



Australian Government

UEEIC0001 Analyse complex electronic circuits controlling fluids

Release: 1

UEEIC0001 Analyse complex electronic circuits controlling fluids

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 analyse complex electronic circuits that integrate with the operation of fluid control systems on machinery.

It includes working safely, applying knowledge of equipment and electronic and fluid control circuit operations, gathering and analysing data, applying problem-solving techniques, and developing and documenting solutions and alternatives.

Typical problems are those encountered in meeting performance requirements and compliance standards, revising machine operating parameters and dealing with function.

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

Pre-requisite Unit

Not applicable

Competency Field

Instrumentation & Control

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to analyse complex circuits controlling fluids

PERFORMANCE CRITERIA

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

1.1 Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for a given work area are identified, obtained and applied

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| | 1.2 | Hazards are identified, WHS/OHS risks assessed, and control measures and workplace procedures implemented in preparation for work |
| | 1.3 | Scope of circuit analysis is determined from performance specifications, situation reports and in consultation with relevant person/s |
| | 1.4 | Activities are planned to meet scheduled timelines in consultation with person/s involved in the work |
| | 1.5 | Strategies are determined, solution developed and implemented in accordance with workplace procedures |
| 2 Undertake analysis of complex circuits controlling fluids | 2.1 | WHS/OHS risk control measures and workplace procedures for carrying out the work are followed |
| | 2.2 | Control concepts and electro-fluid control circuits are applied in developing analytical solutions to machine parameters/faults and operation |
| | 2.3 | Parameter specifications and performance requirements in relation to each circuit are obtained in accordance with workplace procedures and relevant industry standards |
| | 2.4 | Circuit parameters and specifications are analysed to provide the most effective solution/s in accordance with workplace procedures |
| | 2.5 | Unplanned events are dealt with safely and effectively consistent with regulatory requirements and workplace policies and procedures |
| | 2.6 | Quality of work is monitored in accordance with performance agreement and/or workplace procedures or relevant industry standards |
| 3 Document and report result/s of circuit analysis and action/s taken | 3.1 | Solutions to circuit analysis are inspected and tested to determine their effectiveness and modified as required |
| | 3.2 | Analysis is documented, including details of fault findings, calculations and assumptions |
| | 3.3 | Analysis is reported to appropriate person/s to determine suitable action/s to be taken based on fault-findings analysis |

- 3.4** Justification for analysis findings and any actions to be undertaken in relation to the equipment is documented for inclusion in work/project records in accordance with relevant industry standards and workplace procedures

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.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEI127A Analyse complex electronic circuits controlling fluids.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEEIC0001 Analyse complex electronic circuits controlling fluids

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying problem-solving techniques
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - implementing workplace procedures and practices
 - using of risk control measures
- analysing electronic circuits controlling fluids
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- documenting instruction for implementing any actions resulting from the analysis that incorporates risk control measure to be followed
- documenting justification of actions to be implemented in accordance with relevant industry standards
- forming effective strategies for analysing circuit performance
- inspecting and testing the results of the analysis
- obtaining circuit control parameters, specifications and performance requirements appropriate to each situation
- understanding the operation of electronic and fluid controls
- documenting and reporting on results of circuit analysis and actions taken
- preparing to analyse complex circuits controlling fluids.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- control system functions
- current industry practices and technologies
- electronic control of fluid processes
- identification of process characteristics from process test data

- interfacing electronics with hydraulic and pneumatic devices and systems
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant problem-solving techniques
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- selection of proportional valves to suit fluid applications.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities, equipment currently used in industry
- resources that reflect current industry practices in relation to analysing complex electronic circuits controlling fluids
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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