



**Australian Government**

# **MEM18048 Fault find and repair/rectify basic electrical circuits**

**Release: 1**

# MEM18048 Fault find and repair/rectify basic electrical circuits

## Modification History

Release 1. Supersedes and is equivalent to MEM18048B Fault find and repair/rectify basic electrical circuits

## Application

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

It applies to work on basic circuits which are defined as single circuits with single outputs. The single circuits may be controlled by one or more devices and the output may control one or more devices.

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

**Band: A**

**Unit Weight: 12**

## 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                                             |
| 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 <b>Determine job requirements</b>       | <ul style="list-style-type: none"><li>1.1 Follow standard operating procedures (SOPs)</li><li>1.2 Comply with work health and safety (WHS) requirements at all times</li><li>1.3 Use appropriate personal protective equipment (PPE) in accordance with SOPs</li><li>1.4 Identify job requirements from specifications, drawings, job sheets or work instructions</li></ul>                                                                                                                                                                          |
| 2 <b>Locate fault</b>                     | <ul style="list-style-type: none"><li>2.1 Determine circuit function and characteristics by reference to circuit diagrams, specifications, schematics and/or consultation with technical adviser</li><li>2.2 Examine and interpret built-in fault indicators and error codes and record results to procedures, where appropriate</li><li>2.3 Isolate circuit from power supply</li><li>2.4 Verify and localise faults using appropriate tools, test equipment, procedures and techniques</li><li>2.5 Record faults in accordance with SOPs</li></ul> |
| 3 <b>Repair/rectify fault</b>             | <ul style="list-style-type: none"><li>3.1 Repair/replace or adjust circuit/s to specifications or manufacturers' requirements</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                              |

Elements describe the essential outcomes.

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

- 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

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

- continuity testers
- ammeters
- voltmeters
- multimeters

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- 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>