



**Australian Government**

**UEENEEI16A Assemble, enter and verify  
operating instructions in microprocessor  
equipped devices**

**Release: 2**

## UEENEEI16A Assemble, enter and verify operating instructions in microprocessor equipped devices

### Modification History

Release	Action	Core/Elective	Details	Points
		UEENEEI16A	Assemble, enter and verify operating instructions in microprocessor equipped devices	
2	Editorial	N/A	Show full pre-req chain in the unit.	
2	Editorial	N/A	In Required Skills and Knowledge, insert topic numbering.	
2	Editorial	N/A	Replace “essential knowledge and associated skills” with “required skills and knowledge”.	

### Unit Descriptor

#### Unit Descriptor

#### 1) Scope:

##### 1.1) Descriptor

This unit covers assembling and entering instructions in microprocessor-equipped devices (embedded system) with simple built-in programming function and verifying that the device operates as intended. It encompasses safe working practices, checking device installation, following written and oral instruction and procedures and completing necessary documentation.

Note:

Examples of devices are simple programmable relays, timers, temperature controllers, switches and basic detection devices for security and fire the like.

### Application of the Unit

#### Application of the Unit 2)

This unit is intended for competency development

entry-level employment-based programs incorporated in approved contracts of training. It may be used to augment previously acquired competencies.

Note:

1. Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control, lifting equipment. Permits may also be required for some work environments such as confined spaces, working aloft, near live electrical apparatus, site rehabilitation.

2. Compliance may be required in various jurisdictions relating to currency in First Aid, confined space, lifting and risk safety measures.

## Licensing/Regulatory Information

### License to practice 3)

The skills and knowledge described in this unit do not require a license to practice in the workplace. However, practice in this unit is subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

## Pre-Requisites

### Prerequisite Unit(s) 4)

### Competencies 4.1)

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEEE1 01A Apply Occupational Health Safety regulations, codes and practices in the workplace

## **Literacy and numeracy skills 4.2)**

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

Reading 3                  Writing 3                  Numeracy 3

## **Employability Skills Information**

### **Employability Skills 5)**

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

## **Elements and Performance Criteria Pre-Content**

<b>6)</b> Elements describe the essential outcomes of a competency standard unit	Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.
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## **Elements and Performance Criteria**

### **ELEMENT**

### **PERFORMANCE CRITERIA**

- |   |   |
|---|---|
| 1 Prepare to assemble and enter operating instructions. | 1.1 OHS procedures for a given work area are identified, obtained and understood through established routines and procedures. |
|   | 1.2 Established OHS risk control measures and procedures are followed in preparation for the work.                            |

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	1.3 Safety hazards that have not previously been identified are reported and advice on risk control measures is sought from the work supervisor.
	1.4 Work supervisor or customers are consulted to determine which functions of the device are to be use and the parameter of each
	1.5 Tools, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety.
	1.6 Device installation is checked for compliance with job specification and regulations where they apply.
2 Assemble and enter operating instructions.	2.1 Established OHS risk control measures and procedures for carrying out the work are followed.
	2.2 Circuits/machines/plant are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
	2.3 The required status of each function of the device is entered and their parameters set in accordance with manufacturer programming instructions.
	2.4 Entered data are checked as meeting those specified by the work supervisor or customer.
	2.5 Procedures for referring non-routine events to immediate supervisor for directions are followed.
	2.6 Tools, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety.
3 Test device operation and report.	3.1 Device operation is tested in strict accordance OHS requirements and procedures.
	3.2 Operating anomalies are identified and corrected in accordance with established routines.
	3.3 OHS work completion risk control measures and

## **ELEMENT**

## **PERFORMANCE CRITERIA**

procedures are followed.

- 3.4 Work site is cleaned and made safe in accordance with established procedures.
- 3.5 Work completion is reported and appropriate person(s) notified in accordance with established routines.

## **Required Skills and Knowledge**

### **REQUIRED SKILLS AND KNOWLEDGE**

8) This describes the required skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and entering and verifying operating instruction in basic microprocessor equipped devices.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

### **KS01-EI11 Microprocessor equipped devices**

#### **6A**

Evidence shall show an understanding of microprocessor equipped devices to an extent indicated by the following aspects:

## REQUIRED SKILLS AND KNOWLEDGE

- T1 Overview of digital controllers
- types
  - block diagram of controller
  - applications
  - terms
- T2 Controller input and output equipment
- input sensors (transducers)
  - current loop concepts
  - output current and voltage ratings
  - supplementary solid state relays/ contactors
- T3 Installation of controllers
- types of input sensors
  - wiring
  - mounting techniques
  - terminal types
  - output current protection
- T4 Configuration and digital controller set-up
- operator interfaces
  - manufacturer's data
  - testing

## Evidence Guide

### EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this unit and performed in accordance with the Assessment Guidelines of this Training Package.

### Overview of Assessment 9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.



**Critical aspects of evidence required to demonstrate competency in this unit 9.2)**

Before the critical aspects of evidence are considered all prerequisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines – UEE11. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the required skills and knowledge as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Enter and verify operating instructions in microprocessor equipped devices as described in 10) and including:
    - A Understanding required operating functions and parameters.
    - B Identifying non-compliance conditions of device installation.
    - C Entering functions and parameters correctly.

- D Correcting programming anomalies.
- E Testing and verify device operation.
- F Dealing with unplanned events by drawing on required skills and knowledge to provide appropriate solutions incorporated in a holistic assessment with the above listed items.

Note:

Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

**Context of and specific resources for assessment** 9.3)

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

Note:

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to enter and verifying operating instructions in microprocessor equipped devices.

**Method of assessment** 9.4)

This unit shall be assessed by methods given in Volume 1, Part 3

‘Assessment Guidelines’.

Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the required skills and knowledge described in this unit.

**Concurrent  
assessment and  
relationship with  
other units** 9.5)

There are no concurrent assessment recommendations for this unit.

## **Range Statement**

### **RANGE STATEMENT**

**10)** This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to assembling, entering and verifying operating instruction in at least two types of microprocessor equipped devices with built-in icon-based programmable functions such as programmable relays, timers, temperature controllers, detection devices for security and fire.

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

## **Unit Sector(s)**

Not applicable.

## Competency Field

Competency Field 11)

Instrumentation and Control