



Australian Government

Department of Education, Employment and Workplace Relations

MEM12004B Perform precision electrical/electronic measurement

Release: 2

MEM12004B Perform precision electrical/electronic measurement

Modification History

Single band identifier removed to clarify dual status

Unit Descriptor

Unit descriptor	This unit covers using precision measuring equipment, setting measuring devices and maintaining precision equipment.
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Application of the Unit

Application of the unit	<p>This unit applies to the identification of measuring requirements, the selection of appropriate measuring devices and calibration and care of devices to obtain accurate, precision measurements.</p> <p>Measurement includes range of frequencies and may be undertaken on the full range of electrical /electronic equipment including a.c., d.c., analog and digital equipment, microwave.</p> <p>Work is undertaken onsite and/or workshop/laboratory environment.</p> <p>Band:</p> <p>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).</p> <p>Unit Weight: 4</p>
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Use equipment for precision measurement	1.1. Specifications are interpreted accurately from drawings, instructions. 1.2. Appropriate equipment is selected to achieve specified outcome. 1.3. Correct and appropriate measuring techniques are used. 1.4. Readings and measurements are interpreted correctly and accurately.
2. Set measuring devices	2.1. Equipment is set up to specifications utilising manufacturers' or standard operating techniques.
3. Maintain precision equipment	3.1. Measuring equipment is adjusted and maintained to required accuracy, utilising manufacturers' specifications or standard operating techniques. 3.2. Care and storage of equipment is undertaken to manufacturers' specifications or standard operating procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- interpreting drawings, specifications, data sheets and instructions
- taking measurements using precision electrical/ electronic measuring devices
- interpreting measurements for a range of precision electrical/electronic measuring devices
- setting and adjusting precision electrical/electronic measuring devices
- maintaining and storing precision electrical/electronic measuring devices

Required knowledge

Look for evidence that confirms knowledge of:

- specifications of the circuitry and/or components to be tested
- application of a range of precision electrical/electronic measuring devices

REQUIRED SKILLS AND KNOWLEDGE

- procedures/techniques for obtaining a range of electrical/electronic measurements
- units of measurement used in conjunction with precision electrical/electronic measurement
- procedures for setting a range of precision electrical/electronic measuring devices
- specifications of the equipment to be set
- tools and equipment to be used in setting precision electrical/electronic measuring devices
- adjustments that can be made to a range of precision electrical/electronic measuring devices
- procedures for adjusting and maintaining a range of precision electrical/electronic measuring devices
- procedures for storing precision electrical/electronic measuring devices
- specifications of precision electrical/electronic measuring devices

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	<p>A person who demonstrates competency in this unit must be able to perform precision electrical/electronic measurement.</p>
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.</p>
Context of and specific resources for assessment	<p>This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is the candidate is not in productive work, then an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.</p> <p>This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with precision electrical/electronic measurement or other units requiring the exercise of the skills and knowledge covered by this unit.</p>
Method of assessment	<p>Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.</p>
Guidance information for	

EVIDENCE GUIDE

assessment	
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Equipment for precision measurement	Analog and digital meters, cathode ray oscilloscopes, bridges and potentiometers, wattmeters and digital probes etc.
Measurement	Peak and transient voltages, transient frequencies, digital wave form analysis etc.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Measurement
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