



Australian Government

MEM10003 Install and test electrical wiring and circuits up to 1000 volts a.c. and 1500 volts d.c.

Release: 1

MEM10003 Install and test electrical wiring and circuits up to 1000 volts a.c. and 1500 volts d.c.

Modification History

Release 1. Supersedes and is equivalent to MEM10003B Install and test electrical wiring and circuits up to 1000 volts a.c and 1500 volts d.c

Application

This unit applies engineering tradesperson involved in installation of electrical wiring/systems and/or enclosures, including specialist cables, using a full range of installation materials and techniques to any wiring circuits which are directly or indirectly connected to a power supply system of electrical wiring and circuits up to 1000 volts a.c. and 1500 volts d.c used for heating, ventilation, air conditioning and refrigeration (HVAC/R).

The scope of work includes modifying existing electrical work and electrical equipment work to relevant specifications/regulations and drawings.

Some jurisdictions may require the holder of this unit to be licensed or certified and users should check with the relevant authorities.

Band: A

Unit Weight: 12

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM10002	Terminate and connect electrical wiring
MEM12002	Perform electrical/electronic measurement
MEM12023	Perform engineering measurements
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

Installation and commissioning

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 | <ul style="list-style-type: none">1.1 Follow standard operating procedures (SOPs)1.2 Comply with work health and safety (WHS) requirements at all times1.3 Ensure emergency first aid equipment, documentations and procedures are in place and understood1.4 Use appropriate personal protective equipment (PPE) in accordance with SOPs1.5 Identify job requirements from specifications, drawings, job sheets or work instructions |
| 2 Plan the installation | <ul style="list-style-type: none">2.1 Determine special work, hazard and safety requirements and incorporate in plan2.2 Devise work plan/strategy and confirm in accordance with legislative and regulatory requirements and procedures |
| 3 Prepare for electrical installation | <ul style="list-style-type: none">3.1 Undertake all work safely and to workplace procedures, state/territory regulations and legislative requirements3.2 Check materials for correct specifications3.3 Determine the need to test or measure live in strict accordance with WHS requirements and when necessary conducted within established safety procedures3.4 Check that circuits/machines/plant is isolated where necessary in strict accordance WHS requirements and procedures |
| 4 Install the wiring/enclosures and/or support systems | <ul style="list-style-type: none">4.1 Ensure all cables/conductors/conduit/enclosures and support systems are installed to specifications using correct appropriate techniques, tools and equipment4.2 Terminate cables and conductors to accessories and |

Elements describe the essential outcomes.

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

appliances in accordance with manufacturer's specifications and regulatory requirements

4.3 Mark cabling or label for identification and to specification

5 Commission and test the installed wiring system

5.1 Test all completed wiring/systems and enclosures for compliance with specifications, regulations, and legislative requirements, utilising appropriate test procedures and equipment

5.2 Energise the installation and test for compliance with specifications

5.3 Rectify faults as required to meet specification

5.4 Complete documentation to required specifications

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.

Installation includes the following:

- electrical installation work and electrical equipment work 1000 volts a.c. and 1500 volts d.c. to existing HVAC/R system and involving utilisation of a range of methods, tools and equipment appropriate to the work

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

- legislative acts
- Wiring Rules
- other standards
- specifications

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- electrical and architectural drawings

Cables/conductors include one (1) or more of the following:

- single insulated
- thermoplastic insulated and sheathed
- flat and circular
- MIMS
- steel wire armoured
- flexible cords and cables
- copper and aluminium
- catenary systems
- shielded

Conduit/enclosures include the following:

- metallic and non-metallic

Support systems include one (1) or more of the following:

- trunking
- ducting
- cable tray/ladder
- catenaries

Documentation includes one (1) or more of the following:

- work documentation
- short reports required to meet regulatory requirements
- safe work method statements (SWMS)
- job safety analysis (JSA)
- work permits

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>