



Australian Government

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

Release: 1

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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 configure human-machine interface (HMI) and industrial networks.

It includes preparing the process control schemes that meet safety and process requirements, and selecting control equipment and interconnecting cabling and tubing/piping based on calculated and measured arrangements.

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

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

UEEIC0029 Set up and adjust PID control loops

UEEIC0030 Set up and adjust advanced PID process control loops

Competency Field

Instrumentation & Control

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Prepare to set up and configure HMI and industrial networks

- 1.1** Scope of the control system is determined from job specifications
- 1.2** Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for the control system are identified, obtained and applied
- 1.3** Control apparatus and interconnecting components required for control system are arranged and determined from job specifications and in accordance with process control systems and relevant industry standards

2 Set up and configure HMI and industrial networks

- 2.1** Manufacturer specifications and limitations of relevant control apparatus is sought and comparisons made with process parameters and control requirements in accordance with job specifications
- 2.2** Control apparatus is selected in accordance with compatibility with process parameters, control requirements and relevant environmental conditions
- 2.3** Specified apparatus ingress protection (IP) rating is sought from manufacturer specifications, as required
- 2.4** Control valves are selected in accordance with percentage travel flow and loop-and-process characteristics, optimum size, range ability, ability to cope with process pressures and relevant environmental conditions

3 Select interconnecting cabling and tubing/piping

- 3.1** Control cabling and configuration are selected in accordance with relevant environmental conditions and interconnection requirements
- 3.2** Tubing/piping and accessories are sized to capacity and pressure requirements in accordance with job specifications
- 3.3** Route lengths of cable and tubing/piping are determined from site drawings in accordance with job specifications

- 3.4** Process control system is arranged and specifications for all selected items are documented in accordance with workplace procedures and forwarded to relevant 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.

Setting up and configuring HMI and industrial networks must include the following:

- at least two process control systems with:
 - more than one input
 - more than one final control element

Unit Mapping Information

This unit replaces and is equivalent to UEENEEI113A Set up and configure human-machine interface (HMI) and industrial networks.

Links

Companion Volume implementation guides are found in VETNet - -

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