



Australian Government

MEM18051 Fault find and repair/rectify complex electrical circuits

Release: 1

MEM18051 Fault find and repair/rectify complex electrical circuits

Modification History

Release 1. Supersedes and is equivalent to MEM18051B Fault find and repair/rectify complex electrical circuits

Application

This unit of competency defines the skills and knowledge required to locate and repair/rectify faults in interconnected electrical circuits.

It applies to work on interconnected electrical circuits where electrical equipment and/or components are connected electrically, that is, there are multiple electrical power supplies or sources, voltages or circuits which are found in the control or switching of the circuit.

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

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 C5 (AQF level V).

Band: A

Unit Weight: 6

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM10002	Terminate and connect electrical wiring
MEM10003	Install and test electrical wiring and circuits up to 1000 volts a.c. and 1500 volts d.c.
MEM12002	Perform electrical/electronic measurement
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information

MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18048	Fault find and repair/rectify basic electrical circuits
MEM18049	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.

Competency Field

Maintenance and diagnostics

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		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, drawings, job sheets or work instructions
2	Locate fault	2.1	Determine circuit/system function and characteristics by reference to circuit diagrams, specifications, schematics and/or consultation with technical adviser
		2.2	Examine and interpret built-in fault indicators and error codes and record results to procedures, where appropriate
		2.3	Isolate circuit power supply
		2.4	Verify and localise faults using appropriate, tools and test equipment, procedures and techniques
		2.5	Record faults in accordance with SOPs

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

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|---|-----------------------------|-----|---|
| 3 | Repair/rectify fault | 3.1 | Repair/replace or adjust circuit/s to specifications or manufacturers' requirements |
| | | 3.2 | Check and test circuit/s for compliance with site or manufacturers' specifications |
| | | 3.3 | Record repair/rectification report in accordance with 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.

Specifications/regulations and drawings include one (1) or more of the following:

- legislative acts
- wiring rules
- other standards
- specifications
- electrical and architectural drawings

Appropriate fault-finding techniques include testing for the following:

- voltage
- current
- frequency
- polarity
- phase
- circuit continuity
- insulation resistance
- earth continuity

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Test equipment includes one (1) or more of the following:

- continuity testers
- ammeters
- voltmeters
- multimeters
- tong testers
- wattmeters
- cathode ray oscilloscopes

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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