



Australian Government

**Assessment Requirements for UEERA0097
Install, commission, service and maintain
variable refrigerant flow air conditioning
systems**

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- installing and commissioning multi head variable refrigerant flow (VRF) air conditioning systems in accordance with manufacturer specifications
- using manufacturer diagnostic tool to assist in finding two of the following faults on a variable refrigerant flow air conditioning system (Note: one fault to be applied to the VRF system on each occasion):
 - contaminants in the system
 - incorrect refrigerant charge
 - faulty pressure and temperature sensors
 - communication errors
 - faulty fan motors
 - faulty refrigerant metering device (RMD)
 - insufficient airflow
- completing required documentation and record keeping
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements
- applying relevant manufacturer specifications, Australian Standards, regulation and codes of practice.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- VRF air conditioning systems including:
 - different types, their components and application
 - operating principles (cooling, heat pump and heat recovery)
 - control principles

- operation in the heating and cooling cycles
- accessing manufacturer specifications and instructions
- VRF pipework including:
 - refrigerant pipe layout and installation requirements including:
 - pipe diameter, length and wall thickness
 - pipe branch orientation and connections
 - expansion and contraction of pipework
 - piping support
 - condensate and traps
 - technique for condensate flow testing
- VRF wiring including:
 - separation of power and communications cabling
 - communication wiring requirements and component addressing
- requirements for branch box installation location
- requirements for installation of multiple outdoor VRF units
- working with refrigerants in VRF systems including:
 - checking and adding charge of refrigerant
 - procedure to check system valves are open during pressure test and evacuation
 - refrigerant leakage concentration levels permitted in enclosed spaces
- symptoms of typical faults and repair techniques including:
 - contaminants in the system
 - incorrect refrigerant charge
 - faulty pressure and temperature sensors
 - communication errors
 - faulty electronically commutated (EC) motors
 - faulty refrigerant metering device (RMD)
 - insufficient airflow
- maintenance requirements specific to VRF systems
- commissioning requirements specific to VRF systems
- manufacturer programs and tools including:
 - built-in self-commission test
 - plug-in diagnostic tools.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, Australian Standards, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>