



Australian Government

Assessment Requirements for UEEIC0041 Solve problems in pressure measurement components and 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.

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 two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including applying risk control measures
- applying sustainable energy principles and practices
- completing work and documenting work activities
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- documenting completed work
- identifying pressure measurement components and systems
- solving problems in pressure measurement components and systems.

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:

- pressure transmitters and converters
- pressure measurement terms and transducers, including:
 - applications and common relationships
 - pressure and the relationship between applied pressure, density, mass, force, area and the height of liquid columns
 - transducer types, applications, connections and input/outputs (I/O) - measurement and evaluation
- manometers ,including:
 - types of manometers
 - operating principles of manometers
 - gauge pressure measurement
 - wet leg

- manometer applications
- manometer limitations
- absolute, gauge and atmospheric pressure measurement, including:
 - absolute and gauge pressure
 - absolute zero pressure
 - atmospheric pressure
 - barometers
 - absolute pressure gauges
- mechanical pressure measuring devices, including:
 - gauges: bourdon tube, spiral and helical
 - other mechanical pressure elements: bellows, capsule and slack/stiff diaphragms
 - pressure measurement using elastic deformation gauges
 - term: flexibility spring rate
- electrical pressure measuring devices, including:
 - electrical sensors for pressure measurements, including capacitive, piezo, inductive and strain gauge
 - testing elements and electrical signal transmission devices
- dead weight testers, including:
 - law of hydraulics
 - dead weight tester operating principles
 - dead weight tester operating procedures
 - terms: backlash, hysteresis and repeatability
 - calibration of gauges
 - precautions
 - bourdon tube gauges calibration
- testing and installation of pressure measurement devices, including:
 - testing
 - calibration
 - installation of pressure measurement devices within pressure vessel systems
 - isolation, seal, vent, drain and bypass valves location and operation sequence
- pressure transmitters and converters, including:
 - principle of operation of moment, motion and forced balanced transmitters for pneumatic, electrical, and electronic transmitter
 - applications of transmitters, converters and connections
 - calibration of transmitters
 - principle of operation of signal converters
 - applications of pressure converters
 - calibration of pressure converters
- problem solutions in pressure measurement systems
- relevant job safety assessments or risk mitigation processes, including risk control measures

- relevant manufacturer specifications
- relevant materials, tools and equipment
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles and practices
- testing and installation of pressure measurement devices, including device calibration
- live electrical components.

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 workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in 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 other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- 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>