Australian Government

Assessment Requirements for UEEIC0025 Provide solutions to extra-low voltage (ELV) electro-pneumatic control systems and drives

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.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- establishing and documenting functions that the control and drive system is required to perform
- developing and documenting circuits for the electro-pneumatic control and drive systems that meet the required functions
- checking location of control field devices and adjusting to ensure correct functioning
- checking electro-pneumatic control and drive system components connections
- entering functions and parameters into programmable components correctly
- correcting programming anomalies
- testing and verifying correct operation
- reporting work completion to appropriate persons in accordance with established procedures
- dealing with unplanned events
- applying problem-solving techniques, including:
  - preparing to developing solutions
  - providing solutions
  - inspecting, testing and documenting solutions
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
  - implementing workplace procedures and practices
  - using of risk control measures.

Knowledge Evidence

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

- electrical and pneumatic control fundamentals, including:

- electrical and pneumatic safety encompassing:
  - hazardous and safe working methods and procedures
  - pneumatic operating pressures
  - isolation procedures
- electrical/pneumatic drawing types and applications encompassing:
  - drawing layouts and conventions (electrical and pneumatic schematics, wiring and piping diagrams)
  - drawing symbols
- electrical and pneumatic control system components encompassing:
  - electrical components, including power, human-machine interfaces (HMIs), relays, plug and socket connectors; pneumatic components, including air supply systems, HMIs, valves, actuators, tubing and connectors
- electrical relay types encompassing:
  - operation
  - contact configurations
- pneumatic control valves and actuators encompassing:
  - types and their operation
  - activated and deactivated configurations
- basic logic as applied to control systems
- logic confined to AND, OR, NOT and NOR functions
- variable speed drive (VSD) functions and configuration
- VSD functions and set-up, including:
  - basic function of a variable speed drive in controlling an induction motor
  - configuring a VSD encompassing:
    - setting rated motor voltage and current, digital and analogue inputs, speed range and ramp times
  - testing procedures
- 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.

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 simulated suitable 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 provide solutions to extra-low voltage (ELV) electro-pneumatic control systems and drives
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6