



Australian Government

Department of Education, Employment and Workplace Relations

AHCTEQ301A Install and terminate extra low voltage wiring systems

Release: 1

AHCTEQ301A Install and terminate extra low voltage wiring systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers the process of installing wiring enclosures, cable support systems, cables and accessories in electrical systems of 36 volts or less and defines the standard required to: plan, design and carry out installation of wiring enclosures, cable support systems, cables and accessories in electrical systems of 36 volts or less; undertake checks that the system conforms to requirements and operates effectively; read labels and signage to differentiate between extra low voltage and other electrical systems; size cables and wires to suit calculated load; check and notify completed installation activities; follow enterprise OHS procedures and safely work with extra low voltage systems.
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Application of the Unit

Application of the unit	This unit describes specialist work which is carried out independently within own area of responsibility.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for installation of extra low voltage wiring	1.1. Installation is planned and prepared to ensure OHS policies and procedures are followed, and the work is appropriately sequenced according to requirements. 1.2. Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others on the work site. 1.3. Cables and wires are sized to suit calculated load. 1.4. Wiring system components are checked against job requirements. 1.5. Accessories are obtained according to established procedures and to comply with organisational and task requirements. 1.6. Location in which specific items of accessories, apparatus and circuits are to be installed is determined from job requirements. 1.7. Materials necessary to complete the work are obtained according to established procedures and checked against the job requirement. 1.8. Tools, equipment and testing devices needed to carry out the installation work are obtained, following established procedures they are checked for correct operation and safety. 1.9. Preparatory work is checked to ensure that it complies with requirements and no unnecessary damage has occurred.
2. Install wiring systems	2.1. Occupational Health and Safety (OHS) policies and procedures for installing electrical wiring systems are followed. 2.2. Wiring systems are installed to meet requirements, without damage or distortion to the surrounding environment or services. 2.3. Accessories are terminated and wires are connected as required to solenoids and controllers, according to manufacturer and enterprise requirements. 2.4. Unplanned events or conditions are responded to using established procedures. 2.5. Approval is obtained from appropriate personnel according to established procedures before any contingencies are implemented. 2.6. On-going checks of the quality of the work are undertaken according to established procedures.
3. Check and notify	3.1. Final checks are undertaken to ensure the installed

ELEMENT	PERFORMANCE CRITERIA
completion of work	wiring systems conforms to requirements. 3.2. System is tested to ensure that it works. 3.3. Work completion is notified according to established procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- read labels and signage to differentiate between extra low voltage and other electrical systems
- read and follow enterprise procedures for irrigation system wiring
- size cables and wires to suit calculated load
- check and notify completed installation activities
- follow enterprise OHS procedures and safely work with extra low voltage systems
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required
- use numeracy skills to estimate, calculate and record routine workplace measures
- use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- basic electricity and electrical principles relating to extra low voltage wiring
- milking equipment, garden lighting and/or irrigation system wiring materials and techniques
- isolation and tagging procedures
- computerised controller systems
- enterprise policies and procedures
- testing equipment and procedures
- OHS guidelines for installing extra low voltage wiring.

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following: • plan, design and carry out installation of wiring enclosures, cable support systems, cables and accessories in electrical systems of 36 volts or less • undertake checks that the system conforms to requirements and operates effectively • read labels and signage to differentiate between extra low voltage and other electrical systems • size cables and wires to suit calculated load • check and notify completed installation activities • follow enterprise OHS procedures and safely work with extra low voltage systems.
Context of and specific resources for assessment	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole.	
Types of low voltage wiring systems may include:	• 36 volts or less.
Applications include:	• milking equipment systems such as pulsation systems • in irrigation systems between controllers and

RANGE STATEMENT

	system components such as solenoid valves
	• in domestic garden lighting systems.

Unit Sector(s)

Unit sector	Tools and equipment
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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