



Australian Government

**MEM18093 Maintain and repair integrated
industrial refrigeration and/or large air
handling system controls**

Release: 1

MEM18093 Maintain and repair integrated industrial refrigeration and/or large air handling system controls

Modification History

Release 1. Supersedes and is equivalent to MEM18093B Maintain and repair integrated industrial refrigeration and/or large handling system controls

Application

This unit of competency covers the skills and knowledge required for repairing/replacing integrated industrial refrigeration and/or air handling system controls.

This unit applies to installation, adjustment, repairs, replacements and overhauls undertaken to site or manufacturers' specifications, using application of principles of industrial refrigeration and/or air handling systems control sequencing.

A Refrigerant Handling Licence must be held by any person who carries out work in relation to refrigeration and air conditioning equipment.

Band: B

Unit Weight: 8

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM10002	Terminate and connect electrical wiring
MEM11011	Undertake manual handling
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.

MEM18055 Dismantle, replace and assemble engineering components

MEM18086 Test, recover, evacuate and charge refrigeration systems

Plus, one or more of the following including their prerequisites

MEM18090 Maintain and repair industrial refrigeration systems and components

MEM18089 Maintain and repair central air handling systems

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 Install/replace refrigeration/air handling system controls | 2.1 Identify control system/circuit components and inspect for compliance to specifications |
| | 2.2 Undertake sequential installation according to manufacturers' specifications and procedures |
| 3 Check and adjust refrigeration/air handling system | 3.1 Check the temperature, quality, pressure and properties of the air delivered by the air handling system for conformance to specification |

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
control sequence and operation	3.2 Check controls and system operation against operational specifications using appropriate test equipment and application of principles/techniques
	3.3 Perform adjustments to sequence system to meet/align to operational requirements and specifications
	3.4 Record modifications/alterations and report according to SOPs
	3.5 Check controls and system operation and commission to specifications
4 Fault find refrigeration/air handling system control circuits	4.1 Identify and inspect control system/circuit components
	4.2 Trace control system/circuit and diagnose action of components to identify and localise faults
	4.3 Test control system/circuit parts using appropriate test equipment and application principles
	4.4 Assess control system/circuit parts against operational specification
	4.5 Localise fault condition at the component level, evaluate faulty condition, analyse root cause and plan corrective action
5 Maintain, repair/replace system control components	5.1 Apply correct maintenance procedures according to procedures
	5.2 Use appropriate tools, equipment and techniques to test faulty items, repair or replace using sequential installation procedures according to manufacturers' specifications
	5.3 Select replacement items from manufacturers' catalogues
	5.4 Reassemble system control components to specification
6 Check and adjust	6.1 Identify circuit sensors and controllers

Elements describe the essential outcomes.

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

sequence of refrigeration/air handling system controls

- 6.2 Make necessary adjustments to sequence system control circuit and check correct operation to meet operational specification
- 6.3 Commission refrigeration/air handling system controls to specification
- 6.4 Adopt appropriate follow-up procedures
- 6.5 Complete service/maintenance 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.

Control sequencing includes one (1) or more of the following:

- programmable logic controllers (PLCs)
- relay logic control systems
- unitised/modular sensors
- transducers
- timers
- counters
- associated equipment

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

- pressure gauges
- multimeters
- ammeters
- insulation resistance tester
- cable analyser

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.

Modifications/alterations include one (1) or more of the following:

- pressure control settings
- timer settings
- thermostat settings

Must comply with manufacturers' specifications, and all changes in site drawings/documents should be documented

Corrective action includes one (1) or more of the following:

- replacement
- repair
- adjustment

Maintenance procedures include the following:

- testing of all control sequences
- testing of all safety devices

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>