



Australian Government

Assessment Requirements for MEM18054 Fault find, test and calibrate instrumentation systems and equipment

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM18054B Fault find, test and calibrate instrumentation systems and equipment

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, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, charts, lists, drawings and other applicable reference documents and obtain relevant data with respect to the operation of the instrumentation systems/equipment
- locating, inspecting and testing a range of instrumentation system components
- isolating instrumentation system/equipment in accordance with procedures
- checking the individual components for correct operation using applicable test equipment
- reporting faults and developing a corrective action plan in accordance with SOPs
- recording and documenting the action plan in accordance with SOPs
- dismantling, repairing and reassembling faulty components by selecting replacement parts from manufacturer/supplier catalogues
- checking repaired/replaced instrumentation system components for correct operation and completing all service reports
- checking and verifying the operational functions of the instrumentation system/equipment including reading/recording and interpreting built-in fault indicators and error codes
- undertaking zero, span and range checks on instrumentation system/equipment in accordance with SOPs
- calibrating instrumentation system/equipment to prescribed procedures and operational specifications.

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 personal protective equipment (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 an electrical circuit

- interpretation requirements of schematic, wiring and block diagrams and circuits
- principles of hydraulic, pneumatic and electrical flow
- calibration procedures of instrumentation systems and equipment/components
- purpose/operational function of instrumentation system
- procedures for:
 - inspecting and testing instrumentation system and equipment to be used
 - repairing faulty instrumentation system
 - dismantling, reassembly and testing techniques
 - checking and verifying the operational function of the instrumentation system/equipment and operational specifications
 - recording and completing service reports and reporting faults
 - recording/documenting test and calibration results
- 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
- errors indicated by built-in devices
- methods of determining procedures
- difference between real and potential faults
- function and procedures for zero, span and range checks on instrumentation systems/equipment
- equipment required to carry out the calibration of instrumentation systems/equipment.

Assessment Conditions

- Assessors must:
 - have vocational competency in fault finding, testing and calibrating 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* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory 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. This must 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 manufacturing 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>