



Australian Government

MEM12004 Perform precision electrical/electronic measurement

Release: 1

MEM12004 Perform precision electrical/electronic measurement

Modification History

Release 1. Supersedes and is equivalent to MEM12004B Perform precision electrical/electronic measurement

Application

This unit of competency defines the skills and knowledge required to undertake precision measurements across a range of frequencies on the full range of electrical/electronic equipment including a.c., d.c., analogue, digital and microwave equipment.

Where interpretation of technical drawings is required unit MEM09002 Interpret technical drawing should also be selected.

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

Band:

This unit has dual status and is to be regarded as both a specialisation Band A unit and Specialisation Band B unit for progression to C7 (AQF level IV).

Unit Weight: 4

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information

Competency Field

Measurement

Elements and Performance Criteria

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

- | | | | |
|---|----------------------|-----|---|
| 1 | Determine job | 1.1 | Follow standard operating procedures (SOPs) |
|---|----------------------|-----|---|

Elements describe the essential outcomes.

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

	requirements	1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, sketches, job sheets or work instructions
2	Use equipment for precision measurement	2.1	Select appropriate equipment to achieve specified outcome
		2.2	Check the accuracy of the measuring equipment
		2.3	Use correct and appropriate measuring techniques
		2.4	Interpret readings and measurements
3	Maintain precision equipment	3.1	Set up equipment to specifications utilising manufacturers' specifications or standard techniques
		3.2	Adjust and maintain measuring equipment to required accuracy, utilising manufacturers' specifications or standard techniques
		3.3	Undertake care and storage of equipment to manufacturers' specifications or SOPs

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Equipment for precision measurement includes one (1) or more of the following:

- analogue and digital meters
- cathode ray oscilloscopes
- bridges and potentiometers
- wattmeters
- digital probes

Measurement includes one (1) or more of the following:

- peak and transient voltages
- transient frequencies
- digital wave form analysis

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM12004B Perform precision electrical/electronic measurement

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MEM12004 Perform precision electrical/electronic measurement

Modification History

Release 1. Supersedes and is equivalent to MEM12004B Perform precision electrical/electronic measurement

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 measurement requirements from specifications, including sketches and job instructions, schematics, diagrams and technical manuals
- selecting appropriate measuring equipment to achieve the required outcome
- checking the accuracy of the selected measuring equipment where appropriate
- setting up measuring equipment where appropriate
- obtaining measurements and making appropriate connections in a safe and effective manner, interpreting results and recording measurements, as required
- storing and maintaining measuring equipment, including undertaking routine care according to manufacturer's specifications or 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 personal protective equipment (PPE)
- specifications of the circuitry and/or components to be tested
- specifications of precision electrical/electronic measuring devices
- application of a range of precision electrical/electronic measuring devices
- procedures/techniques for obtaining and setting a range of electrical/electronic measurements
- units of measurement used in conjunction with precision electrical/electronic measurement
- specifications of the equipment to be set
- tools and equipment to be used in setting precision electrical/electronic measuring devices
- adjustments and procedures that can be made to a range of precision electrical/electronic measuring devices
- procedures for storing precision electrical/electronic measuring devices.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing precision electrical/electronic measurement 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>