



Australian Government

Department of Education, Employment and Workplace Relations

MEM12002B Perform electrical/electronic measurement

Release: 1

MEM12002B Perform electrical/electronic measurement

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers selecting and using basic electro-measuring devices to check variables and the ability to maintain the devices.
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Application of the Unit

Application of the unit	This unit applies to the measurement of voltage, current, resistance, power, frequency etc. on a.c. and d.c. circuits up to 1000 volts, using appropriate measuring devices and for a range of general applications. Measurement skills for specific applications and context are covered by other units. For simple measurement tasks such as reading of fixed devices, testing continuity, and tasks requiring the use of devices mounted in measuring jigs etc. Unit MEM12023A (Perform engineering measurements) and/or Unit MEM12001B (Use comparison and basic measuring devices) should be considered. If electrical/electronic measuring devices require the connection or disconnection of circuitry, the appropriate units should also be selected. In circumstances where the application of this unit or where legislation dictates, relevant units covering first aid and/or emergency procedures should also be considered. Band: A Unit Weight: 2
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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 electro-measuring devices to measure variables	1.1. Appropriate device or equipment and setting is selected to obtain required measurement. 1.2. Appropriate connections are made to obtain required measurement according to standard operating procedure. 1.3. Readings are obtained and interpreted correctly and conversion is made where necessary into the required units of measurement.
2. Maintain electro devices	2.1. Routine care and storage of devices is undertaken to manufacturer's 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:

- setting and using electro-measuring devices
- obtaining and interpreting specified electrical measurements
- selecting appropriate measuring devices
- performing arithmetic operations required to convert measurements into appropriate units of measurement
- maintaining and storing electro-measuring devices
- reading and interpreting information on standard operating procedures

Required knowledge

Look for evidence that confirms knowledge of:

- terminology and concepts relating to electrical/electronic measurement
- the selection of different measuring devices for particular applications within the scope of this unit
- specifications of selected electro-measuring devices
- the application of the settings on each electro-measuring device
- the procedures for obtaining electrical/electronic measurements
- procedures for connecting electro-measuring devices to circuitry

REQUIRED SKILLS AND KNOWLEDGE

- the correct scale for each setting on the electro-measuring device
- the scale factor to be applied to readings taken from the electro-measuring device
- the units applying to electrical and electronic measurements
- maintenance and storage requirements for a range of electro-measuring devices
- that devices can impact on the circuit condition
- relevant State/Territory or Commonwealth legislative and regulatory requirements, industry standards, NOHSC guidelines and code of practice
- hazards and control measures associated with electrical/electronic measurement
- safe work practices and procedures
- use and application of personal protective equipment

Evidence Guide

EVIDENCE GUIDE	
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.	
Overview of assessment	A person who demonstrates competency in this unit must be able to perform electrical/electronic measurement.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	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.
Context of and specific resources for assessment	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. This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with electrical/electronic measurement or other units requiring the exercise of the skills and knowledge covered by this unit.
Method of assessment	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.
Guidance information for assessment	

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.

Appropriate device or equipment	Analogue/digital multi meters, clip-on meter, oscilloscopes, potentiometers determined according to the type of measurement being taken
Routine care	Zero and linear adjustments, inspection, check for serviceability and safe operation

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Measurement
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