



**Australian Government**

# **UEEIC0029 Set up and adjust PID control loops**

**Release: 1**

# UEEIC0029 Set up and adjust PID control loops

## 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 and adjust proportional-integral-derivative (PID) control loops

It includes working safely, applying problem-solving procedures, evaluating performance, using measuring devices, providing solutions to control problems and documenting solutions.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, skills and knowledge described in this unit require a relevant contract of training, such as an Australian Apprenticeship.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

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

## Pre-requisite Unit

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

UEECD0043 Solve problems in direct current circuits

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

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

## Competency Field

Instrumentation & Control

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare to work on process control loops**

#### **2 Solve process control loops problems**

### PERFORMANCE CRITERIA

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

- |            |                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1.1</b> | WHS/OHS processes and workplace procedures for a given work area are identified, obtained and applied                                                  |
| <b>1.2</b> | WHS/OHS risk control work preparation measures and workplace procedures are followed                                                                   |
| <b>1.3</b> | Scope of control problem is obtained from documentation and/or from work supervisor to determine work to be undertaken                                 |
| <b>1.4</b> | Advice is sought from the work supervisor to ensure the work is coordinated effectively with others                                                    |
| <b>1.5</b> | Sources of materials required for work are determined in accordance with workplace procedures                                                          |
| <b>1.6</b> | Tools, equipment and testing devices required to carry out work are obtained and checked for correct operation and safety                              |
| <b>2.1</b> | WHS/OHS risk control work measures and workplace procedures are followed                                                                               |
| <b>2.2</b> | Need to test and measure live work is determined in accordance with WHS/OHS requirements and workplace procedures                                      |
| <b>2.3</b> | Process controller/transmitters/converters and control loops are checked and isolated in accordance with WHS/OHS requirements and workplace procedures |
| <b>2.4</b> | Measured and calculated values are used for solving                                                                                                    |

|   |                                                  |                                                                                                                              |
|---|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|   |                                                  | process control loops problems                                                                                               |
|   | 2.5                                              | Unexpected situations are dealt with safely and in accordance with workplace procedures                                      |
|   | 2.6                                              | Problems are solved without damage to apparatus, the surrounding environment or services using sustainable energy principles |
| 3 | <b>Complete work and provide status report/s</b> |                                                                                                                              |
|   | 3.1                                              | WHS/OHS risk control work completion measures and workplace procedures are followed                                          |
|   | 3.2                                              | Status report/s is completed and work supervisor notified 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 and adjusting problems in PID controllers must include at least two of the following:

- determining the operating parameters of a controller in an existing control loop
- configuring/tuning a controller in an existing control loop to comply with specified operating parameters
- configuring/tuning a controller to comply with a specified function

## Unit Mapping Information

This unit replaces and is equivalent to UEENEEI106A Set up and adjust PID control loops.

## Links

Companion Volume implementation guides are found in VETNet - -

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