



Australian Government

UEEIC0034 Set up industrial field control devices

Release: 1

UEEIC0034 Set up industrial field control devices

Modification History

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

Application

This unit involves the skills and knowledge required to set up an industrial field control device.

It includes identifying, setting up, testing and documenting industrial field control device. It also includes following design briefs, operating principles, interpreting device specifications, following manufacturer specifications and testing device operation parameters.

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

Pre-requisite Unit

Where prerequisite pathways have been identified, all competencies in the Common Unit Group must be have been completed plus all the competencies in one (1) of the identified Pathway Unit Group(s)

Common Unit Group

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEIC0020 Fault find and repair analogue circuits and components in electronic control systems

UEEIC0018 Diagnose and rectify faults in digital controls systems

UEEEL0019 Solve problems in direct current (d.c.) machines

UEEEL0021 Solve problems in magnetic and electromagnetic devices

and

UEECD0043 Solve problems in direct current circuits

or

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

Electrical Pathway Group

UEEEL0003 Arrange circuits, control and protection for electrical installations

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits

UEEEL0008 Evaluate and modify low voltage heating equipment and controls

UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls

UEEEL0010 Evaluate and modify low voltage socket outlets circuits

UEEEL0024 Test and connect alternating current (a.c.) rotating machines

UEEEL0025 Test and connect transformers

Instrumentation and Control Pathway Group

UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits

UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals

UEEIC0041 Solve problems in pressure measurement components and systems

UEEIC0038 Solve problems in density/level measurement components and systems

UEEIC0039 Solve problems in flow measurement components and systems

UEEIC0043 Solve problems in temperature measurement components and systems

UEEIC0029 Set up and adjust PID control loops

UEEIC0030 Set up and adjust advanced PID process control loops

UEEIC0048 Verify compliance and functionality of instrumentation and control installations

UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks

Competency Field

Instrumentation & Control

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Identify industrial field control device

PERFORMANCE CRITERIA

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

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures are identified and applied
- 1.2** Hazards are identified, risks are assessed, and control

		measures implemented
	1.3	Industrial field control devices are determined from control system specifications and consultation with relevant person/s
	1.4	Work activities are planned to meet scheduled timelines in consultation with relevant person/s
	1.5	Tools, equipment and testing devices required for work are obtained in accordance with workplace procedures and checked for correct operation and safety
2 Set up industrial field control device	2.1	WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
	2.2	Industrial field control devices are set up and operated in accordance with manufacturer instructions
	2.3	Industrial field control devices are positioned and adjusted in accordance with operating principles manufacturer instructions
	2.4	Unplanned situations are responded to in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
	2.5	Industrial field control devices are set up using sustainable energy principles without waste of materials, damaging apparatus, surrounding environments or services in accordance with workplace procedures
3 Test and document set-up of industrial field control device	3.1	WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
	3.2	Operating anomalies are identified and corrected in accordance with workplace procedures
	3.3	Work completion is documented in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Setting up industrial field control devices must include at least four of the following:

- measurement/detection of flow
- temperature
- pressure
- density
- weight
- level
- smoke
- motion

Unit Mapping Information

This unit replaces and is equivalent to UEENEEI119A Set up industrial field control devices.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEEIC0034 Set up industrial field control devices

Modification History

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Performance Evidence

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

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including implementing risk control measures
- applying sustainable energy principles and practices
- complying with scheduled timeframes
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- documenting field control device set-up in accordance workplace procedures
- identifying field control devices to be set up
- positioning and adjusting devices in accordance with manufacturer operating instructions and system requirements
- preparing and setting up industrial field control devices
- testing and documenting setting up of industrial field control devices
- testing field devices and making final adjustments to correct anomalies.

Knowledge Evidence

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

- industrial processes and the terminology used in measurement, including:
 - forms of energy
 - general classification of transducers
 - measurement technology
 - static accuracy
- devices used in optoelectronic systems, including:
 - physics of light
 - spectral response
 - photometry

- light sources and detectors
- lens and mirror theory
- optoelectronic systems and photoelectric switches
- optoelectronic circuits
- the laser
- temperature detection and measurement and their circuit configurations, including:
 - introduction to temperature sensing
 - bimetallic and filled thermal sensors
 - thermocouples, resistance temperature detectors, thermistors, solid state temperature, sensors, integrated circuit temperature sensors and phrometers
 - control circuits using temperature detectors
- measurement of pressure, flow and chemical, including:
 - diaphragm, bellows and venturi
 - strain gauges and load cells
 - ultrasonic and magnetic flowmeters
 - measurement technology and accuracy
 - viscosity, humidity and pH
- linear, angular and rotary motion detection, including:
 - linear motion sensors
 - angular and rotary motion sensors
 - shaft angle encoders
 - linear encoders
 - tachometers
 - accelerometer and vibrometer
- proximity and level detection, including:
 - mechanical
 - ultrasonics
 - microwave
 - passive infrared
 - nucleonics
 - capacitive and inductive proximity
- industrial field control devices set-up, operation, positioning and adjustment
- relevant job safety assessments, including risk control measures
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles and practices.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

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 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:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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