



**Australian Government**

# **UEEEL0071 Select low voltage power factor correction equipment**

**Release: 2**

# UEEEL0071 Select low voltage power factor correction equipment

## Modification History

Release 2. Minor change. Typographic error in prerequisites corrected.

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 select low voltage (LV) power factor correction equipment.

It includes preparing and selecting (sizing) power factor correction equipment for commercial and/or industrial installations and documenting the selection of the equipment.

The correction equipment is limited to the capacitive type, including control devices/systems, including contactors or solid-state types.

No 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

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

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

UEEEL0003 Arrange circuits, control and protection for general electrical installations

UEEEL0020 Solve problems in low voltage a.c. circuits

UEEEL0039 Design, install and verify compliance and functionality of general electrical installations

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

UEEEL0018 Select wiring systems and cables for general electrical installations

UEEEL0005 Develop and connect electrical control circuits

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

UEEEL0021 Solve problems in electromagnetic devices

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

UEEEL0012 Install low voltage wiring, appliances, switchgear and associated accessories and

UEECD0043 Solve problems in direct current circuits

or

UEECD0044 Solve problems in multiple path circuits

UEECD0046 Solve problems in single path circuits

## Competency Field

Electrical

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Prepare to select power factor correction equipment**

#### **2 Select power factor correction equipment**

### PERFORMANCE CRITERIA

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

- |            |                                                                                                                                                                   |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1.1</b> | Scope of the electrical installation is determined from job specifications and/or appropriate person/s                                                            |
| <b>1.2</b> | Work health and safety (WHS)/occupational health and safety (OHS) electrical installation requirements and relevant industry standards are identified and applied |
| <b>1.3</b> | Cable routes, route lengths of cables and conditions of the wiring system for operation are determined from job specifications and/or appropriate person/s        |
| <b>2.1</b> | Wiring systems are selected for suitability of the environments                                                                                                   |
| <b>2.2</b> | Cable conductor sizes are selected for current-carrying                                                                                                           |

capacity requirements, voltage-drop and earth fault-loop impedance limitations

**2.3** Circuit protective devices are selected to meet job specifications for coordination with conductor current-carrying capacity

**2.4** Earthing system components are selected for the multiple earth neutral (MEN) system

**2.5** Evidence of the electrical equipment selected is obtained in accordance with WHS/OHS safety requirements

### **3 Complete documentation**

**3.1** Evidence from manufacturer/supplier of the selected electrical equipment is obtained in accordance with WHS/OHS safety requirements

**3.2** Selection justification and calculations are documented in accordance with workplace procedures

**3.3** Electrical installation arrangement and manufacturer specifications for selected items are documented in accordance with workplace procedures and forwarded to appropriate person/s

## **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.

Selecting power factor correction equipment must include at least two different power factor installations from the following:

- LV installation using contactor switching
- LV installation using solid-state switching
- high voltage (HV) installation using contactor switching
- HV installation using solid-state switching

## **Unit Mapping Information**

This unit replaces and is equivalent to UEENEEG177A Select low voltage power factor

correction equipment.

## Links

Companion Volume implementation guides are found in VETNet - -

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