



Australian Government

Department of Education, Employment and Workplace Relations

MEM18045B Fault find/repair electrical equipment/components up to 250 volts single phase supply

Release: 1

MEM18045B Fault find/repair electrical equipment/components up to 250 volts single phase supply

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers locating and rectifying faults in equipment and components using up to 250 V single phase power where these are disconnected from the electrical supply.
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Application of the Unit

Application of the unit	This unit covers the competencies required to locate and rectify faults in equipment and components using up to 250 V single phase power, where they are disconnected from their electrical supply. This would also typically cover plug-in appliances. Work is performed onsite. This unit also covers basic mechanical disconnection, dismantling and re-assembly of equipment components, enclosures, drives etc. This unit should not be selected if Unit MEM18046B (Fault find/repair electrical equipment/components up to 1000 volts a.c./1500 volts d.c.) has been selected. When work involves disconnection and reconnection of fixed-wired equipment, Unit MEM18049C (Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.) must also be selected. Band: A Unit Weight: 4
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM09002B	Interpret technical drawing
	MEM10002B	Terminate and connect electrical wiring
	MEM12002B	Perform electrical/electronic measurement
	MEM12023A	Perform engineering measurements
	MEM18001C	Use hand tools
	MEM18002B	Use power tools/hand held operations

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. Locate fault	1.1. Equipment/<i>component</i> function is determined by reference to circuit diagrams, schematics, manual and/or consultation with technical adviser. 1.2. Where required, equipment is correctly isolated from power supply. 1.3. Where appropriate, built-in fault indicators and error codes are examined and correctly interpreted, and results are recorded to standard operating procedures. 1.4. Equipment/component is checked and tested using correct and <i>appropriate techniques</i>, procedures, tools and <i>test equipment</i>. 1.5. Check and test results are correctly interpreted and, where required, verified. 1.6. Equipment/component fault is identified and localised. 1.7. Equipment/component fault/s are correctly recorded to standard operating procedures.
2. Rectify faults	2.1. Using correct and appropriate techniques, procedures, tools and equipment, equipment/component/s are repaired, replaced or adjusted to specification or manufacturers' requirements. 2.2. Equipment/component is checked and tested using correct and appropriate techniques, procedures, tools and equipment for compliance with site or manufacturers' specifications. 2.3. Where appropriate, rectifications report is recorded to 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:

- obtaining circuit diagrams, specifications, schematics
- isolating electrical equipment/component from the power supply
- tagging and checking isolated electrical equipment/component
- locating and reading/recording built-in fault indicators

REQUIRED SKILLS AND KNOWLEDGE

- checking and testing electrical equipment/component for correct operation
- verifying variations from specifications indicated by initial test results
- identifying and localising faults in electrical equipment/ components
- recording/reporting faults in the electrical equipment/components
- repairing, replacing or adjusting electrical equipment/components to specification
- referencing supplier catalogues
- confirming that the electrical equipment/components have been returned to specification
- recording rectification of the electrical equipment/ components

Required knowledge

Look for evidence that confirms knowledge of:

- operation and characteristics of active and passive components
- basic motor operation of various types
- function of the electrical equipment/component within the circuit
- hazards associated with the electrical equipment/component
- relevant regulatory requirements
- electrical equipment/component isolation procedures
- test equipment to be used to verify isolation of the electrical equipment/circuit
- errors indicated by built-in devices
- the procedures, tools, equipment and techniques to be used to test the operation of the electrical equipment/component
- reasons for selecting the chosen tools, equipment and techniques
- specifications of the electrical equipment/component
- variations between test results and specifications
- procedures for localising faults in electrical equipment/components
- procedures for recording/reporting faults in electrical equipment/components
- techniques/procedures for returning the electrical equipment/components to specification
- adjustments that can be made to electrical equipment/components
- procedures for confirming the electrical equipment/components have been returned to specification
- procedures for recording electrical equipment/component rectifications

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 fault find/repair electrical equipment/components up to 250 V single phase supply. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

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 fault finding/repair of electrical equipment/components up to 250 V single phase supply, 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,

EVIDENCE GUIDE	
	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.	
Components	Brushes, armatures, windings, relays, programmable controllers or other electronic switching devices
Appropriate fault finding techniques	Testing for voltage, current, frequency, polarity, phase, circuit continuity, insulation resistance, earth continuity etc.
Test equipment	Continuity testers, ammeters, voltmeters, multimeters, tong testers, wattmeters, etc.

Unit Sector(s)

Unit sector	
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Co-requisite units

Co-requisite units	

Competency field

Competency field	Maintenance and diagnostics
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