be required for some work environments, such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

No other licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEEEL0024 Test and connect alternating current (a.c.) rotating machines

UEEEL0025 Test and connect transformers

UEEIC0020 Fault find and repair analogue circuits and components in electronic control systems

UEEIC0042 Solve problems in single phase electronic power control circuits

UEEIC0040 Solve problems in polyphase electronic power control circuits

Competency Field

Instrumentation & Control

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Prepare to diagnose and rectify servo drive system faults

- 1.1** WHS/OHS processes and workplace procedures for a given work area are identified, obtained and applied
- 1.2** Hazards are identified, WHS/OHS risks assessed, and control measures and workplace procedures are implemented in preparation for work
- 1.3** Safety hazards that have not previously been identified are documented and risk control measures devised and implemented in consultation with relevant person/s
- 1.4** Scope of fault/s is determined from fault report/s, relevant documentation and in consultation with relevant person/s
- 1.5** Relevant person/s is consulted to ensure work is coordinated effectively with others involved on the worksite
- 1.6** Tools, equipment and testing devices needed to diagnose faults are obtained in accordance with workplace procedures and checked for correct operation and safety

2 Diagnose and rectify servo drive system fault/s

- 2.1** WHS/OHS risk control measures and workplace procedures for carrying out work are followed
- 2.2** Need to inspect, test or measure live work is determined and conducted in accordance with WHS/OHS requirements and workplace procedures, as required
- 2.3** Circuits/machines/plant are inspected, checked and isolated, as required, in accordance with WHS/OHS requirements and workplace procedures
- 2.4** Logical diagnostic methods/techniques are applied to diagnose servo/stepper drive control system faults employing measurements and estimations of system

- operating parameters referenced to system operational requirements
- 2.5 Fault scenarios are tested and confirmed as being the source of system problems in accordance with workplace procedures
 - 2.6 Cause of the fault/s is identified and relevant person/s identified to rectify the fault/s, as required, outside the scope of the servo/stepper drive control system
 - 2.7 Faults in the control components of the system are rectified in accordance with servo drive control system operation standard
 - 2.8 System is inspected and tested to verify that the system operates as intended and to specified requirements
 - 2.9 Decisions for dealing with unplanned situations are determined from discussions with relevant person/s, job specifications and requirements
 - 2.10 Methods for dealing with unplanned situations are selected on the basis of safety and specified work outcomes
 - 2.11 Diagnosis and rectification activities are carried out efficiently, without unnecessary waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
- 3 Complete and report fault diagnosis and rectification activities**
- 3.1 WHS/OHS work completion risk control measures and workplace procedures are followed
 - 3.2 Worksite is made safe in accordance with workplace safety procedures
 - 3.3 Rectification of faults is documented in accordance with workplace procedures
 - 3.4 Relevant person/s is notified in accordance with workplace procedures that the system fault/s has been rectified

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of

competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Diagnosing and rectifying faults in servo drive systems must include at least two of the following:

- faults in a servo/stepper drive control system

Unit Mapping Information

This unit replaces and is equivalent to UEENEEI147A Diagnose and rectify faults in servo drive systems.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>