



Australian Government

Assessment Requirements for MEM18109 Troubleshoot instrumentation systems and equipment

Release: 2

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Modification History

Release 2. Prerequisite units updated

Release 1. New unit

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, SOPs and safe work practices
- identifying and interpreting specifications, drawings, manufacturer manuals, history files and maintenance and repair records, and other applicable reference documents and obtaining relevant data with respect to troubleshooting instrumentation systems/equipment
- isolating instrumentation system/equipment in accordance with procedures
- checking and verifying the operational functions of the instrumentation system/equipment, including reading/recording and interpreting built-in fault indicators and error codes
- conducting appropriate tests to establish fault condition using applicable test equipment using hardware and software techniques
- repairing fault condition to meet specification requirements
- isolating and removing faulty major component and selecting replacement item from appropriate sources
- undertaking appropriate tests on instrumentation system/equipment in accordance with SOPs
- verifying system to meet operational requirements
- completing all documentation in accordance with SOPs.

Knowledge Evidence

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

- safe work practices and procedures and use of PPE
- instrumentation principles controlling density, level, flow, temperature and composition of a range of materials
- effects of resistance, capacitance, inductance and impedance (R, L, C) upon electrical circuit
- interpretation requirements of schematic, wiring and block diagrams and circuits
- principles of hydraulic, pneumatic and electrical flow
- purpose/operational function of instrumentation system

- equipment and techniques to be used to test instrumentation systems and equipment, including the use of specialised test equipment
- procedures for running built-in test functions and recording identified faults
- functional tests to be carried out under normal, extreme, overload and environmental conditions
- specifications of each instrumentation system and acceptable deviations from specifications
- correct operation of the instrumentation system, including the procedures for isolating instrumentation systems
- range of faults in instrumentation system/equipment components
- variations between test results and operational specifications
- probable causes of faults in instrumentation system/equipment components and action to be taken to rectify the causes of faults
- sequence of events to be undertaken to correct faults in the instrumentation system/equipment components
- difference between real and potential faults
- function and procedural checks on instrumentation systems/equipment.

Assessment Conditions

Assessors must:

- have vocational competency in troubleshooting instrumentation systems and equipment at least to the level being assessed with relevant industry knowledge and experience.
- satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* and comply with the *National Vocational Education and Training Regulator Act 2011* or equivalent legislation covering VET regulation in a non-referring State as the case requires.

Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturer specifications.

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.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

