



Australian Government

**MEM27023 Diagnose and rectify fieldbus
circuits in mobile and stationary plant and
equipment**

Release: 1

MEM27023 Diagnose and rectify fieldbus circuits in mobile and stationary plant and equipment

Modification History

Release 1: New Unit

Application

This unit of competency defines the skills and knowledge required to carry out diagnosis and rectification of circuits used in controller area network (CAN) and other fieldbus systems and control technology components in mobile and stationary plant.

It applies to systems and components that do not require a host computer. The unit can apply to circuits used for communication with and between systems and components, including systems for engine management, suspension, hydraulics and pneumatics, chassis and body management, braking systems, mechanical, electrical and hydraulic drives, lighting control, air conditioning, vehicle guidance and telemetry.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18055	Dismantle, replace and assemble engineering components
MEM27006	Diagnose and rectify batteries, low voltage sensors and circuits

Competency Field

Fixed and Mobile Plant

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 Identify bus and control system components and location | 2.1 Examine appropriate drawings, specifications and manuals for bus and control system information
2.2 Perform a visual inspection of equipment and identify location and any obvious faults in bus and control system wiring and components |
| 3 Check bus and control system wiring and rectify faults | 3.1 Ensure battery is charged and charging system is operating correctly
3.2 Test voltage supply, input voltage and ground |
| 4 Assess and rectify wiring faults | 4.1 Isolate wiring and sensor faults
4.2 Determine replacement sensors and cables/wires, including size and insulation quality
4.3 Make up wiring looms for application and securely fix
4.4 Strip, fit, prepare and terminate wiring and cables
4.5 Test terminated cables for continuity and to comply with requirements
4.6 Remove corrosion, neutralise and apply appropriate protective coating
4.7 Test sensors, relays, solenoids, contacts and circuits and |

Elements describe the essential outcomes.

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

repair/replace

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.

Circuits include one (1) or more of the following:

- bus communication
- module (node) power
- input power
- grounding
- engine control
- hydraulic systems
- pneumatic systems
- traction control
- mechanical drives
- chassis and body control
- braking
- air-conditioning
- load control
- exhaust and environmental systems
- tyre and track monitoring
- remote guidance and control
- doors and other access locks
- interior and exterior lighting
- seat adjustment
- power windows
- turning and other indicators
- low voltage electric motors

Control module applications include one (1) or more of the following:

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.

- hazard and brake lights
- sensors

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>